Vol. I

Public Draft EIR/EIS

Folsom South of U.S. 50 Specific Plan Project

SCH #2008092051

US Army Corps of Engineers ®
Sacramento District

CITY OF FOLSOM
DISTINCTIVE BY NATURE

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

Prepared by:

AECOM and RMC Water and Environment

AECOM

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Vol. I

Public Draft EIR/EIS

Folsom South of U.S. 50 Specific Plan Project

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DRAFT ENVIRONMENTAL IMPACT REPORT/ DRAFT ENVIRONMENTAL IMPACT STATEMENT

Folsom South of U.S. 50 Specific Plan Project
Sacramento County, California

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ABSTRACT

This joint Draft Environmental Impact Report/Draft Environmental Impact Statement (DEIR/DEIS) documents the analysis of the potential effects of implementing each of six alternative land use scenarios for a mixed-use development in the approximately 3,500-acre Folsom South of U.S. 50 Specific Plan area, in eastern Sacramento County, California. This abstract is provided in compliance with National Environmental Policy Act (NEPA) requirements. The EIR/EIS documents the existing condition of environmental issues and resources in and around areas considered for development, and potential impacts on those issues and resources as a result of implementing the alternatives. The land development alternatives considered in detail are: (1) No Project; (2) No USACE Permit; (3) Proposed Project (Applicants' Preferred Alternative); (4) Resource Impact Minimization; (5) Centralized Development; and (6) Reduced Hillside Development. The DEIR/DEIS also evaluates in detail 11 off-site alternatives to provide potable water conveyance and treatment in support of the proposed land use development in the specific plan area.

The DEIR/DEIS for the Folsom South of U.S. 50 Specific Plan project is available for a NEPA public comment and review period of 60 days from the date of publication of the notice of availability in the Federal Register. A copy can also be found on the Internet at http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/index.html.

Your written comments should be postmarked 60 days from the date of publication of the notice of availability in the Federal Register. The notice of availability is expected to be published in the Federal Register on July 9, 2010. Please submit and address your written comments on the DEIS to the U.S. Army Corps of Engineers, Regulatory Branch, at the address noted above by September 10, 2010.

NOTE TO REVIEWERS

Reviewers should provide AECOM or the U.S. Army Corps of Engineers (USACE), the NEPA lead agency, with their comments during the review period of the DEIS. This will enable USACE to analyze and respond to the comments at one time and to use the information acquired in preparation of the Final Environmental Impact Statement (FEIS), thus avoiding undue delay in the decision-making process. Reviewers have an obligation to structure their participation in the NEPA process so that it is meaningful and alerts the agency to reviewers' positions and contentions. *Vermont Yankee Power Corp. v. NRDC,* 435 U.S. 519, 533 (1978). Environmental objections that could have been raised at the draft stage may be waived if not raised until after completion of the FEIS. *City of Angoon v. Hodel* (9th Circuit, 1986) and *Wisconsin Heritages, Inc. v. Harris,* 490 F. Supp. 1334, 1338 (E.D. Wis. 1980). Comments on the DEIS should be specific and should address the adequacy of the statement and the merits of the alternatives discussed (40 CFR 1503.3).

EXECUTIVE SUMMARY

ES.1 INTRODUCTION

This executive summary highlights the major areas of importance in the environmental analysis for the proposed Folsom South of Highway 50 Specific Plan project, as required by Section 15123 of the California Environmental Quality Act (CEQA) Guidelines (State CEQA Guidelines) and 40 Code of Federal Regulations (CFR) Section 1502.12 of the National Environmental Policy Act (NEPA). As stated in California Code of Regulations (CCR) Section 15123(a) of the State CEQA Guidelines, "[a]n EIR shall contain a brief summary of the proposed action and its consequences. The language of the summary should be as clear and simple as reasonably practical." As stated in NEPA Section 1502.12, "each environmental impact statement shall contain a summary which adequately and accurately summarizes the statement. The summary shall stress the major conclusions, areas of controversy (including issues raised by agencies and the public), and the issues to be resolved (including the choice among alternatives)." As required by the State CEQA Guidelines and NEPA regulations, this executive summary includes (1) a summary description of the proposed project, (2) a synopsis of environmental impacts and recommended mitigation measures (Table ES-1), (3) identification of the alternatives evaluated, and (4) a discussion of the areas of controversy associated with the project. For additional detail regarding specific issues, please consult Chapter 2, "Alternatives"; Chapter 3, "Affected Environment, Environmental Consequences, and Mitigation Measures"; and Chapter 4, "Other Statutory Requirements."

ES.2 LEAD AND COOPERATING AGENCIES

This document is a joint draft environmental impact report/draft environmental impact statement (DEIR/DEIS) prepared for the Folsom South of Highway 50 Specific Plan project (the "proposed action" for purposes of NEPA and the "proposed project" for purposes of CEQA, hereinafter referred to as "the project").

The City of Folsom (City) is the lead agency for the project under CEQA, and the U.S. Army Corps of Engineers (USACE), Sacramento District, is the Federal lead agency under NEPA. The U.S. Bureau of Reclamation (Reclamation) is a Cooperating Agency under NEPA.

ES.3 TYPE OF ENVIRONMENTAL IMPACT REPORT/ENVIRONMENTAL IMPACT STATEMENT

This EIR/EIS contains an analysis at a program level. For some issue areas, sufficient data were available for a more detailed level of analysis. Where this analysis was performed, the topic section begins with a statement that impacts would be the same for individual phases of development as for the project as a whole.

ES.4 REQUESTED ENTITLEMENTS

The following entitlements are requested from the City and USACE for the Proposed Project. Additional approvals, permits, and authorizations are listed in Chapter 1, "Introduction and Statement of Purpose and Need."

City of Folsom

Adoption of the Proposed Project, as well as action alternatives under consideration, requires approval of the following City entitlements:

- certification of the EIR/EIS and Mitigation Monitoring and Reporting Program (MMRP),
- amendment of the Folsom General Plan,
- adoption of a Public Facilities Financing Plan,

- adoption of the Folsom Plan Area Specific Plan,
- possible approval of development agreements between the City and project applicant(s),
- approval of large-lot tentative maps, and
- pre-zoning of the project site.

Future City entitlement approvals may include, but are not limited to, the following:

- use permits,
- approval of tentative parcel and subdivision maps,
- design review,
- lot line adjustments,
- engineering improvement plans,
- planned development permits,
- grading plans, and
- Development Agreement between the City and future project applicant(s).

In addition to the City approvals listed above, approval by the Sacramento Local Agency Formation Commission (LAFCo) would also be required.

U.S. Army Corps of Engineers

The project applicant(s) are also seeking a Federal permit from USACE pursuant to Section 404 of the Clean Water Act (CWA) for the discharge of fill material into waters of the United States. The evaluation of the proposed project requires the USACE ensure compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, Section 7 of the Endangered Species Act, and other applicable laws.

In addition to the authorizations and approvals requested from the City and USACE, permits and other approval actions from the following Federal, state, regional, and local agencies may be required:

- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service
- U.S. Bureau of Reclamation
- National Marine Fisheries Service
- California Department of Education
- California Department of Fish and Game
- California Department of Transportation
- California Department of Public Health
- California State Historic Preservation Office
- Central Valley Regional Water Quality Control Board (Region 5)
- Sacramento Local Agency Formation Commission
- County of Sacramento
- City of Rancho Cordova
- Sacramento Metropolitan Air Quality Management District

ES.5 PROJECT CHARACTERISTICS

ES.5.1 PROJECT LOCATION

The project site includes the Specific Plan Area (SPA), and a Water Facilities Study Area. The SPA is located in eastern Sacramento County, south of U.S. Highway 50 (U.S. 50), east of Prairie City Road, North of White Rock Road, and west of the El Dorado County Line (see Exhibits 2-1 and 2-2). The Water Facilities Study Area includes the Natomas Central Mutual Water Company (NCMWC) service area, portions of the Sacramento River,

and pipeline alignments and water treatment plant (WTP) locations which extend from the community of Freeport through central and eastern Sacramento County to the SPA.

ES.5.2 ELEMENTS OF THE PROJECT

The project applicant(s)—the South Folsom Property Owners Group—are requesting annexation into the City of Folsom, and approval of various discretionary entitlements in support of a specific plan for a mixed-use development and supporting on- and off-site roadways and infrastructure (project). The specific plan covers an area in eastern Sacramento County, south of U.S. 50, and adjacent to the existing Folsom city limits. The specific plan supports a combination of employment-generating uses, retail and supporting services, recreational uses, and a broad range of residential uses and associated infrastructure and roads on approximately 3,510-acres that is located entirely within the City's sphere of influence, but currently under jurisdiction of Sacramento County. The project site, however, encompasses a larger area: it includes the entire area proposed for annexation, including U.S. 50 right-of-way and proposed interchange areas, for a total of approximately 3,584 acres. The project site is located south of U.S. 50, north of White Rock Road, east of Prairie City Road (a small area extends west of Prairie City Road at the southwest corner of the project site), and west of the Sacramento/El Dorado County line (see Exhibits 2-1 and 2-2 in Chapter 2, "Alternatives").

The Proposed Project includes 10,210 residential units at various densities on a total of 1,477.2 acres; 362.8 acres designated for commercial and industrial use, including a regional shopping center; public/quasi-public uses; elementary, middle, and high schools on 179.3 acres; 121.7 acres of community and neighborhood parks; stormwater detention basins; 1,053.1 acres of open-space areas and open-space preserves; and major roads with landscaping.

Several off-site infrastructure facilities (intersection expansions to allow access to and from U.S. 50 and the SPA, an overpass of U.S. 50, two roadway connections and sewer pipelines from the Folsom Heights property into El Dorado Hills, a sewer force main connection to the existing City system, a detention basin, and water pipelines and facilities) are proposed to serve project development and are addressed in this DEIR/DEIS.

Based on current water demand assumptions and implementation of reasonable conservation measures in years when water supplies could be subjected to dry-year reductions of up to 25%, the project would require not more than 5,600 acre-feet[1] of water per year (AFY). The City is proposing Off-site Water Facilities that would involve the permanent assignment to the City of the contractual entitlement to Central Valley Project (CVP) contract entitlement water totaling not more than 8,000 AFY[2] from NCMWC, diverting this water supply from the Sacramento River, and conveying this water to the SPA.

In addition, this project would include the City purchasing from Sacramento County Water Agency (SCWA) dedicated capacity within the Freeport Regional Water Project (Freeport Project), which would serve as the point of diversion (POD) on the Sacramento River and partial conveyance pathway for not more than 6,000 AFY purchased from NCMWC. The City proposes to add the Freeport POD to the assigned CVP water to facilitate the diversion of these supplies at the existing Freeport Project diversion. The City proposes to pump and convey the assigned NCMWC CVP water supply through the Freeport Project diversion facility and conveyance pipeline to the point where SCWA and East Bay Municipal Utilities District (EBMUD) pipeline split or the bifurcation point. The City would then construct new water supply conveyance infrastructure from the bifurcation point to the SPA.

Provision of water service to the project would involve the following actions by the City:

- taking an assignment for up to 8,000 AFY of CVP surface water from NCMWC (which is currently delivered in July and August in accordance with NCMWC's irrigation demands);

[1] An acre-foot of water contains 325,851 gallons; one million gallons is about 3 acre-feet.
[2] NCMWC's CVP water contract is subject to a dry-year provision whereby total deliveries can be reduced by up to 25%.

- rescheduling the existing CVP July/August delivery schedule to a year-round municipal and industrial (M&I) schedule;

- entering into an agreement with SCWA to convey the water acquired by the City from NCMWC through the Freeport Project, to facilitate the integration of the Off-site Water Facilities with existing Freeport Project diversion and water conveyance facilities; and

- Constructing conveyance, pump, storage, and treatment facilities, including booster pump station(s), water treatment and storage facilities, and conveyance facilities.

Consistent with the requirements of CEQA and NEPA, the City is evaluating several conveyance alternatives to enable the delivery of not more than 6,000 AFY of CVP water assigned by NCMWC to the SPA. Each alternative includes optional route alignments and/or operational features (e.g., WTPs and associated storage facilities) to cover the range of feasible alternatives available to the City. Exhibits 2-25, 2-27, 2-28, and 2-29 in Chapter 2, "Alternatives," illustrate the potential locations of water supply and conveyance infrastructure to serve the SPA.

Information regarding the location, design, and operation of the various project components is presented in detail in Chapter 2, "Alternatives."

ES.6 SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Table ES-1 displays a summary of significant impacts and proposed mitigation measures that would avoid, eliminate, minimize, or reduce potential impacts. In the table, the level of significance of the impact following implementation of each mitigation measure is identified. Effects that would occur under each alternative development scenario on Table ES-1 are identified as follows: PP (Proposed Project), RIM (Resource Impact Minimization), CD (Centralized Development), RHD (Reduced Hillside Development), NF (No Federal Action), and NP (No Project). For impacts related to the water supply portion of the project, ten numbered alternatives are analyzed. In Table ES-1, the impact and its significance conclusion is followed by the mitigation requirement. For detailed descriptions of project impacts and mitigation measures, please see Sections 3.1 through 3.17 A and B in Chapter 3, "Affected Environment, Environmental Consequences, and Mitigation Measures."

ES.7 ALTERNATIVES

The State CEQA Guidelines (CCR Section 15126.6) and the NEPA Council on Environmental Quality (CEQ) Regulations (40 CFR 15012.14) require that an EIR/EIS describe a range of reasonable alternatives to the proposed project that could feasibly attain the basic objectives of the project and avoid and/or lessen the environmental effects of the project. Chapter 2, "Alternatives," of this EIR/EIS provides a comparative analysis between the Proposed Project/Action and four "Land" alternatives, as well as comparative analysis between ten "Water" alternatives. The "Land" alternatives describe a range of possible land use plans for the SPA, and the "Water" alternatives describe a range of potential water facility options which could be used to convey the necessary water supply to the SPA. The No Project/No Action Alternative (hereinafter referred to as the "No Project Alternative") as required under CEQA and NEPA and a No USACE Permit Alternative as required by USACE under NEPA is also evaluated in Chapter 2.

ES.7.1 NO PROJECT ALTERNATIVE

Under the No Project Alternative, the SPA would not be annexed to the City of Folsom; instead, it would remain under the jurisdiction of Sacramento County. This alternative assumes that existing land uses at the project site (i.e., livestock grazing) would continue, including construction of up to 44 rural residences on 80-acre parcels as permitted under the adopted Sacramento County General Plan designations and zoning. Furthermore, no off-site water facilities would be constructed under this alternative. This analysis uses existing site conditions at the time that the Notice of Preparation/Notice of Intent was published (September 2008) as the "existing conditions"

portion of the "no project" scenario (see State CEQA Guidelines CCR Section 15126.6[e][2]) to allow consideration of a full range of alternatives. Remediation of contaminated soil and groundwater on the Aerojet General Corporation parcel along the western property boundary is a separate action that will continue either with or without project implementation.

ES.7.2 NO USACE PERMIT ALTERNATIVE

This alternative is designed to avoid the placement of dredged or fill material into waters of the U.S., including wetlands, thus eliminating the need for a USACE Section 404 CWA permit. As a result, there would be no direct impacts to waters of the U.S. under this alternative, compared to 46.3 combined acres of fill under the total Proposed Project (i.e., including both land development and off-site water facilities). This alternative would require compliance with Section 10 of ESA. Under this alternative, 1,506.1 acres of the project site would be designated as open space, compared to 1,057 acres under the Proposed Project Alternative. This alternative also would require more expensive/time-consuming, methods of construction for roadways and utilities. Under this alternative, approximately 3,837 fewer residential housing units would be constructed, and approximately 131 fewer acres would be used for commercial/industrial development, than under the Proposed Project. The acreage proposed for park use would be reduced to 84.8 acres under this alternative.

ES.7.3 RESOURCE IMPACT MINIMIZATION ALTERNATIVE

This alternative would include a larger area of high-quality biological habitat in the proposed preserve area than under the Proposed Project Alternative, and would also preserve all of the on-site cultural resources that would be eligible for listing on the California Register of Historical Resources and National Register of Historic Places. A Section 404 CWA permit would still be required under this alternative, as it would involve the placement of fill material into 26.47 acres of waters of the U.S., 13.03 fewer acres than would be filled by the Proposed Project Alternative. An additional 375 acres of land across the project site would be designated as open space. A total of approximately 1,429 acres, approximately 40% of the project site, would become a protected wetland preserve. Areas of the project site with higher concentrations of cultural resources, including areas on the northwestern portion of the project site would also remain in open space under this alternative. The total acreage of residential development would be reduced by approximately 205 acres and approximately 2,245 fewer residential units would be constructed. Overall density would decrease (average density across the residentially designated area would be approximately 6 dwelling units per acre (du/ac), compared to 6.65 du/ac under the Proposed Project Alternative). Commercial and industrial development sites would be reduced by approximately 113 acres. Development of park land would be reduced to 105.7 acres. The types of land uses and general on- and off-site infrastructure and roadway improvements would remain the same as under the Proposed Project Alternative.

ES.7.4 CENTRALIZED DEVELOPMENT ALTERNATIVE

This alternative would preserve approximately 75% of the eastern part of the project site, which lies within the Sierra Nevada foothills, in its current undeveloped state. Commercial development would still occur along the south side of U.S. 50 within the foothills. It would also entail about 1,000 fewer equivalent dwelling units (EDUs) than the Proposed Project. This alternative would fill 37.06 acres of waters of the U.S., 2.48 acres fewer than would be filled under the Proposed Project Alternative. The Centralized Development Alternative envisions a higher density of residential development on a smaller footprint compared to the Proposed Project Alternative, resulting in more dwelling units per acre. The acreage of commercial and industrial development would be similar in this alternative compared to the Proposed Project Alternative. The acreage proposed for park use is reduced to 118.7 acres in this alternative, including local parks which are included in acreage totals for residential and mixed-use designations. The types of land uses and general on- and off-site infrastructure improvements under the Centralized Development Alternative would remain the same as under the Proposed Project Alternative. A 1,464.4-acre area would be dedicated to open space (approximately 407 acres more than under the Proposed Action Alternative).

ES.7.5 REDUCED HILLSIDE DEVELOPMENT ALTERNATIVE

This alternative would reduce the developed area on the eastern portion of the project site, which lies within the Sierra Nevada foothills, leaving more of this area in its current undeveloped state for aesthetic, biological, and cultural resource protection purposes. It would also entail about 1,300 additional EDUs compared to the Proposed Project, with a much higher density of development within the central portion of the project site, thus reducing potential impacts related to traffic and air quality. The Reduced Hillside Development Alternative would fill 42.69 acres of waters of the U.S., 3.19 acres more than would be filled under the Proposed Project Alternative. The Reduced Hillside Development Alternative envisions a greater density of residential development on a slightly smaller footprint compared to the Proposed Project Alternative, resulting in more dwelling units per acre. The total acreage of residential development would be reduced by approximately 64 acres, but the density would be increased. The acreage of commercial and industrial development would be increased by less than 20 acres. The acreage proposed for park use (including local parks which are included in acreage totals for residential and mixed-use designations) is increased to 170.9 acres in this alternative. The types of land uses and general on- and off-site infrastructure and roadway improvements under the Reduced Hillside Development Alternative would remain the same as under the Proposed Project. A 1,057-acre area would be dedicated to open space (the same size as under the Proposed Project).

ES.7.6 WATER SUPPLY ALTERNATIVES

The Water Supply alternatives evaluated at an equal level of detail in this EIR/EIS consist of the following (see Chapter 2, "Alternatives" for additional detail):

- No USACE Permit Off-site Water Facility Alternative
- Proposed Off-site Water Facility Alternative PA – Raw Water Conveyance – Grant Line Road Alignment and On-site WTP
- Off-site Water Facility Alternative 1 – Raw Water Conveyance – Grant Line Road Alignment and White Rock WTP
- Off-site Water Facility Alternative 1A – Raw Water Conveyance – Grant Line Road Route Variation Alignment and White Rock WTP
- Off-site Water Facility Alternative 2 – Treated Water Conveyance – Douglas Road Alignment and Vineyard SWTP
- Off-site Water Facility Alternative 2A – Treated Water Conveyance – Douglas Road Route Variation Alignment and Vineyard SWTP
- Off-site Water Facility Alternative 2B – Treated Water Conveyance – North Douglas Tanks Variation Alignment and Vineyard SWTP
- Off-site Water Facility Alternative 3 – Raw Water Conveyance – Douglas Road Alignment and White Rock WTP
- Off-site Water Facility Alternative 3A – Raw Water Conveyance – Douglas Road Route Variation Alignment and White Rock WTP
- Off-site Water Facility Alternative 4 – Raw Water Conveyance to Folsom Boulevard Alignment and Folsom Boulevard WTP

- Off-site Water Facility Alternative 4A – Raw Water Conveyance to Folsom Boulevard – Route Variation Alignment and Folsom Boulevard WTP

ES 7.7 INTEGRATION OF "LAND" AND "WATER" ALTERNATIVES FOR DEVELOPMENT

Under the No Project Alternative, the SPA could be developed with up to 44 rural residences on 80-acre parcels as currently zoned under the Sacramento County General Plan, and no off-site water facilities would be constructed because each rural resident would be responsible for developing his or her on-site well. Therefore, for purposes of this EIR/EIS, the No Project Alternative is evaluated in the 3A "Land" sections.

Under the No USACE Permit Alternative, there would be no placement of dredged or fill material into waters of the U.S. (including wetlands) from either the "Land" or "Water" portions of the project, thus eliminating the need for a USACE Section 404 CWA permit. In order to achieve "no fill," no development in the SPA would occur within 50 feet of a water of the United States, the water treatment plant (regardless of whether it is located off-site or on-site) would not be constructed within 50 feet of a water of the United States, and the off-site water conveyance pipeline would use trenchless construction methods (e.g., horizontal directional drilling or jack-and-bore) where the pipeline route intersected any water of the United States. Therefore, only the No USACE Permit Off-site Water Facility Alternative could be selected if the No USACE Permit "Land" Alternative were selected for development of the SPA.

Any of the other 10 off-site water alternatives listed above and described in detail in Chapter 2, "Alternatives" could ultimately be implemented for either the Resource Impact Minimization, Centralized Development, or Reduced Hillside Development Alternative. Because the off-site water facilities are different from development of the SPA and would occur in locations that are further removed spatially from the SPA, the impacts of these water facilities are evaluated in the 3B "Water" sections of this EIR/EIS. However, the City and the USACE wish to make clear to the reader that the "project" as a whole consists of both development of the SPA and off-site facilities necessary to provide water in support of the SPA development. Thus, when considering impacts of the "project" as a whole, it is necessary to consider both the 3A and 3B impacts taken together.

ES.7.8 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The State CEQA Guidelines require identification of an environmentally superior alternative from among the proposed project and the alternatives evaluated. If the No Project Alternative is environmentally superior, CEQA requires identification of the "environmentally superior alternative" other than the No Project Alternative from among the proposed project and the alternatives evaluated. Federal NEPA regulations also recommend that an environmentally preferred alternative be identified; however, under NEPA, that alternative does not need to be identified until the final record of decision is issued. Therefore, the discussion in this section of the environmentally superior alternative is intended to satisfy only the State CEQA requirements.

As discussed in detail in Chapter 2, "Alternatives" The No Project Alternative includes (1) no annexation of the SPA to the City, (2) potential development of up to 44 rural residences in the SPA under the existing Sacramento County zoning AG-80, and (3) no construction of any off-site water facilities. Therefore, "no project," from both a "Land" and "Water" perspective, is evaluated as one combined No Project Alternative in the 3A "Land" sections of this DEIR/DEIS. The No Project Alternative would be the Environmentally Superior Alternative. This alternative provides the greatest opportunity for avoidance and/or substantial reduction in the significant environmental impacts of the project. However, this alternative would not meet the project purpose and need, nor would it meet any of the project objectives, as identified in Chapter 1 of this DEIR/DEIS.

Other than the No Project Alternative, either the No USACE Permit, Resource Impact Minimization, or Centralized Development Alternatives could be considered the Environmentally Superior Alternative for the "Land" portion of the project.

Off-site Water Facility Alternative 2B would be considered the Environmentally Superior Alternative for the "Water" portion of the project.

ES.8 KNOWN AREAS OF CONTROVERSY

CCR Section 15123 of the State CEQA Guidelines and 40 CFR Section 1502.12 of the NEPA regulations require that a summary of an EIR/EIS identify areas of controversy known to the lead agency, including issues raised by agencies and the public. During the public comment period for the notice of preparation/notice of intent, various comment letters were received regarding the project. Appendix B of the EIR/EIS includes a summary of the public scoping process as well as summaries of the comments received in writing and at the public meetings held on September 25, 2008. In general, areas of potential controversy known to the City, USACE, and the project applicant(s) include biological resources, circulation (traffic and alternative transportation methods), air quality, noise, hydrology and water quality, hazardous materials, water supply, provision of public services, and provision of public utilities. These issues were considered in the preparation of this EIR/EIS and, where appropriate, are addressed in the environmental impact analyses presented in Chapters 3 and 4.

ES.9 PUBLIC PARTICIPATION AND ADDITIONAL STEPS IN THE CEQA/NEPA REVIEW PROCESS

This EIR/EIS is being distributed to interested agencies, stakeholder organizations, and individuals. This distribution ensures that interested parties have an opportunity to express their views regarding the environmental effects of the project, and to ensure that information pertinent to permits, authorizations, and approvals is provided to decision makers for the lead agencies and CEQA responsible and trustee agencies. This document is available for review by the public during normal business hours at Folsom City Hall, 50 Natoma Street, Folsom, CA 95630 and by appointment at USACE, 1325 J Street, Sacramento, CA 95814-2922. The document will also be available on the City's website at http://www.folsom.ca.us/depts/community_development/default.asp and the USACE website at http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/EISs/EIS-index.html. The DEIR is being distributed for a 45-day period that will end on August 16. The DEIS is being distributed for a 60-day review period that will end on September 7, 2010.

For CEQA purposes, written comments to the City of Folsom must be postmarked no later than August 16, 2010. However, the USACE will continue to accept comments for NEPA purposes until the ROD is issued. Written comments should be sent to the following addresses:

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Lisa Gibson
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If comments are provided via e-mail, please include the project title in the subject line, attach comments in MS Word format, and include the commenter's U.S. Postal Service mailing address.

A joint public meeting/hearing on the DEIR/DEIS will be conducted by the City and USACE on August 2, 2010 from 5 p.m. to 7 p.m. at the Folsom Community Center, at 52 Natoma Street in Folsom. The City of Folsom

Planning Commission will also conduct a public hearing on the DEIR and draft specific plan at its regular meeting on Wednesday, August 4, 2010 at 6:30 p.m. in the City Council Chambers at 50 Natoma Street. It is not necessary to provide testimony during the public hearing; comments on the DEIR/DEIS will be accepted throughout the meeting and will be recorded at the public comment table and via court reporter. Comments may also be submitted throughout the comment period as described above.

Once all comments have been assembled and reviewed, responses will be prepared to address significant environmental issues that have been raised in the comments. The responses will be included in a final EIR/EIS.

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.1 AESTHETICS - LAND		
3A.1-1: Substantial Adverse Effect on a Scenic Vista. Project implementation would result in the degradation of the visual quality of a scenic vista.	Land	**ON- & OFF-SITE** **NP:** direct LTS, no indirect **ON-SITE** **NCP, PP, RIM, CD, RHD:** direct significant, no indirect **OFF-SITE** Direct LTS, no indirect

ON-SITE

NP: No mitigation measures required.

NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.1-1: Construct and Maintain a Landscape Corridor Adjacent to U.S. 50. The project applicant(s) for all project phases shall fund, construct, and maintain a landscaped corridor within the SPA, south of U.S. 50. This corridor shall be 50 feet wide, except that the landscaped corridor width shall be reduced to 25 feet adjacent to the proposed regional mall. Landscaping plans and specifications shall be approved by Caltrans and the City of Folsom, and constructed by the project applicant(s) before the start of earthmoving activities associated with residential or commercial units. Landscaped areas would not be required within the preserved oak woodlands. As practicable, landscaping shall primarily contain native and/or drought tolerant plants. Landscaped corridors shall be maintained in perpetuity to the satisfaction of the City of Folsom.

Implementation: Project applicant(s) of all project phases.

Timing: 1. Plans and specifications: before approval of grading plans and building permits

2. Construction: before the start of earthmoving activities associated with residential and commercial units

3. Maintenance: in perpetuity

Enforcement: City of Folsom Community Development Department and Caltrans

Significance after Mitigation: significant and unavoidable

OFF-SITE

No mitigation measures are required.

Significance after Mitigation: significant and unavoidable

NP (No Action/No Project) NCP (No USACE Permit) PP (Proposed Project) RIM (Resource Impact Minimization)
CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

B (Beneficial) NI (No impact) LTS (Less than significant) PS (Potentially significant) S (Significant) SU (Significant and unavoidable)

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.1-2: Damage to Scenic Resources Within a Designated Scenic Corridor. Project implementation could damage the character of the viewshed from a County-designated scenic corridor. **ON-SITE** **NP:** No mitigation measures required. **NCP, PP, RIM, CD, RHD:** No feasible mitigation measures are available. **OFF-SITE** No mitigation measures are required. ***Significance after Mitigation: significant and unavoidable***	Land	**ON- & OFF-SITE** **NP:** direct LTS, no indirect **ON-SITE** **NCP, PP, RIM, CD, RHD:** direct significant, no indirect **OFF-SITE** No direct or indirect
3A.1-3: Substantial Degradation of Existing Visual Character or Quality of the Site and its Surroundings. Project implementation would substantially degrade the visual character of the SPA through conversion of rolling hills and oak woodland to developed urban uses. **ON-SITE** **NP:** No mitigation measures required. **NCP, PP, RIM, CD, RHD:** Implement Mitigation Measures 3A.1-1 and 3A.7-4a. **OFF-SITE** No feasible mitigation measures are available. (*detention basin*) No mitigation measures are required. (*other off-site improvements*) ***Significance after Mitigation: significant and unavoidable***	Land	**ON- & OFF-SITE** **NP:** direct & significant, no indirect **ON-SITE** **NCP, PP, RIM, CD, RHD:** direct significant, no indirect **OFF-SITE** Direct significant, no indirect (*detention basin*) Direct LTS, no indirect (*other off-site improvements*)

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.1-4: Temporary, Short-Term Degradation of Visual Character for Developed Project Land Uses During Construction. Project implementation would involve four phases of construction over a 20-year-buildout period. Construction activity would involve the temporary and short-term use of staging areas for construction equipment and materials, which would be visible to adjacent project land uses that have already been developed.	Land	**NP:** direct LTS, no indirect **NCP, PP, RIM, CD, RHD:** direct significant, no indirect
NP: No mitigation measures are required. **NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.1-4: Screen Construction Staging Areas.** The project applicant(s) for all project phases shall locate staging and material storage areas as far away from sensitive biological resources and sensitive land uses (e.g., residential areas, schools, parks) as feasible. Staging and material storage areas shall be approved by the appropriate agency (identified below) before the approval of grading plans and building permits for all project phases and shall be screened from adjacent occupied land uses in earlier development phases to the maximum extent practicable. Screens may include, but are not limited to, the use of such visual barriers such as berms or fences. The screen design shall be approved by the appropriate agency to further reduce visual effects to the extent possible. Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries shall be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties, and Caltrans). Implementation: Project applicant(s) of all project phases. Timing: Before approval of grading plans and building permits and during construction for all project phases. Enforcement: 1. For those improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department. 2. For the two local roadway connections from Folsom Heights into El Dorado Hills: El Dorado County Community Services Department. 3. For the U.S. 50 interchange improvements: Caltrans. ***Significance after Mitigation: significant and unavoidable***		
3A.1-5: Creation of a New Source of Substantial Light or Glare that would Adversely Affect Day or Nighttime Views in the Area New Light and Glare. Project implementation would require lighting of new development, which would cause new and increased light and glare.	Land	**NP:** direct LTS, no indirect **NCP, PP, RIM, CD, RHD:** direct significant, no indirect
NP: No mitigation measures are required. **NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.1-5: Establish and Require Conformance to Lighting Standards and Prepare and Implement a Lighting Plan.** To reduce impacts associated with light and glare, the City shall: ▸ Establish standards for on-site outdoor lighting to reduce high-intensity nighttime lighting and glare as part of the Folsom Specific Plan design		

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

guidelines/standards. Consideration shall be given to design features, namely directional shielding for street lighting, parking lot lighting, and other substantial light sources, that would reduce effects of nighttime lighting. In addition, consideration shall be given to the use of automatic shutoffs or motion sensors for lighting features to further reduce excess nighttime light.

- Use shielded or screened public lighting fixtures to prevent the light from shining off of the surface intended to be illuminated.

To reduce impacts associated with light and glare, the project applicant(s) of all project phases shall:

- Shield or screen lighting fixtures to direct the light downward and prevent light spill on adjacent properties.
- Place and shield or screen flood and area lighting needed for construction activities, nighttime sporting activities, and/or security so as not to disturb adjacent residential areas and passing motorists.
- For public lighting in residential neighborhoods, prohibit the use of light fixtures that are of unusually high intensity or brightness (e.g., harsh mercury vapor, low-pressure sodium, or fluorescent bulbs) or that blink or flash.
- Use appropriate building materials (such as low-glare glass, low-glare building glaze or finish, neutral, earth-toned colored paint and roofing materials), shielded or screened lighting, and appropriate signage in the office/commercial areas to prevent light and glare from adversely affecting motorists on nearby roadways.
- Design exterior on-site lighting as an integral part of the building and landscape design in the Folsom Specific Plan area. Lighting fixtures shall be architecturally consistent with the overall site design.
- Lighting of off-site facilities within the City of Folsom shall be consistent with the City's General Plan standards.
- Lighting of the off-site detention basin shall be consistent with Sacramento County General Plan standards.
- Lighting of the two local roadway connections from Folsom Heights off-site into El Dorado Hills shall be consistent with El Dorado County General Plan standards.

A lighting plan for all on- and off-site elements within the each agency's jurisdictional boundaries (specified below) shall be submitted to the relevant jurisdictional agency for review and approval, which shall include the above elements. The lighting plan may be submitted concurrently with other improvement plans, and shall be submitted before the installation of any lighting or the approval of building permits for each phase. The project applicant(s) of all project phases shall implement the approved lighting plan.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties).

Implementation: Project applicant(s) of all project phases.

Timing: Before approval of building permits for each project phase.

Enforcement:
1. For all on-site and off-site facilities that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department.
2. For the off-site detention basin: Sacramento County Planning Department.

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3. For the two local roadways off-site into El Dorado Hills: El Dorado County Community Services Department. ***Significance after Mitigation: less than significant***		
3A.1-6: New Skyglow Effects. Project implementation would require lighting of new development that would result in the generation of new and increased skyglow effects, obscuring views of stars, constellations, and other features of the night sky. **NP:** No mitigation measures required. **NCP, PP, RIM, CD, RHD:** Implement Mitigation Measure 3A.1-5. ***Significance after Mitigation: significant and unavoidable***	Land	**NP:** direct & LTS, no indirect **NCP, PP, RIM, CD, RHD:** significant & direct, no indirect
3B.1 AESTHETICS - WATER		
3B.1-1: Substantial Adverse Effect on a Scenic Vista. Implementation of the Off-site Water Facility Alternatives would not result in the degradation of the visual quality of a scenic vista. **NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, &4A:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, &4A:** direct & indirect LTS
3B.1-2: Substantial Degradation of Existing Visual Character or Quality of the "Water" Study Area. Implementation of the Off-site Water Facility Alternatives could substantially degrade the existing visual character or quality of the "Water" Study Area and its surroundings.	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, &4A:** direct & indirect PS
NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, &4A: Mitigation Measure 3B.1-2a: Enhance Exterior Appearance of Structural Facilities. The external appearance of above-ground facilities, including the choice of color and materials, shall seek to reduce the visual impact of the proposed WTP, pump station, and above-ground storage tank facilities. Bright reflective materials and colors shall be avoided. As appropriate, the exterior design of these facilities should follow design guidelines provided in applicable land use plans. Minimum exterior design requirements shall include, but are not limited to, the following: ▸ painting (with earth-colored tones) of structural façades to blend with surrounding land uses, ▸ use of fencing or structural materials similar to those used by nearby land uses, ▸ installation of berms and/or landscaping around the facility (see Mitigation Measure 3B.2-2b for additional detail), and ▸ clustering of structural facilities to maximize open space buffering. Implementation: City of Folsom Utilities Department Timing: Prior to approval of grading plans and building permits for WTP, pump stations, and storage tank facilities.		

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

Enforcement:
1. For structural improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department.
2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department.
3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.

Mitigation Measure 3B.1-2b: Prepare Landscaping Plan. The City shall develop a landscaping plan for each structural facility site that uses a combination of locally derived native vegetation, earthen features (e.g., boulders), and, if appropriate, topographical separations (e.g., berms) to maximize site appearance and shield the new facilities from nearby sensitive receptors to the extent feasible. In addition to complying with local standards, the landscaping plan shall require the following at each site:

- Vegetation shall be arranged in a hierarchy of plant groupings to enhance the visual and scenic qualities of the site(s). To the extent practical, the design will minimize the need for supplemental irrigation.
- New or replacement vegetation shall be compatible with surrounding vegetation and shall be adaptable to the site with regard to rainfall, soil type, exposure, growth rate, erosion control, and energy conservation purposes.
- Plant materials chosen shall be species which do not present any safety hazards, which allow native flora to reestablish in the area, and which require minimal maintenance, including watering, pest control, and clean-up of litter from fruit and droppings.

Implementation: City of Folsom Utilities Department

Timing: Prior to approval of grading plans and building permits for WTP, pump stations, and storage tank facilities.

Enforcement:
1. For structural improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department.
2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department.
3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.

Significance after Mitigation: less than significant

3B.1-3: Creation of a New Source of Substantial Light or Glare that would Adversely Affect Day or Nighttime Views in the "Water" Study Area. Implementation of the Off-site Water Facility Alternatives would create new sources of substantial light or glare, which could adversely affect day or nighttime views in the "Water" Study Area.	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, &4A:** direct PS, no indirect

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, &4A: Mitigation Measure 3B.1-3a: Conformance to Construction Lighting Standards. The City shall limit construction to daylight hours to the extent possible. If nighttime lighting or construction is necessary, the City shall ensure that unshielded lights, reflectors, or spotlights are

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Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

not located and directed to shine toward or be directly visible from adjacent properties or streets. To the extent possible, the City shall minimize the use of nighttime construction lighting within 500 feet of existing residences. This measure shall be identified on grading plans and in construction contracts.

Implementation: City of Folsom Utilities Department

Timing: Prior to approval of grading plans and building permits for WTP, pump stations, and storage tank facilities.

Enforcement:
1. For structural improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department.
2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department.
3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.

Mitigation Measure 3B.1-3b: Prepare and Submit a Lighting Master Plan. The City shall prepare a Lighting Master Plan that covers all Off-site Water Facilities-related outdoor light sources. The Lighting Master Plan shall include the following minimum requirements:

- outdoor lighting shall be properly shielded and installed to prevent light trespass on adjacent properties;
- flood or spot lamps installed as part of the Off-site Water Facilities shall be aimed no higher than 45 degrees above straight down (half-way between straight down and straight to the side) when the source is visible from any off-site residential property or public roadway;
- prohibit the use of harsh mercury vapor, low-pressure sodium, or fluorescent bulbs for public lighting in residential neighborhoods; and
- comply with requirements of local jurisdiction, if applicable.

Implementation: City of Folsom Utilities Department

Timing: Prior to approval of grading plans and building permits for WTP, pump stations, and storage tank facilities.

Enforcement:
1. For structural improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department.
2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department.
3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.

Significance after Mitigation: less than significant

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Impact	Land/Water/GPA	Significance
Mitigation		
3A.2 AIR QUALITY - LAND		
3A.2-1: Generation of Construction Emissions of NO_X and PM_{10}. Construction activities associated with the project would generate intermittent emissions of NO_X and PM_{10}. Because of the large size of the project, construction-generated emissions of NO_X, an ozone precursor, and fugitive PM_{10} dust would exceed SMAQMD-recommended thresholds and would substantially contribute to emissions concentrations that exceed the NAAQS and CAAQS. Thus, project-generated, construction-related emissions of criteria air pollutants and precursors could violate or contribute substantially to an existing or projected air quality violation, expose sensitive receptors to substantial pollutant concentrations, and/or conflict with air quality planning efforts.	Land	**ON-SITE** **NP:** direct LTS, no indirect **NCP, PP, RIM, RHD, CD:** direct significant, no indirect **OFF-SITE** Direct significant, no indirect
ON-SITE **NP:** No mitigation measures required.		
NCP, PP, RIM, RHD, CD: Mitigation Measure 3A.2-1a: Implement Measures to Control Air Pollutant Emissions Generated by Construction of On-Site Elements. To reduce short-term construction emissions, the project applicant(s) for all project phases shall require their contractors to implement SMAQMD's list of Basic Construction Emission Control Practices, Enhanced Fugitive PM Dust Control Practices, and Enhanced Exhaust Control Practices (list below) or whatever mitigation measures are recommended by SMAQMD at the time individual portions of the site undergo construction. In addition to SMAQMD-recommended measures, construction operations shall comply with all applicable SMAQMD rules and regulations. **Basic Construction Emission Control Practices** ▸ Water all exposed surfaces two times daily. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads. ▸ Cover or maintain at least two feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered. ▸ Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited. ▸ Limit vehicle speeds on unpaved roads to 15 miles per hour (mph). ▸ All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used. ▸ Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes (as required by the state airborne toxics control measure [Title 13, Section 2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site.		

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Mitigation		

- Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determine to be running in proper condition before it is operated.

Enhanced Fugitive PM Dust Control Practices – Soil Disturbance Areas

- Water exposed soil with adequate frequency for continued moist soil. However, do not overwater to the extent that sediment flows off the site.
- Suspend excavation, grading, and/or demolition activity when wind speeds exceed 20 mph.
- Install wind breaks (e.g., plant trees, solid fencing) on windward side(s) of construction areas.
- Plant vegetative ground cover (fast-germinating native grass seed) in disturbed areas as soon as possible. Water appropriately until vegetation is established.

Enhanced Fugitive PM Dust Control Practices – Unpaved Roads

- Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site.
- Treat site accesses to a distance of 100 feet from the paved road with a 6 to 12-inch layer of wood chips, mulch, or gravel to reduce generation of road dust and road dust carryout onto public roads.
- Post a publicly visible sign with the telephone number and person to contact at the construction site regarding dust complaints. This person shall respond and take corrective action within 48 hours. The phone number of SMAQMD and the City contact person shall also be posted to ensure compliance.

Enhanced Exhaust Control Practices

- The project shall provide a plan, for approval by the City of Folsom Community Development Department and SMAQMD, demonstrating that the heavy-duty (50 horsepower [hp] or more) off-road vehicles to be used in the construction project, including owned, leased, and subcontractor vehicles, will achieve a project wide fleet-average 20% NO_X reduction and 45% particulate reduction compared to the most current California Air Resources Board (ARB) fleet average that exists at the time of construction. Acceptable options for reducing emissions may include use of late-model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available. The project applicant(s) of each project phase or its representative shall submit to the City of Folsom Community Development Department and SMAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 hp, that would be used an aggregate of 40 or more hours during any portion of the construction project. The inventory shall include the horsepower rating, engine production year, and projected hours of use for each piece of equipment. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs. At least 48 hours prior to the use of heavy-duty off-road equipment, the project representative shall provide SMAQMD with the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman. SMAQMD's Construction Mitigation Calculator can be used to identify an equipment fleet that achieves this reduction (SMAQMD 2007a). The project shall ensure that emissions from all off-road diesel powered equipment used on the SPA do not exceed 40% opacity for more than three minutes in any one hour. Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) shall be repaired immediately, and the City and SMAQMD shall be notified within 48 hours of identification of non-compliant equipment. A visual survey of all in-operation equipment shall be made at least weekly, and a monthly summary of the visual survey results shall be submitted throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey. SMAQMD staff and/or other officials may conduct periodic site inspections to determine compliance. Nothing in this mitigation measure shall supersede other SMAQMD

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Mitigation		

or state rules or regulations.

- If at the time of construction, SMAQMD has adopted a regulation or new guidance applicable to construction emissions, compliance with the regulation or new guidance may completely or partially replace this mitigation if it is equal to or more effective than the mitigation contained herein, and if SMAQMD so permits. Such a determination must be supported by a project-level analysis and be approved by SMAQMD.

Implementation: The project applicant(s) of all project phases.

Timing: Before the approval of all grading plans by the City and throughout project construction, where applicable, for all project phases.

Enforcement: City of Folsom Community Development Department

Mitigation Measure 3A.2-1b: Pay Off-site Mitigation Fee to SMAQMD to Off-Set NO_X Emissions Generated by Construction of On-Site Elements. Implementation of the Proposed Project or the other four other action alternatives would result in construction-generated NO_X emissions that exceed the SMAQMD threshold of significance, even after implementation of the SMAQMD Enhanced Exhaust Control Practices (listed in Mitigation Measure 3A.2-1a). Therefore, the project applicant(s) shall pay SMAQMD an off-site mitigation fee for implementation of any of the five action alternatives for the purpose of reducing NO_X emissions to a less-than-significant level (i.e., less than 85 lb/day). The specific fee amounts shall be calculated when the daily construction emissions can be more accurately determined: that is, if the City/USACE select and certify the EIR/EIS and approves the Proposed Project or one of the other four other action alternatives, the City and the applicants must establish the phasing by which development would occur, and the applicants must develop a detailed construction schedule. Calculation of fees associated with each project development phase shall be conducted by the project applicant(s) in consultation with SMAQMD staff before the approval of grading plans by the City. The project applicant(s) for all project phases shall pay into SMAQMD's off-site construction mitigation fund to further mitigate construction-generated emissions of NO_X that exceed SMAQMD's daily emission threshold of 85 lb/day. The calculation of daily NO_X emissions shall be based on the cost rate established by SMAQMD at the time the calculation and payment are made. At the time of writing this EIR/EIS the cost rate is $16,000 to reduce 1 ton of NO_X plus a 5% administrative fee (SMAQMD 2008c). The determination of the final mitigation fee shall be conducted in coordination with SMAQMD before any ground disturbance occurs for any project phase. Based on information available at the time of writing this EIR/EIS, and assuming that construction would be performed at a consistent rate over a 19-year period (and averaging of 22 work days per month), it is estimated that the off-site construction mitigation fees would range from $517,410 to $824,149, depending on which alternative is selected. Because the fee is based on the mass quantity of emissions that exceed SMAQMD's daily threshold of significance of 85 lb/day, total fees would be substantially greater if construction activity is more intense during some phases and less intense during other phases of the 19-year build out period, and in any event, based on the actual cost rate applied by SMAQMD. (This fee is used by SMAQMD to purchase off-site emissions reductions. Such purchases are made through SMAQMD's Heavy Duty Incentive Program, through which select owners of heavy-duty equipment in Sacramento County can repower or retrofit their old engines with cleaner engines or technologies.)

Implementation: The project applicant(s) of all project phases.

Timing: Before the approval of all grading plans by the City and throughout project construction for all project phases.

Enforcement: The City of Folsom Community Development Department shall not grant any grading permits to the respective project applicant(s) until the respective project applicant(s) have paid the appropriate off-site mitigation fee to SMAQMD.

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Mitigation		

Mitigation Measure 3A.2-1c: Perform a Project-Level Analysis to Disclose Projected PM_{10} Emission Concentrations at Nearby Sensitive Receptors Resulting from Construction of On-Site Elements. Prior to construction of each development phase of on-site land uses, the project applicant shall perform a project-level CEQA analysis that includes detailed dispersion modeling of construction-generated PM_{10} to disclose what PM_{10} concentrations would be at nearby sensitive receptors. The dispersion modeling shall be performed in accordance with applicable SMAQMD guidance that is in place at the time the analysis is performed. At the time of writing this EIR/EIS, SMAQMD's most current and most detailed guidance for addressing construction-generated PM_{10} emissions is found in its Guide to Air Quality Assessment in Sacramento County (SMAQMD 2009a). The project-level analysis shall incorporate detailed parameters of the construction equipment and activities, including the year during which construction would be performed, as well as the proximity of potentially affected receptors, including receptors proposed by the project that exist at the time the construction activity would occur.

Implementation: All detailed, project-level analysis shall be performed by the project applicant(s) and fully funded by the project applicant of each development phase. All feasible mitigation shall be also be funded by the project applicant(s).

Timing: Before the approval of all grading plans by the City.

Enforcement: City of Folsom Community Development Department

OFF-SITE

Mitigation Measure 3A.2-1d: Implement SMAQMD's Basic Construction Emission Control Practices during Construction of all Off-site Elements located in Sacramento County. The applicants responsible for the construction of each off-site element in Sacramento County shall require its contractors to implement SMAQMD's Basic Construction Emission Control Practices during construction. A list of SMAQMD's Basic Construction Emission Control Practices is provided under Mitigation Measure 3A.2-1a.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., Sacramento County or Caltrans).

Implementation: The project applicant(s) responsible for construction of each off-site element in Sacramento County.

Timing: Before the approval of all grading plans from SMAQMD.

Enforcement:
1. For all off-site improvements within Sacramento County: Sacramento County Planning and Community Development Department.
2. For the U.S. 50 interchange improvements: Caltrans.

Mitigation Measure 3A.2-1e: Implement EDCAQMD-Recommended Measures for Controlling Fugitive PM_{10} dust During Construction of the Two Roadway Connections in El Dorado County. Prior to construction of each roadway extension in El Dorado County, the applicants or its contractors shall develop a fugitive dust control plan that is approved by EDCAQMD and the applicants shall require their contractors to implement the dust control measures identified in the EDCAQMD-approved fugitive dust control plan. The fugitive dust control plan shall contain measures that are recommended by EDCAQMD at the time the plan is developed, which may include, but is not limited to, the current list of EDCAQMD-recommended dust control measures provided in Table 3A.2-5 below.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado County).

NP (No Action/No Project) NCP (No USACE Permit) PP (Proposed Project) RIM (Resource Impact Minimization)
CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

B (Beneficial) NI (No impact) LTS (Less than significant) PS (Potentially significant) S (Significant) SU (Significant and unavoidable)

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

Table 3A.2-5
EDCAQMD-Recommend Fugitive Dust Control Measures

Source	Mitigation Measure
Soil Piles	Enclose, cover, or water twice daily all soil piles
	Automatic sprinkler system installed on soil piles
Exposed Surface/Grading	Water all exposed soil twice daily
	Water exposed soil with adequate frequency to keep soil moist at all times
Truck Hauling Road	Water all haul roads twice daily
	Pave all haul roads
Truck Hauling Load	Maintain at least two feet of freeboard
	Cover load of all haul/dump trucks securely

Source: Table 4.12 of EDCAQMD's *Guide to Air Quality Assessment* (EDCAQMD 2002).

Implementation: The project applicant(s) responsible for constructing the roadway connections in El Dorado County.

Timing: Before the approval of grading plans by EDCAQMD.

Enforcement: El Dorado County Development Services Department.

Mitigation Measure 3A.2-1f: Implement SMAQMD's Enhanced Exhaust Control Practices during Construction of all Off-site Elements. Implement SMAQMD's Enhanced Exhaust Control Practices, which are listed in Mitigation Measure 3A.2-1a, in order to control NO_X emissions generated by construction of all off-site elements (in Sacramento and El Dorado Counties, or Caltrans right-of-way).

Implementation: The project applicant(s) responsible for construction of each off-site element in Sacramento and El Dorado counties.

Timing: Before the approval of all grading plans from the respective air district (i.e., SMAQMD or EDCAQMD).

Enforcement:
1. For the two roadway connections in El Dorado Hills: El Dorado County Development Services Department.
2. For the detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.
3. For the U.S. 50 interchange improvements: Caltrans.

Mitigation Measure 3A.2-1g: Pay Off-site Mitigation Fee to SMAQMD to Off-Set NO_X Emissions Generated by Construction of Off-site Elements. The off-site elements could result in construction-generated NO_X emissions that exceed the SMAQMD threshold of significance, even after implementation of the SMAQMD Enhanced Exhaust Control Practices (listed in Mitigation Measure 3A.2-1a). Therefore, the responsible project applicant(s) for each off-site element in Sacramento County shall pay SMAQMD an off-site mitigation fee for implementation of each off-site element in Sacramento County for the purpose of reducing NO_X emissions to a less-than-significant level (i.e., less than 85 lb/day). The specific fee amounts shall be calculated when the daily construction emissions can be more accurately determined. This calculation shall occur if the City/USACE certify the EIR/EIS and select and approves the Proposed Project or one of the other

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

four other action alternatives, the City, Sacramento County, and the applicants establish the phasing by which construction of the off-site elements would occur, and the applicants develop a detailed construction schedule. Calculation of fees associated with each off-site element shall be conducted by the project applicant(s) in consultation with SMAQMD staff before 'the approval of respective grading plans by Sacramento County. The project applicant(s) responsible for each off-site element in Sacramento County shall pay into SMAQMD's off-site construction mitigation fund to further mitigate construction-generated emissions of NO_X that exceed SMAQMD's daily emission threshold of 85 lb/day. The calculation of daily NO_X emissions shall be based on the cost rate established by SMAQMD at the time the calculation and payment are made. At the time of writing this EIR/EIS the cost rate is $16,000 to reduce 1 ton of NO_X plus a 5% administrative fee (SMAQMD 2008c). The determination of the final mitigation fee shall be conducted in coordination with SMAQMD before any ground disturbance occurs for any project phase. Because the fee is based on the mass quantity of emissions that exceed SMAQMD's daily threshold of significance of 85 lb/day, total fees for construction of the off-site elements would vary according to the timing and potential overlap of construction schedules for off-site elements. This measure applies only to those off-site elements located in SMAQMD's jurisdiction (i.e., in Sacramento County) because EDCAQMD does not offer a similar off-set fee program for construction-generated NO_X emissions in its jurisdiction. (This fee is used by SMAQMD to purchase off-site emissions reductions. Such purchases are made through SMAQMD's Heavy Duty Incentive Program, through which select owners of heavy-duty equipment in Sacramento County can repower or retrofit their old engines with cleaner engines or technologies.)

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., Sacramento County or Caltrans).

Implementation: The project applicant(s) of all off-site elements in Sacramento County.

Timing: Before the approval of each grading plan for the off-site elements in Sacramento County.

Enforcement:

1. For all off-site improvements within Sacramento County: Sacramento County Planning and Community Development Department shall not grant any grading permits to the respective project applicant(s) until the respective project applicant(s) have paid the appropriate off-site mitigation fee to SMAQMD.
2. For the U.S. 50 interchange improvements: Caltrans shall not grant any grading permits to the respective project applicant(s) until the respective project applicant(s) have paid the appropriate off-site mitigation fee to SMAQMD.

Mitigation Measure 3A.2-1h: Perform a Project-Level Analysis to Disclose Projected PM_{10} Emission Concentrations at Nearby Sensitive Receptors Resulting from Construction of Off-site Elements. Prior to construction of each off-site element located in Sacramento County that would involve site grading or earth disturbance activity that would exceed 15 acres in one day, the responsible agency or its selected consultant shall conduct detailed dispersion modeling of construction-generated PM_{10} emissions pursuant to SMAQMD guidance that is in place at the time the analysis is performed. At the time of writing this EIR/EIS, SMAQMD's most current and most detailed guidance for addressing construction-generated PM_{10} emissions is found in its Guide to Air Quality Assessment in Sacramento County SMAQMD 2009a). SMAQMD emphasizes that PM_{10} emission concentrations at nearby sensitive receptors be disclosed in project-level CEQA analysis. Each project-level analysis shall incorporate detailed parameters of the construction equipment and activities, including the year during which construction would be performed, as well as the proximity of potentially affected receptors, including receptors proposed by the project that exist at the time the construction activity would occur. If the modeling analysis determines that construction activity would result in an exceedance or substantial contribution to the CAAQS and NAAQS at a nearby receptor, then the project applicant(s) shall require their respective contractors to implement additional measures for controlling construction-generated PM_{10} exhaust emission and fugitive PM_{10} dust emissions in accordance with SMAQMD guidance, requirements, and/or rules that apply at

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

the time the project-level analysis is performed. It is likely that these measures would be the same or similar to those listed as Enhanced Fugitive PM Dust Control Practices for Soil Disturbance Areas and Unpaved Roads and Enhanced Exhaust Control Practices included in Mitigation Measure 3A.2-1a. Dispersion modeling is not required for the two El Dorado County roadway connections because the total amount of disturbed acreage is expected to be less than the EDCAQMD screening level of 12 acres.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., Sacramento County or Caltrans).

Implementation: All detailed, project-level analysis shall be performed by the responsible lead agency or its selected consultant and funded by the project applicant(s). Implementation of the project-level modeling analysis and any necessary additional mitigation shall be fully funded by the project applicant(s) responsible for each off-site improvement.

Timing:
1. For all off-site improvements within unincorporated Sacramento County: Before the approval of the respective grading plans from the Sacramento County Planning and Community Development Department
2. For the U.S. 50 interchange improvements: Before the approval of construction plans from Caltrans.

Enforcement:
1. For all off-site improvements within Sacramento County: Sacramento County Planning and Community Development Department.
2. For the U.S. 50 interchange improvements: Caltrans.

Significance after Mitigation for NO_x emissions: less than significant

Significance after Mitigation for PM_{10} concentrations: significant and unavoidable

3A.2-2: Generation of Long-Term Operational (Regional) Emissions of ROG, and NO_X. Operational area- and mobile-source emissions from project implementation would exceed the SMAQMD-recommended threshold of 65 lb/day for ROG and NO_X, and would result in or substantially contribute to emissions concentrations that exceed the NAAQS or CAAQS for ozone. In addition, because of the large increase in emissions associated with project build out and the fact that the project is not within an already approved plan (which means that increased emissions would not already be accounted for in applicable air quality plans), project implementation could conflict with air quality planning efforts in the SVAB.

Land

ON-SITE
NP: direct LTS, no indirect
NCP, PP, RIM, RHD, CD: direct significant, no indirect
OFF-SITE
Direct LTS, no indirect

ON-SITE

NP: No mitigation measures required.

NCP: Mitigation Measure 3A.2-2: Implement All Measures Prescribed by the Air Quality Mitigation Plan to Reduce Operational Air Pollutant Emissions. To reduce operational emissions, the project applicant(s) for all project phases shall implement all measures prescribed in the SMAQMD-approved *Folsom Plan Area Specific Plan Air Quality Mitigation Plan* (AQMP) (Torrence Planning 2008), a copy of which is included in Appendix

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
C2. The AQMP is intended to improve mobility, reduce vehicle miles traveled, and improve air quality as required by AB 32 and SB 375. The AQMP includes, among others, measures designed to provide bicycle parking at commercial land uses, an integrated pedestrian/bicycle path network, transit stops with shelters, a prohibition against the use the wood-burning fireplaces, energy star roofing materials, electric lawnmowers provided to homeowners at no charge, and on-site transportation alternatives to passenger vehicles (including light rail) that provide connectivity with other local and regional alternative transportation networks. Implementation: The project applicant(s) of all project phases. Timing: Before issuance of subdivision maps or improvement plans. Enforcement: City of Folsom Community Development Department. **PP, RIM, RHD, CD:** Implement Mitigation Measure 3A.2-2. **OFF-SITE** No mitigation measures required. ***Significance after Mitigation: significant and unavoidable***		
3A.2-3: Generation of Local Mobile-Source CO Emissions. Project-generated local mobile-source CO emissions would not result in or substantially contribute to concentrations that exceed the 1-hour ambient air quality standard of 20 ppm or the 8-hour standard of 9 ppm. **ON-SITE** **NP:** No mitigation measures required. **NCP, PP, RIM, CD, RHD:** No mitigation measures required. **OFF-SITE** No mitigation measures required. ***Significance after Mitigation: less than significant***	Land	**ON-SITE** **NP:** direct LTS, no indirect **NCP, PP, RIM, CD, RHD:** direct LTS, no indirect **OFF-SITE** Direct LTS, no indirect

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.2-4: Exposure of Sensitive Receptors to Short- and Long-Term Emissions of Toxic Air Contaminants. Project implementation would result in exposure of receptors to short- and long-term emissions of TACs from on-site stationary and mobile sources and from off-site mobile sources.	Land	**ON-SITE** **NP:** no direct or indirect **NCP, PP, RIM, CD, RHD:** direct PS, no indirect (Temporary, Short-Term Emissions from Construction Equipment; Emissions from On-Site Operational Mobile Sources; Land Use Compatibility with Off-site Corporation Yard) Direct LTS, no indirect (Stationary-Source Emissions, TAC Exposure from Remediation Activity, Land Use Compatibility with U.S. 50) **OFF-SITE** Direct PS, no indirect (Temporary, Short-Term Emissions from Construction Equipment) Direct LTS, no indirect (Operational TAC Emissions)
ON-SITE **NP:** No mitigation measures required. **NCP, RIM: Mitigation Measure 3A.2-4a: Develop and Implement a Plan to Reduce Exposure of Sensitive Receptors to Construction-Generated Toxic Air Contaminant Emissions.** The project applicant(s) for all project phases shall develop a plan to reduce the exposure of sensitive receptors to TACs generated by project construction activity associated with buildout of the selected alternative. Each plan shall be developed by the project applicant(s) in consultation with SMAQMD. The plan shall be submitted to the City for review and approval before the approval of any grading plans. The plan may include such measures as scheduling activities when the residences are the least likely to be occupied, requiring equipment to be shut off when not in use, and prohibiting heavy trucks from idling. Applicable measures shall be included in all project plans and specifications for all project phases. The implementation and enforcement of all measures identified in each plan shall be funded by the project applicant(s) for the respective phase of development. Implementation: The project applicant(s) of all project phases. Timing: Before the approval of all grading plans by the City and throughout project construction, where applicable, for all project phases. Enforcement: City of Folsom Community Development Department. **Mitigation Measure 3A.2-4b: Implement Measures to Reduce Exposure of Sensitive Receptors to Operational Emissions of Toxic Air Contaminants.** The following measures shall be implemented to reduce exposure of sensitive receptors to Toxic Air Contaminants. ▸ Proposed commercial and industrial land uses that have the potential to emit TACs or host TAC-generating activity (e.g., loading docks) shall be located away from existing and proposed on-site sensitive receptors such that they do not expose sensitive receptors to TAC emissions that exceed an incremental increase of 10 in 1 million for the cancer risk and/or a noncarcinogenic Hazard Index of 1.0.		

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance

Mitigation

- The multi-family residences planned across from the off-site corporation yard near the southwest corner of the SPA shall be set back as far as possible from the boundary of the corporation yard and/or relocated to another area.
- Where necessary to reduce exposure of sensitive receptors to an incremental increase of 10 in 1 million for the cancer risk and/or a noncarcinogenic Hazard Index of 1.0, proposed commercial and industrial land uses that would host diesel trucks shall incorporate idle reduction strategies that reduce the main propulsion engine idling time through alternative technologies such as, IdleAire, electrification of truck parking, and alternative energy sources for TRUs, to allow diesel engines to be completely turned off.
- Signs shall be posted in at all loading docks and truck loading areas which indicate that diesel-powered delivery trucks must be shut off when not in use for longer than 5 minutes on the premises in order to reduce idling emissions. This measure is consistent with the ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling, which was approved by the California Office of Administrative Law in January 2005.
- Implement the following additional guidelines, which are recommended in ARB's *Land Use Handbook: A Community Health Perspective* (ARB 2005) and are considered to be advisory and not regulatory:
  - Sensitive receptors, such as residential units and daycare centers, shall not be located in the same building as dry-cleaning operations that use perchloroethylene. Dry-cleaning operations that use perchloroethylene shall not be located within 300 feet of any sensitive receptor. A setback of 500 feet shall be provided for operations with two or more machines.
  - Large gasoline stations (defined as facilities with a throughput of 3.6 million gallons per year or greater) and sensitive land uses shall not be sited within 300 feet of each other. Small gasoline-dispensing facilities (less than 3.6 million gallons of throughput per year) and sensitive land uses shall not be sited within 50 feet of each other.

Implementation: The project applicant(s) of all project phases.

Timing: Before the approval of all grading plans by the SMAQMD and throughout project construction, where applicable, for all project phases.

Enforcement: City of Folsom Community Development Department.

PP, CD, RHD: Implement Mitigation Measures 3A.24a-4b.

OFF-SITE

Mitigation Measure: Implement Mitigation Measures 3A.2-1a and 3A.2-1b for the off-site improvements in Sacramento County; and Mitigation Measure 3A.2-1f for the off-site improvements in El Dorado County. (Temporary, Short-Term Emissions from Construction Equipment)

Mitigation Measure: No mitigation measures are required. (Operational TAC Emissions)

Significance after Mitigation: significant and unavoidable

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CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

B (Beneficial) NI (No impact) LTS (Less than significant) PS (Potentially significant) S (Significant) SU (Significant and unavoidable)

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

3A.2-5: Exposure of Sensitive Receptors to Construction-Generated Emissions of Naturally Occurring Asbestos. Asbestos is a toxic air contaminant. Residents and other receptors located close to construction activity could be exposed to dust from asbestos rock and soils during earth disturbance activities.

Land

ON-SITE
NP: direct LTS, no indirect
NCP, PP, RIM, CD, RHD: direct PS, no indirect
OFF-SITE
Direct PS, no indirect

ON-SITE

NP: No mitigation measures required.

NCP, PP, RIM, RHD: Mitigation Measure 3A.2-5: Implement A Site Investigation to Determine the Presence of NOA and, if necessary, Prepare and Implement an Asbestos Dust Control Plan. A site investigation shall be performed to determine whether and where NOA is present in the soil and rock on the SPA. The site investigation shall include the collection of soil and rock samples by a qualified geologist. If the site investigation determines that NOA is present on the SPA then the project applicant shall prepare an Asbestos Dust Control Plan for approval by SMAQMD as required in Section 93105 of the California Health and Safety Code, "Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations." The Asbestos Dust Control Plan shall specify measures, such as periodic watering to reduce airborne dust and ceasing construction during high winds, that shall be taken to ensure that no visible dust crosses the property line. Measures in the Asbestos Dust Control Plan may include but shall not be limited to dust control measures required by Mitigation Measure 3A.2-1a. The project applicant shall submit the plan to the Folsom Community Development Department for review and SMAQMD for review and approval before construction of the first project phase. SMAQMD approval of the plan must be received before any asbestos-containing rock (serpentinite) can be disturbed. Upon approval of the Asbestos Dust Control Plan by SMAQMD, the applicant shall ensure that construction contractors implement the terms of the plan throughout the construction period.

Implementation: The project applicant(s) of all project phases.

Timing: Before the approval of all grading plans by the City and throughout project construction, where applicable, for all project phases.

Enforcement: City of Folsom Community Development Department.

CD: Implement Mitigation Measure 3A.2-5.

OFF-SITE

Mitigation Measure: Implement Mitigation Measure 3A.2-5. (However, for construction of the two roadway extensions into El Dorado County that occurs in El Dorado County, approval of the grading plans must be received from EDCAQMD.)

Significance after Mitigation: less than significant

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CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

B (Beneficial) NI (No impact) LTS (Less than significant) PS (Potentially significant) S (Significant) SU (Significant and unavoidable)

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

3A.2-6: Possible Exposure of Sensitive Receptors to Odorous Emissions. Temporary, short-term construction and long-term operation of the project could result in the frequent exposure of sensitive receptors to substantial objectionable odor emissions.

ON-SITE

NP: no direct or indirect

NCP, PP, RIM, CD, RHD: direct, significant (Short-Term Use of Construction Equipment for On-Site Land Uses and Off-site Elements, Land Use Compatibility with Off-site Corporation Yard, Land Use Compatibility with Off-site Agricultural Land Uses)
Direct PS, no indirect (Long-Term Operation of On-Site Land Uses)

OFF-SITE

Direct LTS, no indirect

ON-SITE

NP: No mitigation measures required.

NCP, PP, RIM, CD, RHD: Implement Mitigation Measure 3A.2-1a and Mitigation Measure 3A.2-1f to Control Exposure of Sensitive Receptors to Construction-Related Odorous Emissions.

Mitigation Measure 3A.2-6: Implement Measures to Control Exposure of Sensitive Receptors to Operational Odorous Emissions. The project applicant(s) for all project phases shall implement the following measures:

- The odor-producing potential of land uses shall be considered when the exact type of facility that would occupy areas zoned for commercial, industrial, or mixed-use land uses is determined. Facilities that have the potential to emit objectionable odors shall be located as far away as feasible from existing and proposed sensitive receptors.
- The multi-family residences planned across from the off-site corporation yard near the southwest corner of the SPA shall be set back as far as possible from the boundary of the corporation yard and/or relocated to another area. (This measure is also required by Mitigation Measure 3A.2-4b to limit exposure to TAC emissions.)
- Before the approval of building permits, odor control devices shall be identified to mitigate the exposure of receptors to objectionable odors if a potential odor-producing source is to occupy an area zoned for commercial, industrial, or mixed-use land uses. The identified odor control devices shall be installed before the issuance of certificates of occupancy for the potentially odor-producing use. The odor-producing potential of a source and control devices shall be determined in coordination with SMAQMD and based on the number of complaints associated with existing sources of the same nature.
- The deeds to all properties located within the plan area that are within one mile of an on- or off-site area zoned or used for agricultural use (including livestock grazing) shall be accompanied by a written disclosure from the transferor, in a form approved by the City of Folsom, advising any transferee of the potential adverse odor impacts from surrounding agricultural operations, which disclosure shall direct the transferee to contact the County of Sacramento concerning any such property within the County zoned for agricultural uses within one mile of the subject property being transferred.
- Truck loading docks and delivery areas shall be located as far away as feasible from existing and proposed sensitive receptors.

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CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
▸ Signs shall be posted at all loading docks and truck loading areas which indicate that diesel-powered delivery trucks must be shut off when not in use for longer than 5 minutes on the premises in order to reduce idling emissions. This measure is consistent with the ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling, which was approved by California's Office of Administrative Law in January 2005. (This measure is also required by Mitigation Measure 3A.2-4b to limit TAC emissions.) ▸ Proposed commercial and industrial land uses that have the potential to host diesel trucks shall incorporate idle reduction strategies that reduce the main propulsion engine idling time through alternative technologies such as, IdleAire, electrification of truck parking, and alternative energy sources for TRUs, to allow diesel engines to be completely turned off. (This measure is also required by Mitigation Measure 3A.2-4b to limit TAC emissions.) Implementation: The project applicant(s) of all project phases. Timing: Before the approval of building permits by the City and throughout project construction, where applicable, for all project phases. Enforcement: City of Folsom Community Development Department. **OFF-SITE** No mitigation measures required. ***Significance after Mitigation for Construction Diesel Odor: significant and unavoidable*** ***Significance after Mitigation for Potential On-site Sources: less than significant*** ***Significance after Mitigation for Corporation Yard: significant and unavoidable***		
3B.2 AIR QUALITY - WATER		
3B.2-1: Generation of Construction Emissions of NO_X and PM_{10}. Construction of the Off-site Water Facility Alternatives would produce construction-generated emissions of NO_X, an ozone precursor, and fugitive PM_{10} dust would exceed SMAQMD-recommended thresholds and would substantially contribute to emissions concentrations that exceed the NAAQS and CAAQS. Thus, project-generated, construction-related emissions of criteria air pollutants and precursors could violate or contribute substantially to an existing or projected air quality violation and/or expose sensitive receptors to substantial pollutant concentrations.	Water	**NCP, PA, 1, 1A, 3, 3A, 4, & 4A:** direct PS, no indirect (Temporary and Short-Term Construction Emissions) Direct & indirect LTS (Off-site Water Facilities Operations) **2, 2A, & 2B:** direct & indirect LTS
NCP, PA, 1, 1A, 3, 3A, 4, and 4A: Mitigation Measure 3B.2-1a: Construction NO_X Reduction Plan. Consistent with SMAQMD requirements, the City of Folsom shall provide a plan for demonstrating that the heavy-duty (> 50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20% NO_X reduction. Prior to construction, the City's contractor shall submit to the SMAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during any portion of the construction of the Off-site Water Facilities. The inventory shall include the horsepower rating, engine production year, and projected hours of use or fuel throughput for each piece of equipment. The inventory shall be updated and submitted monthly throughout the duration of the		

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs. At least 48 hours prior to the use of subject heavy-duty off-road equipment, the Off-site Water Facilities representative shall provide SMAQMD with the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman.

Implementation: City of Folsom Utilities Department

Timing: Prior to construction of the Off-site Water Facilities.

Enforcement:
1. For improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department, City of Folsom Community Development Department, and SMAQMD.
2. For improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department and SMAQMD.
3. For improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department and SMAQMD.

Mitigation Measure 3B.2-1b: Conduct Visible Emissions Testing and if Non-Compliance, Repair Equipment Immediately. Controlling visible emissions from off-road diesel powered equipment. The City shall ensure that emissions from all off-road diesel powered equipment used on the project site do not exceed 40% opacity for more than three minutes in any one hour. Any equipment found to exceed 40% opacity (or Ringelmann 2.0) shall be repaired immediately, and the City and SMAQMD shall be notified within 48 hours of identification of non-compliant equipment. A visual survey of all in-operation equipment shall be made at least monthly, and a quarterly summary of the visual survey results shall be submitted throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey.

Implementation: City of Folsom Utilities Department

Timing: During construction of all Off-site Water Facilities.

Enforcement:
1. For improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department, City of Folsom Community Development Department, and SMAQMD.
2. For improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department and SMAQMD.
3. For improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department and SMAQMD.

Mitigation Measure 3B.2-1c: Implement Fugitive Dust Control Measures and a Particulate Matter Monitoring Program during Construction. The City shall implement fugitive dust control measures and a particulate matter monitoring program during construction. The City shall ensure implementation of dust control measures and a particulate matter monitoring program during each phase of construction. Dust control measures may include, but are not limited to, the following:

- minimize on-site construction vehicle speeds on unpaved surfaces;

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Impact	Land/Water/GPA	Significance
Mitigation		
► post speed limits; ► suspend grading operations when wind is sufficient to generate visible dust clouds; ► pave, water, use gravel, cover, or spray a dust-control agent on all haul roads; ► Prohibit no open burning of vegetation during project construction; ► Chip or deliver vegetative material to waste-to-energy facilities; ► reestablish vegetation as soon as possible after construction and maintain vegetation consistent with the parameters established in Mitigation Measure 3B.2.1a; ► clean earthmoving construction equipment with water once daily and clean all haul trucks leaving the site; and ► water and keep moist all exposed earth surfaces, graded areas, storage piles, and haul roads at all times. Implementation: City of Folsom Utilities Department Timing: During construction of all Off-site Water Facilities. Enforcement: 1. For improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department, City of Folsom Community Development Department, and SMAQMD. 2. For improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department and SMAQMD. 3. For improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department and SMAQMD. **Alternatives 2, 2A, and 2B:** No mitigation measures required. ***Significance after Mitigation: significant and unavoidable***		
3B.2-2: Generation of Long-Term Operational (Regional) Emissions of ROG, and NO_X. Operational area- and mobile-source emissions from implementation of the Off-site Water Facility Alternatives would not exceed the SMAQMD-recommended threshold of 65 lb/day for ROG and NO_X. **NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, 4A:** No mitigation measures required. ***Significance after Mitigation: less than significant***	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** direct & indirect LTS

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Impact	Land/Water/GPA	Significance
Mitigation		
3B.2-3: Exposure of Sensitive Receptors to Short- and Long-Term Emissions of Toxic Air Contaminants. Implementation of the Off-site Water Facility Alternatives could expose sensitive receptors to short- and long-term emissions of TACs from on-site stationary sources.	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** direct & indirect LTS

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A: Mitigation Measure 3B.2-3a: Cite Pump Siting Buffers Away from Sensitive Receptors. New pumping stations including back-up diesel generators shall be located more than 200 feet away from sensitive receptors. Electrically-powered pumps shall be used to power new pumps, to the extent practicable.

Implementation: City of Folsom Utilities Department

Timing: Prior to the approval of grading plans and building permits for all off-site water pumping facilities.

Enforcement:
1. For improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department, City of Folsom Community Development Department and SMAQMD.
2. For improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department and SMAQMD.
3. For improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department and SMAQMD.

Mitigation Measure 3B.2-3b: Conduct Project-Level DPM Screening and Implement Measures to Reduce Annual DPM to Acceptable Concentrations.

Screening-level DPM assessments shall be conducted for diesel-powered pump operations proposed within 200 feet of residences or other sensitive receptors. These analyses should include exact distances between the receptors and operations, and include the actual DPM emissions for the engines proposed. If the analysis shows an annual average DPM concentration from project operations at residences within 200 feet of the DPM source to be greater than 0.024 $\mu g/m^3$, the engine location shall be moved to a location where the annual average DPM concentration from project emissions at the residences is less than 0.024 $\mu g/m^3$. The acceptable concentration of 0.024 $\mu g/m^3$ was determined using the current OEHHA cancer potency factor and methodology for diesel exhaust (OEHHA 2003). If diesel exhaust concentrations at the affected receptor would be below 0.024 $\mu g/m^3$, then the cancer health risk would be less than 9.9 cancers in a million population.

Implementation: City of Folsom Utilities Department

Timing: Prior to the approval of grading plans and building permits for all off-site water pumping facilities.

Enforcement:
1. For improvements that would be located within the City of Folsom: City of Folsom Community Development Department and SMAQMD.
2. For improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department and SMAQMD.
3. For improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department and

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Mitigation		
SMAQMD. ***Significance after Mitigation: less than significant***		
3B.2-3: Exposure of Sensitive Receptors to Short- and Long-Term Emissions of Toxic Air Contaminants. Implementation of the Off-site Water Facility Alternatives could expose sensitive receptors to short- and long-term emissions of TACs from on-site stationary sources. **NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, 4A:** No mitigation measures required. ***Significance after Mitigation: less than significant***	Water	**NCP, PA, 1, 1A, 3, 3A, 4, & 4A:** direct & indirect LTS **2, 2A, & 2B:** no direct & indirect
3A.3 BIOLOGICAL RESOURCES - LAND		
3A.3-1: Loss and Degradation of Waters of the U.S., including Wetlands, and Waters of the State. Project implementation would result in the placement of fill material into jurisdictional waters of the U.S., including wetlands subject to USACE jurisdiction under the Federal CWA. Wetlands and other waters of the U.S. that would be affected by project implementation include seeps, vernal pools, seasonal wetlands and seasonal wetland swales, seeps, drainage channels, ditches, and ponds. Waters of the state would also be filled with project implementation.	Land	**ON-SITE** **NP:** LTS **PP:** direct & indirect significant **RIM:** direct & indirect significant **CD:** direct & indirect significant **RHD:** direct & indirect significant **NF:** direct & indirect significant **OFF-SITE** Direct & indirect significant
ON-SITE **PP: Mitigation Measure 3A.3-1a: Secure Clean Water Act Section 404 Permit and Implement All Permit Conditions; Ensure No Net Loss of Functions and Values of Wetlands, Other Waters of the U.S., and Waters of the State.** Before the approval of grading and improvement plans and before any groundbreaking activity associated with each distinct project phase, the project applicant(s) of all project phases requiring fill of wetlands or other waters of the U.S. or waters of the state shall obtain all necessary permits under Sections 401 and 404 of the CWA or the state's Porter-Cologne Act for the respective phase. For each respective phase, all permits, regulatory approvals, and permit conditions for effects on wetland habitats shall be secured before implementation of any grading activities within 250 feet of waters of the U.S. or wetland habitats, including waters of the state, that potentially support Federally listed species. The project applicant(s) shall commit to replace, restore, or enhance on a "no net loss" basis (in accordance with USACE and the Central Valley RWQCB) the acreage of all wetlands and other waters of the U.S. that would be removed, lost, and/or degraded with implementation of project plans for that phase. Wetland habitat shall be restored, enhanced, and/or replaced at an acreage and location and by methods agreeable to USACE, the Central Valley RWQCB, and the City, as appropriate, depending on agency jurisdiction, and as determined during the Section 401 and Section 404		

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permitting processes.

As part of the Section 404 permitting process, a draft wetland mitigation and monitoring plan (MMP) shall be developed for the project on behalf of the project applicant(s). Before any ground-disturbing activities that would adversely affect wetlands and before engaging in mitigation activities associated with each phase of development, the project applicant(s) shall submit the draft wetland MMP to USACE, the Central Valley RWQCB, Sacramento County, El Dorado County, and the City for review and approval of those portions of the plan over which they have jurisdiction. The MMP would have to be finalized prior to issuance of a Section 404 permit. Once the final MMP is approved and implemented, mitigation monitoring shall continue for a minimum of 5 years from completion of mitigation, or human intervention (including recontouring and grading), or until the performance standards identified in the approved MMP have been met, whichever is longer.

As part of the MMP, the project applicant(s) shall prepare and submit plans for the creation of aquatic habitat in order to adequately offset and replace the aquatic functions and services that would be lost at the SPA, account for the temporal loss of habitat, and contain an adequate margin of safety to reflect anticipated success. Restoration of previously altered and degraded wetlands shall be a priority of the MMP for offsetting losses of aquatic functions on the SPA because it is typically easier to achieve functional success in restored wetlands than in those created from uplands. The MMP must demonstrate how the aquatic functions and values that would be lost through project implementation will be replaced.

The habitat MMP for jurisdictional wetland features shall be consistent with USACE's and EPA's April 10, 2008 Final Rule for Compensatory Mitigation for Losses of Aquatic Resources (33 CFR Parts 325 and 332 and 40 CFR Part 230). According to the Final Rule, mitigation banks should be given preference over other types of mitigation because a lot of the risk and uncertainty regarding mitigation success is alleviated by the fact that mitigation bank wetlands must be established and demonstrating functionality before credits can be sold. This also alleviates temporal losses of wetland function while compensatory wetlands are being established. Mitigation banks also tend to be on larger, more ecologically valuable parcels and are subjected to more rigorous scientific study and planning and implementation procedures than typical permittee-responsible mitigation sites (USACE and EPA, 2008). However, the Final Rule also establishes a preference for compensating losses of aquatic resources within the same watershed as the impact site. The SPA includes portions of the Alder Creek, Buffalo Creek, Coyote Creek, and Carson Creek Watersheds. The majority of the SPA is within the Alder Creek Watershed. Alder Creek and Buffalo Creek are part of the Lower American River Watershed. Carson Creek and Coyote Creek are part of the Cosumnes River Watershed. Mitigation credits may be available within the Cosumnes Watershed, but not within the American River Watershed and not within the sub-watersheds of the SPA. Therefore aquatic habitats may need to be restored or created on the SPA and adjacent off-site lands, within the affected watersheds, in order to successfully replace lost functions at the appropriate watershed scale where loss of function would occur. It is not likely feasible to provide compensatory mitigation for all aquatic resource impacts on site. Therefore, a combination of on-site and off-site permittee-responsible mitigation and mitigation banking would likely be necessary to achieve the no-net-loss standard.

The SPA is located within the service areas of several approved mitigation banks (e.g., Bryte Ranch, Clay Station, Fitzgerald Ranch, and Sunrise Douglas Preservation Bank). The applicants' biological consultant, ECORP, has identified availability of approximately 30 vernal pool credits and 225 seasonal wetland credits at mitigation banks whose service area appears to include the SPA. However, the availability of these credits has not been confirmed and availability is subject to change.

Compensatory mitigation for losses of stream and intermittent drainage channels shall be achieved through in-kind preservation, restoration, or enhancement, as specified in the Final Rule guidelines. The wetland MMP shall address how to mitigate impacts on vernal pool, seasonal swale, seasonal wetland, seep, marsh, pond, and intermittent and perennial stream habitat, and shall describe specific method(s) to be implemented to avoid and/or mitigate any off-site project-related

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impacts. The wetland compensation section of the habitat MMP shall include the following:

- Compensatory mitigation sites and criteria for selecting these mitigation sites. In General, compensatory mitigation sites should meet the following criteria, based on the Final Rule;
  - located within the same watershed as the wetland or other waters that would be lost;
  - located in the most likely position to successfully replace wetland functions lost on the impact site considering watershed-scale features such as aquatic habitat diversity, habitat connectivity, available water sources and hydrologic relationships, land use trends, ecological benefits, and compatibility with adjacent land uses
- A complete assessment of the existing biological resources in both the on-site preservation areas and off-site compensatory mitigation areas, including wetland functional assessment using the California Rapid Assessment Method (CRAM) (Collins et al. 2008), to establish baseline conditions;
- Specific creation and restoration plans for each mitigation site;
- In kind reference wetland habitats for comparison with compensatory wetland habitats (using performance and success criteria) to document success;
- Description of methodology used to select reference wetlands for comparison;
- Monitoring protocol, including schedule and annual report requirements, and the following elements:
  - ecological performance standards, based on the best available science, that can be assessed in a practicable manner (e.g., performance standards proposed by Barbour et al. 2007). Performance standards must be based on attributes that are objective and verifiable;
  - CRAM conducted annually for 5 years after construction or restoration of compensatory wetlands to determine whether these areas are acquiring wetland functions and to plot the performance trajectory of preserved, restored, or created wetlands over time. CRAM scores for compensatory wetlands shall also be compared against scores for reference wetlands assessed in the same year;
  - CRAM analysis conducted annually for 5 years after any construction adjacent to wetlands preserved on the SPA to determine whether these areas are retaining functions and values. CRAM scores for wetlands preserved on site shall also be compared against scores for reference wetlands assessed in the same year;
  - analysis of CRAM data, including assessment of potential stressors, to determine whether any remedial activities may be necessary;
  - corrective measures if performance standards are not met;
  - monitoring of plant communities as performance criteria (annual measure of success, during monitoring period) and success criteria (indicative of achievement of mitigation habitat requirement at end of monitoring period) for hydrologic function have become established and the creation site "matures" over time;
  - GIS analysis of compensatory wetlands to demonstrate actual acreage of functioning wetland habitat;
  - adaptive management measures to be applied if performance standards and acreage requirements are not being met;
  - responsible parties for monitoring and preparing reports; and

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- responsible parties for receiving and reviewing reports and for verifying success or prescribing implementation or corrective actions.

An operations and management plan (OMP) for all on- and off-site wetland preservation and mitigation areas shall be prepared and submitted to USACE and USFWS for review and approval prior to the issuance of any permits under Section 404 of the CWA. The plan shall include detailed information on the habitats present within the preservation and mitigation areas, the long-term management and monitoring of these habitats, legal protection for the preservation and mitigation areas (e.g., conservation easement, declaration of restrictions), and funding mechanism information (e.g., endowment).

USACE has determined that the project will require an individual permit. In its final stage and once approved by USACE, the MMP for the project is expected to detail proposed wetland restoration, enhancement, and/or replacement activities that would ensure no net loss of aquatic functions in the project vicinity. Approval and implementation of the wetland MMP shall aim to fully mitigate all unavoidable impacts on jurisdictional waters of the U.S., including jurisdictional wetlands. In addition to USACE approval, approval by the City, Sacramento County, El Dorado County, and the Central Valley RWQCB, as appropriate depending on agency jurisdiction, and as determined during the Section 401 and Section 404 permitting processes, will also be required. Approvals from Sacramento County and El Dorado County shall be required for impacts resulting from off-site project elements occurring in these counties, such as the off-site detention basin in Sacramento County and the roadway connections into El Dorado County. To satisfy the requirements of the City and the Central Valley RWQCB, mitigation of impacts on the nonjurisdictional wetlands beyond the jurisdiction of USACE shall be included in the same MMP. All mitigation requirements determined through this process shall be implemented before grading plans are approved. The MMP shall be submitted to USACE and approved prior to the issuance of any permits under Section 404 of the CWA.

Water quality certification pursuant to Section 401 of the CWA will be required before issuance of the record of decision and before issuance of a Section 404 permit. Before construction in any areas containing wetland features, the project applicant(s) shall obtain water quality certification for the project. Any measures required as part of the issuance of water quality certification shall be implemented.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., Caltrans, El Dorado and/or Sacramento Counties).

Implementation: Project applicant(s) of all project phases requiring fill of wetlands or other waters of the U.S. or waters of the state.

Timing: Before the approval of grading or improvement plans or any ground-disturbing activities for any project development phase containing wetland features or other waters of the U.S.. The MMP must be approved before any impact on wetlands can occur. Mitigation shall be implemented on an ongoing basis throughout and after construction, as required.

Enforcement:

1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For the two roadway connections in El Dorado Hills: El Dorado County Development Services Department.
3. For the detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.
4. For the U.S. 50 interchange improvements: Caltrans.
5. U.S. Army Corps of Engineers, Sacramento District; Central Valley Regional Water Quality Control Board as appropriate depending on agency jurisdiction, and as determined during the Section 401 and Section 404 permitting processes and in compliance with the City's

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Mitigation		

Grading Ordinance (Folsom Municipal Code 14.29), or appropriate county grading ordinance for off-site detention basin and roadway connections from Folsom Heights to El Dorado Hills.

PP: Mitigation Measure 3A.3-1b: Design Stormwater Drainage Plans and Erosion and Sediment Control Plans to Avoid and Minimize Erosion and Runoff to All Wetlands and Other Waters That Are to Remain on the SPA and Use Low Impact Development Features.

To minimize indirect effects on water quality and wetland hydrology, the project applicant(s) of all project phases shall include stormwater drainage plans and erosion and sediment control plans in their improvement plans and shall submit these plans to the City Public Works Department for review and approval. For off-site elements within Sacramento County or El Dorado County jurisdiction (e.g., off-site detention basin and off-site roadway connections to El Dorado Hills), plans shall be submitted to the appropriate county planning department. Before approval of these improvement plans, the project applicant(s) of all project phases shall obtain a NPDES MS4 Municipal Stormwater Permit and Grading Permit, comply with the City's Grading Ordinance and County drainage and stormwater quality standards, and commit to implementing all measures in their drainage plans and erosion and sediment control plans to avoid and minimize erosion and runoff into Alder Creek and all wetlands and other waters that would remain on-site. Detailed information about stormwater runoff standards and relevant City and County regulation is provided in Chapter 3A.9, "Hydrology and Water Quality."

The project applicant(s) of all project phases shall implement stormwater quality treatment controls consistent with the Stormwater Quality Design Manual for Sacramento and South Placer Regions (Sacramento Stormwater Quality Control Partnership 2007). Appropriate runoff controls such as berms, storm gates, off-stream detention basins, overflow collection areas, filtration systems, and sediment traps shall be implemented to control siltation and the potential discharge of pollutants. Development plans shall incorporate Low Impact Development (LID) features, such as pervious strips, permeable pavements, bioretention ponds, vegetated swales, disconnected rain gutter downspouts, and rain gardens, where appropriate. Use of LID features is recommended by the EPA to minimize impacts on water quality, hydrology, and stream geomorphology and is specified as a method for protecting water quality in the proposed specific plan. In addition, free spanning bridge systems shall be used for all roadway crossings over wetlands and other waters that are retained in the on-site open space. These bridge systems would maintain the natural and restored channels of creeks, including the associated wetlands, and would be designed with sufficient span width and depth to provide for wildlife movement along the creek corridors even during high-flow or flood events.

In addition to compliance with City ordinances, the project applicant(s) of all project phases shall obtain a General Construction Stormwater Permit from the Central Valley RWQCB, prepare a Stormwater Pollution Prevention Plan (SWPPP), and implement Best Management Practices (BMPs) to reduce water quality effects during construction. Detailed information about the SWPPP and BMPs are provided in Chapter 3A.9, "Hydrology and Water Quality."

Each project phase shall result in no net change to peak flows into Alder Creek and associated tributaries, or to Buffalo Creek, Carson Creek, and Coyote Creek. The project applicant(s) shall establish a baseline of conditions for drainage on-site. The baseline-flow conditions shall be established for 2-, 5-, 10-, and 20-year storm events. These baseline conditions shall be used to develop monitoring standards for the stormwater system on the SPA. The baseline conditions, monitoring standards, and a monitoring program shall be submitted to USACE and the City for their approval. Water quality and detention basins shall be designed and constructed to ensure that the performance standards, which are described in Chapter 3A.9, "Hydrology and Water Quality," are met and shall be designed as off-stream detention basins. Discharge sites into Alder Creek and associated tributaries, as well as tributaries to Carson Creek, Coyote Creek, and Buffalo Creek, shall be monitored to ensure that preproject conditions are being met. Corrective measures shall be implemented as necessary. The mitigation measures will be satisfied when the monitoring standards are met for 5 consecutive years without undertaking corrective measures to meet the performance standard.

The project applicant(s) shall design a land use plan that moves the proposed on-stream detention basin in the northeast corner of the SPA to a location that is off

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Mitigation		
stream. All water quality and detention basins constructed as part of the project shall be designed and built off stream. Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado County for the roadway connections, Sacramento County for the detention basin west of Prairie City Road, and Caltrans for the U.S. 50 interchange improvements). Implementation: Project applicant(s) of all project phases and on-site and off-site elements. Timing: Before approval of improvement and drainage plans, and on an ongoing basis throughout and after project construction, as required for all project phases. Enforcement: 1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Public Works Department. 2. For the two roadway connections in El Dorado Hills: El Dorado County Development Services Department. 3. For the detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department. 4. For the U.S. 50 interchange improvements: Caltrans. 5. U.S. Army Corps of Engineers, Sacramento District. 6. Central Valley Regional Water Quality Control Board. **RIM:** Implement Mitigation Measures 3A.3-1a and 3A.3-1b. **CD:** Implement Mitigation Measures 3A.3-1a and 3A.3-1b. **RHD:** Implement Mitigation Measures 3A.3-1a and 3A.3-1b. **NF:** Implement Mitigation Measures 3A.3-1a and 3A.3-1b. **OFF-SITE** **Mitigation Measure:** Implement Mitigation Measures 3A.3-1a and 3A.3-1b. ***Significance after Mitigation: significant and unavoidable***		
3A.3-2: Loss and Degradation of Habitat for Special-Status Wildlife Species and Potential Direct Take of Individuals. Project implementation would result in the loss and degradation of habitat for several special-status wildlife species. Take of several listed species, including vernal pool invertebrates, valley elderberry longhorn beetle, and Swainson's hawk, could also occur.	Land	**ON-SITE** **NP: LTS** **PP, RIM, CD, RHD:** (Wildlife Associated with Vernal Pools, Swainson's Hawk and Other Raptors, Valley Elderberry Longhorn Beetle) direct & indirect significant (Tricolored Blackbird) direct & potentially significant, indirect & LTS (Special-Status Bats) direct & potentially significant, no indirect

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		(Other Special-Status Species) direct & indirect LTS **NF:** (Wildlife Associated with Vernal Pools) no direct & indirect significant (Swainson's Hawk and Other Raptors, Valley Elderberry Longhorn Beetle, Special-Status Bats) direct and indirect significant (Tricolored Blackbird) direct potentially significant & indirect LTS (Other Special-Status Species) direct & indirect LTS **OFF-SITE** **PP, RIM, CD, RHD:** (Wildlife Associated with Vernal Pools, Valley Elderberry Longhorn Beetle) direct & indirect significant (Swainson's Hawk and Other Raptors) direct & indirect potentially significant (Tricolored Blackbird) direct & potentially significant, indirect & LTS (Special-Status Bats) no direct or indirect (Other Special-Status Species) direct & indirect LTS
ON-SITE **NP:** No mitigation measures required. **PP: Mitigation Measure: Implement Mitigation Measures 3A.3-1a and 3A.3-1b.** **Mitigation Measure 3A.3-2a: Secure Take Authorization for Federally Listed Vernal Pool Invertebrates and Implement All Permit Conditions.** No project construction shall proceed in areas supporting potential habitat for Federally listed vernal pool invertebrates, or within adequate buffer areas (250 feet or lesser distance deemed sufficiently protective by a qualified biologist with approval from USFWS), until a biological opinion (BO) has been issued by USFWS and the project applicant(s) of all project phases have abided by conditions in the BO (including conservation and minimization measures) intended to be completed before on-site construction. Conservation and minimization measures shall include preparation of supporting documentation describing methods to protect existing vernal pools during and after project construction, a detailed monitoring plan, and reporting requirements. As described under Mitigation Measure 3A.3-1a, an MMP shall be developed that describes details how loss of vernal pool and other wetland habitats shall be offset, including details on creation of habitat, account for the temporal loss of habitat, contain performance standards to ensure success, and outline remedial actions if performance standards are not met. The project applicant(s) of all project phases shall complete and implement a habitat MMP that will result in no net loss of acreage, function, and value of affected		

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Mitigation		

vernal pool habitat. The final habitat MMP shall be consistent with guidance provided in Programmatic Formal Endangered Species Act Consultation on Issuance of 404 Permits for Projects with Relatively Small Effects on Listed Vernal Pool Crustaceans within the Jurisdiction of the Sacramento Field Office, California (USFWS 1996) or shall provide an alternative approach that is acceptable to the City, USACE, and USFWS and accomplishes no net loss of habitat acreage, function, and value.

The project applicant(s) of all project phases shall ensure that there is sufficient upland habitat within the target areas for creation and restoration of vernal pools and vernal pool complexes to provide ecosystem health. The project applicant(s) of all project phases shall identify the extent of indirectly affected vernal pool and seasonal wetland habitat, either by identifying all such habitat within 250 feet of project construction activities or by providing an alternative technical evaluation. If a lesser distance is pursued, this distance shall be approved by USFWS. The project applicant(s) shall preserve acreage of vernal pool habitat for each wetted acre of any indirectly affected vernal pool habitat at a ratio approved by USFWS at the conclusion of the Section 7 consultation. This mitigation shall occur before the approval of any grading or improvement plans for any project phase that would allow work within 250 feet of such habitat, and before any ground-disturbing activity within 250 feet of the habitat. The project applicant(s) will not be required to complete this mitigation measure for direct or indirect impacts that have already been mitigated to the satisfaction of USFWS through another BO or mitigation plan (i.e., if impacts on specific habitat acreage are mitigated by one project phase or element, the project applicant(s) will not be required to mitigate for it again in another phase of the project).

A standard set of BMPs shall be applied to construction occurring in areas within 250 feet of off-site vernal pool habitat, or within any lesser distance deemed adequate by a qualified biologist (with approval from USFWS) to constitute a sufficient buffer from such habitat. Refer to Section 3A.9, "Hydrology and Water Quality - Land" for the details of BMPs to be implemented.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties, or Caltrans).

Implementation: Project applicant(s) of all project phases.

Timing: Before the approval of any grading or improvement plans, before any ground-disturbing activities within 250 feet of said habitat, and on an ongoing basis throughout construction as applicable for all project phases as required by the mitigation plan, BO, and/or BMPs.

Enforcement:
1. U.S. Army Corps of Engineers, Sacramento District; U.S. Fish and Wildlife Service.
2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
3. For the two roadway connections in El Dorado Hills: El Dorado County Development Services Department.
4. For the U.S. 50 interchange improvements: Caltrans.
4. For the detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.

Mitigation Measure 3A.3-2b: Avoid Direct Loss of Swainson's Hawk and Other Raptor Nests.
To mitigate impacts on Swainson's hawk and other raptors (including burrowing owl), the project applicant(s) of all project phases shall retain a qualified biologist to conduct preconstruction surveys and to identify active nests on and within 0.5 mile of the SPA and active burrows on the SPA. The surveys shall be conducted before the approval of grading and/or improvement plans (as applicable) and no less than 14 days and no more than 30 days before the beginning of construction

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CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

B (Beneficial) NI (No impact) LTS (Less than significant) PS (Potentially significant) S (Significant) SU (Significant and unavoidable)

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

for all project phases. To the extent feasible, guidelines provided in Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in the Central Valley (Swainson's Hawk Technical Advisory Committee 2000) shall be followed for surveys for Swainson's hawk. If no nests are found, no further mitigation is required.

If active nests are found, impacts on nesting Swainson's hawks and other raptors shall be avoided by establishing appropriate buffers around the nests. No project activity shall commence within the buffer area until the young have fledged, the nest is no longer active, or until a qualified biologist has determined in coordination with DFG that reducing the buffer would not result in nest abandonment. DFG guidelines recommend implementation of 0.25- or 0.5-mile-wide buffers, but the size of the buffer may be adjusted if a qualified biologist and the City, in consultation with DFG, determine that such an adjustment would not be likely to adversely affect the nest. Monitoring of the nest by a qualified biologist during and after construction activities will be required if the activity has potential to adversely affect the nest.

If active burrows are found, a mitigation plan shall be submitted to the City for review and approval before any ground-disturbing activities. The City shall consult with DFG. The mitigation plan may consist of installation of one-way doors on all burrows to allow owls to exit, but not reenter, and construction of artificial burrows within the project vicinity, as needed; however, burrow owl exclusions may only be used if a qualified biologist verifies that the burrow does not contain eggs or dependent young. If active burrows contain eggs and/or young, no construction shall occur within 50 feet of the burrow until young have fledged. Once it is confirmed that there are no owls inside burrows, these burrows may be collapsed.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties, or Caltrans).

Implementation: Project applicant(s) of all project phases.

Timing: Before the approval of grading and improvement plans, before any ground-disturbing activities, and during project construction as applicable for all project phases.

Enforcement:
1. California Department of Fish and Game.
2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
3. For the two roadway connections in El Dorado Hills: El Dorado County Development Services Department.
4. For the U.S. 50 interchange improvements: Caltrans.
5. For the detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.

Mitigation Measure 3A.3-2c: Prepare and Implement a Swainson's Hawk Mitigation Plan.
To mitigate for the loss of Swainson's hawk foraging habitat, the project applicant(s) of all project phases shall prepare and implement a Swainson's hawk mitigation plan including, but not limited to the requirements described below.

Before the approval of grading and improvement plans or before any ground-disturbing activities, whichever occurs first, the project applicant(s) shall preserve, to the satisfaction of the City or Sacramento County, as appropriate depending on agency jurisdiction, suitable Swainson's hawk foraging habitat to ensure 1:1 mitigation of habitat value for Swainson's hawk foraging habitat lost as a result of the project, as determined by the City, or Sacramento County, after consultation

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

with DFG and a qualified biologist.

The 1:1 habitat value shall be based on Swainson's hawk nesting distribution and an assessment of habitat quality, availability, and use within the City's planning area, or Sacramento County jurisdiction. The mitigation ratio shall be consistent with the 1994 DFG Swainson's Hawk Guidelines included in the Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (Buteo swainsoni) in the Central Valley of California. Such mitigation shall be accomplished through either the transfer of fee title or perpetual conservation easement. The mitigation land shall be located within the known foraging area and within Sacramento County. The City, or Sacramento County if outside City jurisdiction, after consultation with DFG, will determine the appropriateness of the mitigation land.

Before approval of such proposed mitigation, the City, or Sacramento County for the off-site detention basin, shall consult with DFG regarding the appropriateness of the mitigation. If mitigation is accomplished through conservation easement, then such an easement shall ensure the continued management of the land to maintain Swainson's hawk foraging values, including but not limited to ongoing agricultural uses and the maintenance of all existing water rights associated with the land. The conservation easement shall be recordable and shall prohibit any activity that substantially impairs or diminishes the land's capacity as suitable Swainson's hawk habitat.

The project applicant(s) shall transfer said Swainson's hawk mitigation land, through either conservation easement or fee title, to a third-party, nonprofit conservation organization (Conservation Operator), with the City and DFG named as third-party beneficiaries. The Conservation Operator shall be a qualified conservation easement land manager that manages land as its primary function. Additionally, the Conservation Operator shall be a tax-exempt nonprofit conservation organization that meets the criteria of Civil Code Section 815.3(a) and shall be selected or approved by the City or County, after consultation with DFG. The City, or County, after consultation with DFG and the Conservation Operator, shall approve the content and form of the conservation easement. The City, or County, DFG, and the Conservation Operator shall each have the power to enforce the terms of the conservation easement. The Conservation Operator shall monitor the easement in perpetuity to assure compliance with the terms of the easement.

The project applicant(s), after consultation with the City, or County of jurisdiction, DFG, and the Conservation Operator, shall establish an endowment or some other financial mechanism that is sufficient to fund in perpetuity the operation, maintenance, management, and enforcement of the conservation easement. If an endowment is used, either the endowment funds shall be submitted to the City for impacts on lands within the City's jurisdiction or Sacramento County for the off-site detention basin to be distributed to an appropriate third-party nonprofit conservation agency, or they shall be submitted directly to the third-party nonprofit conservation agency in exchange for an agreement to manage and maintain the lands in perpetuity. The Conservation Operator shall not sell, lease, or transfer any interest of any conservation easement or mitigation land it acquires without prior written approval of the City and DFG. Mitigation lands established or acquired for impacts incurred at the off-site detention basin shall require approval from Sacramento County prior to sale or transfer of mitigation lands or conservation easement.

If the Conservation Operator ceases to exist, the duty to hold, administer, manage, maintain, and enforce the interest shall be transferred to another entity acceptable to the City and DFG, or Sacramento County and DFG depending on jurisdiction of the affected habitat. The City Planning Department shall ensure that mitigation habitat established for impacts on habitat within the City's planning area is properly established and is functioning as habitat by conducting regular monitoring of the mitigation site(s) for the first 10 years after establishment of the easement. Sacramento County shall monitor habitat and ensure success for impacts on habitat at the off-site detention basin.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable

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Impact	Land/Water/GPA	Significance
Mitigation		

project phase with the affected oversight agency(ies) (i.e., Sacramento County and Caltrans).

Implementation: Project applicant(s) of all project phases.

Timing: Before the approval of grading, improvement, or construction plans and before any ground-disturbing activity in any project development phase that would affect Swainson's hawk foraging habitat.

Enforcement:
1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For the detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.
3. For the U.S. 50 interchange improvements: Caltrans.

Mitigation Measure 3A.3-2d: Obtain Incidental Take Permit for Impacts on Valley Elderberry Longhorn Beetle and Implement All Permit Conditions. Before each phase of the project, the project applicant(s) shall have a qualified biologist identify any elderberry shrubs within 100 feet of the project footprint and conduct a survey for valley elderberry longhorn beetle exit holes in stems greater than 1 inch in diameter. If no project activity, including grading or use of herbicides, would occur within 100 feet of an elderberry shrub, then no further mitigation shall be required for valley elderberry longhorn beetle in those areas.

If project activities would occur within 100 feet of any elderberry shrubs, consultation with USFWS under Section 7 will be required. No project construction shall proceed in areas potentially containing valley elderberry longhorn beetle until a BO has been issued by USFWS, and the project applicant(s) of all project phases have abided by all pertinent conditions in the BO relating to the proposed construction, including conservation and minimization measures, intended to be completed before on-site construction. Conservation and minimization measures are likely to include preparation of supporting documentation that describes methods for relocation of existing shrubs and maintaining existing shrubs and other vegetation in a conservation area.

Relocation of existing elderberry shrubs and planting of new elderberry seedlings shall be implemented on a no-net-loss basis. Compensatory mitigation for elderberry shrubs that would be removed from their current locations would be developed in consultation with USFWS during the Section 7 consultation process. Compensatory mitigation may include planting replacement elderberry seedlings or cuttings and associated native plants within the open space areas of the SPA, planting replacement elderberry seedlings or cuttings and associated native plants at a suitable off-site location, purchasing credits at an approved mitigation bank, or a combination thereof. Relocated and replacement shrubs and associated native plantings shall be placed in conservation areas providing a minimum of 1,800 square feet per transplanted shrub. These conservation areas shall be preserved in perpetuity as habitat for valley elderberry longhorn beetle. The number of elderberry shrubs that would be affected by implementing the project is expected to be low because there are currently a total of less than 10 shrubs known to be present on the SPA. Ratios for mitigation of valley elderberry longhorn beetle habitat will ultimately be determined through the ESA Section 7 consultation process with USFWS, but shall be a minimum of "no net loss." USFWS uses stem count data, presence or absence of exit holes, and whether the affected elderberry shrubs are located in riparian habitat to determine the number of elderberry seedlings or cuttings and associated riparian vegetation that would need to be planted as compensatory mitigation for affected elderberry longhorn beetle habitat. The final VELB mitigation plan, including transplanting procedures, long-term protection, management of the mitigation areas, and monitoring procedures shall be consistent with the Conservation Guidelines for the Valley Elderberry Longhorn Beetle (USFWS 1999).

The population of valley elderberry longhorn beetles, the general condition of the conservation area, and the condition of the elderberry and associated native plantings in the conservation area must be monitored over a period of either ten consecutive years or for seven years over a 15-year period. A minimum survival

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Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

rate of at least 60% of the elderberry plants and 60% of the associated native plants must be maintained throughout the monitoring period. Within one year of discovering that survival has dropped below 60%, the project applicant(s) shall replace failed plantings to bring survival above this level. Detailed information on monitoring success of relocated and planted shrubs and measures to compensate (should success criteria not be met) would be required in the BO.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries (i.e., U.S. 50 interchange improvements) must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., Caltrans).

Implementation: Project applicant(s) of all project phases.

Timing: Before the approval of any grading or improvement plans or any ground-disturbing activity within 100 feet of valley elderberry longhorn beetle habitat as applicable for all project phases, and on an ongoing basis as required by BO.

Enforcement:
1. U.S. Army Corps of Engineers, Sacramento District; U.S. Fish and Wildlife Service.
2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
3. For the U.S. 50 interchange improvements: Caltrans.

Mitigation Measure 3A.3-2e: Avoid and Minimize Impacts to Tricolored Blackbird Nesting Colonies.
To avoid and minimize impacts to tricolored blackbird, the project applicant(s) of all project phases shall conduct a preconstruction survey for any project activity that would occur during the tricolored blackbird's nesting season (March 1–August 31). The preconstruction survey shall be conducted by a qualified biologist before any activity occurring within 500 feet of suitable nesting habitat, including freshwater marsh and areas of riparian scrub vegetation. The survey shall be conducted within 14 days before project activity begins.

If no tricolored blackbird colony is present, no further mitigation is required. If a colony is found, the qualified biologist shall establish a buffer around the nesting colony. No project activity shall commence within the buffer area until a qualified biologist confirms that the colony is no longer active. The size of the buffer shall be determined in consultation with DFG. Buffer size is anticipated to range from 100 to 500 feet, depending on the nature of the project activity, the extent of existing disturbance in the area, and other relevant circumstances.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries (i.e., U.S. 50 interchange improvements) must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., Caltrans).

Implementation: Project applicant(s) of all project phases.

Timing: Before the approval of any ground-disturbing activity within 500 feet of suitable nesting habitat as applicable for all project phases.

Enforcement:
1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For the U.S. 50 interchange improvements: Caltrans.

Mitigation Measure 3A.3-2f: Avoid and Minimize Impacts to Special-Status Bat Roosts.
The project applicant of all project phases containing potential bat roosting habitat shall retain a qualified biologist to conduct surveys for roosting bats. Surveys shall be conducted in the fall to determine if the mine shaft is used as a hibernaculum and in spring and/or summer to determine if it is used as a maternity or day

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Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

roost. Surveys shall consist of evening emergence surveys to note the presence or absence of bats and could consist of visual surveys at the time of emergence. If evidence of bat use is observed, the number and species of bats using the roost shall be determined. Bat detectors may be used to supplement survey efforts. If no bat roosts are found, then no further study shall be required.

If roosts of pallid bat or Townsend's big-eared bats are determined to be present and must be removed, the bats shall be excluded from the roosting site before the mine shaft is removed. A mitigation program addressing compensation, exclusion methods, and roost removal procedures shall be developed in consultation with DFG before implementation. Exclusion methods may include use of one-way doors at roost entrances (bats may leave but not reenter), or sealing roost entrances when the site can be confirmed to contain no bats. Exclusion efforts may be restricted during periods of sensitive activity (e.g., during hibernation or while females in maternity colonies are nursing young). The loss of each roost (if any) will be replaced in consultation with DFG and may include construction and installation of bat boxes suitable to the bat species and colony size excluded from the original roosting site. Roost replacement will be implemented before bats are excluded from the original roost sites. Once the replacement roosts are constructed and it is confirmed that bats are not present in the original roost site, the mine shaft may be removed.

Implementation: Project applicant(s) of all project phases containing potential bat roosting habitat.

Timing: Before the approval of removal or fill of the mine shaft on the SPA.

Enforcement: City of Folsom Community Development Department.

RIM, CD, RHD: Implement Mitigation Measures 3A.3-1a, 3A.3-1b, 3A.3-2a, 3A.3-2b, 3A.3-2c, 3A.3-2d, 3A.3-2e, and 3A.3-2f.

NF: Implement Mitigation Measures 3A.3-1a, 3A.3-1b, 3A.3-2a, 3A.3-2b, 3A.3-2c, 3A.3-2d, 3A.3-2e, and 3A.3-2f.

Mitigation Measure 3A.3-2g: Obtain an Incidental Take Permit under Section 10(a) of ESA; Develop and Implement a Habitat Conservation Plan to Compensate for the Loss of Vernal Pool Habitat. The project applicant(s) for all project phases shall obtain an incidental take permit under Section 10(a) of ESA. No project construction shall proceed in areas supporting potential habitat for Federally listed vernal pool invertebrates, or within adequate buffer areas (250 feet or lesser distance deemed sufficiently protective by a qualified biologist with approval from USFWS), until a BO has been issued by USFWS and the project applicant(s) have abided by conditions in the BO (including all conservation and minimization measures). Conservation and minimization measures are likely to include preparation of supporting documentation describing methods to protect existing vernal pools during and after project construction.

Under the No Federal Action Alternative, interagency consultation under Section 7 of ESA would not occur; therefore, the project applicant(s) would be required to develop a habitat conservation plan to mitigate impacts on Federally listed vernal pool invertebrates. The project applicant(s) shall complete and implement, or participate in, a habitat conservation plan that shall compensate for the loss of acreage, function, and value of affected vernal pool habitat. The habitat conservation plan shall be consistent with the goals of the Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon (USFWS 2005) and must be approved by USFWS.

The project applicant(s) for all project phases shall ensure that there is sufficient upland habitat within the target areas for creation and restoration of vernal pools and vernal pool complexes to provide ecosystem health. The land used to satisfy this mitigation measure shall be protected through a fee title or conservation easement acceptable to the City and USFWS.

The project applicant(s) for all project phases shall identify the extent of indirectly affected vernal pool and seasonal wetland habitat, either by identifying all such habitat within 250 feet of project construction activities or by providing an alternative technical evaluation in support of a lesser indirect impact distance. If a lesser

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Impact	Land/Water/GPA	Significance
Mitigation		

distance is pursued, this distance shall be approved by USFWS. The project applicant(s) shall preserve 2 wetted acres of vernal pool habitat for each wetted acre of any indirectly affected vernal pool habitat. This mitigation shall occur before the approval of any grading or improvement plans for any project phase that would allow work within 250 feet of such habitat, and before any ground-disturbing activity within 250 feet of the habitat. The project applicant(s) will not be required to complete this mitigation measure for direct or indirect impacts that have already been mitigated to the satisfaction of USFWS through another BO or mitigation plan.

A standard set of BMPs shall be applied to construction occurring in areas within 250 feet of off-site vernal pool habitat, or within any lesser distance deemed adequate by a qualified biologist (with approval from USFWS) to constitute a sufficient buffer from such habitat. Refer to Section 3A.9, "Hydrology and Water Quality - Land" for the details of BMPs to be implemented.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties or Caltrans).

Implementation: Project applicant(s) of all project phases and on-site and off-site elements.

Timing: Before the approval of any grading or improvement plans, before any ground-disturbing activities within 250 feet of said habitat, and on an ongoing basis throughout construction as applicable for all project phases as required by the habitat conservation plan and/or BO.

Enforcement:
1. U.S. Fish and Wildlife Service.
2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
3. For the two roadway connections in El Dorado Hills: El Dorado County Development Services Department.
4. For the detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.
5. For the U.S. 50 interchange improvements: Caltrans.

Mitigation Measure 3A.3-2h Obtain an Incidental Take Permit under Section 10(a) of ESA; Develop and Implement a Habitat Conservation Plan to Compensate for the Loss of VELB Habitat. As long as valley elderberry longhorn beetle remains a species protected under ESA, the project applicant(s) of all project phases containing elderberry shrubs shall obtain an incidental take permit under Section 10(a) of ESA for valley elderberry longhorn beetle. No project construction shall proceed in areas potentially containing valley elderberry longhorn beetle until a BO has been issued by USFWS, and the project applicant(s) for all project phases have abided by all pertinent conditions in the BO relating to the proposed construction, including all conservation and minimization measures. Conservation and minimization measures are likely to include preparation of supporting documentation that describes methods for relocation of existing shrubs and maintaining existing shrubs and other vegetation in a conservation area.

Under the No Federal Action Alternative, interagency consultation under Section 7 of ESA would not occur; therefore, the project applicant(s) would be required to develop a habitat conservation plan to mitigate impacts on valley elderberry longhorn beetle. The project applicant(s) shall complete and implement a habitat conservation plan that will compensate for the loss of valley elderberry longhorn beetle. Relocation of existing elderberry shrubs and planting of new elderberry seedlings shall be implemented on a no-net-loss basis. Detailed information on monitoring success of relocated and planted shrubs and measures to compensate (should success criteria not be met) would also likely be required in the BO. Ratios for mitigation of valley elderberry longhorn beetle habitat will ultimately be

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Impact	Land/Water/GPA	Significance
Mitigation		

determined through the ESA Section 10(a) consultation process with USFWS, but shall be a minimum of "no net loss."

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries (i.e., U.S. 50 interchange improvements) must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., Caltrans).

Implementation: Project applicant(s) of all project phases potentially containing elderberry shrubs.

Timing: Before the approval of any grading or improvement plans or any ground-disturbing activity within 100 feet of valley elderberry longhorn beetle habitat as applicable for all project phases, and on an ongoing basis as required by the habitat conservation plan and/or BO.

Enforcement: 1. U.S. Fish and Wildlife Service

2. City of Folsom Community Development Department.

3. For the U.S. 50 interchange improvements: Caltrans.

OFF-SITE

NCP, PP, RIM, CD, RHD: Mitigation Measure: Implement Mitigation Measures 3A.3-1a and 3A.3-1b, 3A.3-2a, 3A.3-2b, 3A.3-2c, 3A.3-2d, 3A.3-2e, and 3A.3-2f.

Significance after Mitigation: significant and unavoidable

3A.3-3: Potential Loss or Degradation of Special-Status Plant Populations and Habitat. Project implementation could result in direct removal of special-status plants, if they are present, through loss of suitable habitat or degradation of suitable habitat due to site alteration.	Land	**NP:** LTS **NCP, PP, RIM, CD, RHD:** Direct & indirect potentially significant

NP: No mitigation measures required.

NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.3-3: Conduct Special-Status Plant Surveys; Implement Avoidance and Mitigation Measures or Compensatory Mitigation. To mitigate for the potential loss or degradation of special-status plant species and habitat, the project applicant(s) of all project phases shall adhere to the requirements described below.

- The project applicant(s) of all proposed project phases, including the proposed off-site elements, shall retain a qualified botanist to conduct protocol level preconstruction special-status plant surveys for all potentially occurring species. If no special-status plants are found during focused surveys, the botanist shall document the findings in a letter report to USFWS, DFG, the City of Folsom, Caltrans (for interchange improvements to U.S. 50), El Dorado County (for roadway connections in El Dorado County), and Sacramento County (for the off-site detention basin) and no further mitigation shall be required.
- If special-status plant populations are found, the project applicant(s) of affected project phases shall consult with DFG and USFWS, as appropriate depending on species status, to determine the appropriate mitigation measures for direct and indirect impacts on any special-status plant population that could occur as a result of project implementation. Mitigation measures may include preserving and enhancing existing populations, creation of off-site populations on project mitigation sites through seed collection or transplantation, and/or restoring or creating suitable habitat in sufficient quantities to achieve no net loss of occupied habitat or individuals.

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Impact	Land/Water/GPA	Significance

Mitigation

- If potential impacts on special-status plant species are likely, a mitigation and monitoring plan shall be developed before the approval of grading plans or any ground-breaking activity within 250 feet of a special-status plant population. The mitigation plan shall be submitted to Caltrans (for interchange improvements to U.S. 50), El Dorado County (for impacts in roadway connections in El Dorado County), Sacramento County (for impacts in the off-site detention basin footprint), or the City of Folsom (for on-site impacts and all other off-site elements), for review and approval. It shall be submitted concurrently to DFG or USFWS, as appropriate depending on species status, for review and comment. The plan shall require maintaining viable plant populations on-site and shall identify avoidance measures for any existing population(s) to be retained and compensatory measures for any populations directly affected. Possible avoidance measures include fencing populations before construction and exclusion of project activities from the fenced-off areas, and construction monitoring by a qualified botanist to keep construction crews away from the population. The mitigation plan shall also include monitoring and reporting requirements for populations to be preserved on site or protected or enhanced off site.
- If relocation efforts are part of the mitigation plan, the plan shall include details on the methods to be used, including collection, storage, propagation, receptor site preparation, installation, long-term protection and management, monitoring and reporting requirements, and remedial action responsibilities should the initial effort fail to meet long-term monitoring requirements.
- If off-site mitigation includes dedication of conservation easements, purchase of mitigation credits or other off-site conservation measures, the details of these measures shall be included in the mitigation plan, including information on responsible parties for long-term management, conservation easement holders, long-term management requirements, and other details, as appropriate to target the preservation on long term viable populations.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., Caltrans, El Dorado and/or Sacramento Counties).

Implementation: Project applicant(s) of all project phases and on- and off-site elements.

Timing: Before approval of grading or improvement plans or any ground disturbing activities, including grubbing or clearing, for any project phase, including off-site elements.

Enforcement:
1. U.S. Fish and Wildlife Service, California Department of Fish and Game.
2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
3. For the two roadway connections in El Dorado Hills: El Dorado County Development Services Department.
4. For the detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.
5. For the U.S. 50 interchange improvements: Caltrans.

Significance after Mitigation: less than significant

NP (No Action/No Project) NCP (No USACE Permit) PP (Proposed Project) RIM (Resource Impact Minimization)
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B (Beneficial) NI (No impact) LTS (Less than significant) PS (Potentially significant) S (Significant) SU (Significant and unavoidable)

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.3-4: Loss of Sensitive Natural Communities (Not Already Covered under Other Impacts). Project implementation would result in loss of riparian habitat, and valley needlegrass grassland that may be present on the SPA and could be removed by project development. These are natural communities considered sensitive by state and local resource agencies and require consideration under CEQA.	Land	**NP:** LTS **NCP, PP, RIM, CD, RHD:** Direct & indirect significant (Valley Needlegrass: Direct potentially significant)
NP: No mitigation measures required. **NCP, PP, RIM, CD, RHD:** Implement Mitigation Measures 3A.3-1a and 1b. **Mitigation Measure 3A.3-4a: Secure and Implement Section 1602 Streambed Alteration Agreement.** The project applicant(s) of all project phases shall obtain a Section 1602 streambed alteration agreement from DFG for all construction activities that would occur in the bed and bank of Alder Creek and other drainage channels and ponds on the SPA. As a condition of issuance of the streambed alteration agreement, the project applicant(s) for all project phases affecting riparian habitat shall hire a qualified restoration ecologist to prepare a riparian habitat MMP. The draft MMP shall describe specific method(s) to be implemented to avoid and/or compensate for impacts on the stream channel of Alder Creek and other drainage channels within DFG jurisdiction, and the bed and banks of the on-site ponds. Mitigation measures may include establishment or restoration of riparian habitat within the project's open space areas along preserved stream corridors, riparian habitat restoration off-site, or preservation and enhancement of existing riparian habitat either on or off the SPA. The compensation habitat shall be similar in composition and structure to the habitat to be removed and shall be at ratios adequate to offset the loss of riparian habitat functions and services at the SPA. The riparian habitat compensation section of the habitat MMP shall include the following: ▸ compensatory mitigation sites and criteria for selecting these mitigation sites; ▸ complete assessment of the existing biological resources in both the on-site and off-site preservation and restoration areas; ▸ site-specific management procedures to benefit establishment and maintenance of native riparian plant species, including black willow, arroyo willow, white alder, and Fremont cottonwood; ▸ a planting and irrigation program if needed for establishment of native riparian trees and shrubs at strategic locations within each mitigation site (planting and irrigation may not be necessary if preservation of functioning riparian habitat is chosen as mitigation or if restoration can be accomplished without irrigation or planting); ▸ in kind reference habitats for comparison with compensatory riparian habitats (using performance and success criteria) to document success; ▸ monitoring protocol, including schedule and annual report requirements (compensatory riparian habitats shall be monitored for a minimum period of five years); ▸ ecological performance standards, based on the best available science and including specifications for native riparian plant densities, species composition, amount of dead woody vegetation gaps and bare ground, and survivorship; at a minimum, compensatory mitigation planting sites must achieve 80% survival of planted riparian trees and shrubs by the end of the five-year maintenance and monitoring period or dead and dying trees shall be replaced and monitoring continued until 80% survivorship is achieved; ▸ corrective measures if performance standards are not met;		

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

- responsible parties for monitoring and preparing reports; and
- responsible parties for receiving and reviewing reports and for verifying success or prescribing implementation or corrective actions.

Any conditions of issuance of the Streambed Alteration Agreement shall be implemented as part of project construction activities that adversely affect the bed and bank and riparian habitat associated with Alder Creek and other drainage channels and ponds that are within the project area that is subject to DFG jurisdiction. The agreement shall be executed by the project applicant(s) and DFG before the approval of any grading or improvement plans or any construction activities in any project phase that could potentially affect the bed and bank of Alder Creek and other on-site or off-site drainage channels under DFG jurisdiction and their associated freshwater marsh and riparian habitat.

Mitigation for the U.S. 50 interchange improvements must be coordinated by the project applicant(s) of each applicable project phase with the Caltrans.

Implementation: Project applicant(s) of all project phases and the off-site Prairie City Road and Oak Avenue interchange improvements.

Timing: Before the approval of grading or improvement plans or any construction activities (including clearing and grubbing) that affect the bed and bank or riparian and freshwater marsh habitat associated with Alder Creek and other on-site or off-site drainage channels and ponds.

Enforcement:
1. California Department of Fish and Game,
2. City of Folsom Community Development Department.
3. Caltrans for interchange improvements to U.S. 50.

Mitigation Measure 3A.3-4b: Conduct Surveys to Identify and Map Valley Needlegrass Grassland; Implement Avoidance and Minimization Measures or Compensatory Mitigation. The project applicant(s) of all project phases shall retain a qualified botanist to conduct preconstruction surveys to determine if valley needlegrass grassland is present on the SPA. This could be done concurrently with any special-status plant surveys conducted on site as special-status plant surveys are floristic in nature, i.e. require that all species encountered be identified, and require preparation of a plant community map. If valley needlegrass grassland is not found on the SPA, the botanist shall document the findings in a letter report to the City of Folsom, and no further mitigation shall be required. Valley needlegrass grassland was not found in any of the off-site project elements.

If valley needlegrass grassland is found on the SPA, the location and extent of the community shall be mapped and the acreage of this community type, if any, that would be removed by project implementation shall be calculated. The project applicant(s) for all project phases affecting valley needlegrass grassland shall consult with DFG and the City of Folsom to determine appropriate mitigation for removal of valley needlegrass grassland resulting from project implementation. Mitigation measures may include establishment of valley needlegrass grassland within project's open space areas currently characterized by annual grassland, establishment of valley needlgrass grassland off-site, or preservation and enhancement of existing valley needlegrass grassland either on or off the SPA.

Implementation: Project applicant(s) of all project phases.

Timing: Before approval of grading or improvement plans or any ground-disturbing activities, including grubbing or clearing, for any project phase.

Enforcement:
1. California Department of Fish and Game,
2. City of Folsom Community Development Department.

Significance after Mitigation: less than significant

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

3A.3-5: Loss of Blue Oak Woodland and Individual Oak Trees. Project implementation would result in the removal of 444 acres of blue oak woodland and thousands of individual oak trees meeting the criteria for protection under Folsom Municipal Code and the Sacramento County Tree Ordinance.

Land

ON-SITE
NP: LTS
PP, RHD: direct & indirect significant
RIM, CD, NF: direct & indirect significant
OFF-SITE
NCP, PP, RIM, CD, RHD: Direct & indirect significant

ON-SITE

NP: No mitigation measures required.

PP, RHD: Mitigation Measure 3A.3-5: Conduct Tree Survey, Prepare and Implement an Oak Woodland Mitigation Plan, Replace Native Oak Trees Removed, and Implement Measures to Avoid and Minimize Indirect Impacts on Oak Trees Retained On Site. The project applicant(s) of all on- and off-site project phases containing oak woodland habitat or individual trees shall adhere to the requirements described below, which are consistent with those outlined in California Public Resources Code 21083.4.

- The project applicant(s) of all on-site project phases containing oak woodland habitat or individual trees and the off-site Prairie City Road and Oak Avenue interchange improvements to U.S. 50; Rowberry Drive Overcrossing; and the underground sewer force main shall develop a map depicting the tree canopy of all oak woodlands in the survey area and identifying the acreage of tree canopy that would be preserved and the acreage that would be removed. If a tree survey containing this information has already been performed and documented for the construction area, a new tree survey shall not be necessary. A tree permit for removal of oak trees shall be obtained from the City Planning Director. As a condition of the tree removal permit, project applicant(s) shall be required to develop a tree mitigation and preservation plan. The City's Tree Preservation Code requires compensatory mitigation involving one or more of the following elements for removal of protected trees:
  - payment of in-lieu mitigation fees on an inch-for-diameter-inch basis, as determined by the City Council based on the Tree Preservation Code, for purchase, planting, and maintenance of replacement trees and mitigation sites;
  - land dedication for tree planting at a ratio of 0.004 acre of land for every 1 inch of tree dbh removed with a minimum dedication of 5 acres of land unless the dedicated land is contiguous with an existing or planned open space area; or
  - tree planting at ratios based on the dbh of trees removed as specified in the City's Tree Preservation Code (City of Folsom 2009). (For example, the City's established tree replacement ratios require that eight 15-gallon native oak trees be planted for every protected tree removed measuring 6 to 10 inches dbh and that 15 15-gallon native oak trees be planted for every protected tree removed measuring 10 to 15 inches dbh);
  - preservation of existing, sustainable oak stands comparable in dbh sizes and species composition to the protected trees removed.
- To avoid and minimize indirect impacts on protected trees to remain on the SPA, the project applicant(s) of all affected project phases shall install high visibility fencing outside the outer edge of the drip lines of all trees to be retained on the SPA during project construction. The fencing may be installed around groups or stands of trees or whole wooded areas bust must be installed so that the drip lines of all trees are protected. Grading, trenching, equipment or materials storage, parking, paving, irrigation, and landscaping shall be prohibited within the fenced areas (i.e. drip lines of protected trees). If the activities listed cannot be avoided within the drip line of a particular tree, that tree shall be counted as an affected tree and compensatory mitigation shall be provided, or

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

the tree in question shall be monitored for a period of five years and replaced only if the tree appears to be dead or dying within five years of project implementation.

- The project applicant(s) of project phases affecting oak woodland habitat shall retain a qualified restoration ecologist to develop an oak woodland mitigation plan to compensate for the loss of blue oak woodland habitat on the SPA. The plan shall incorporate tree mitigation and preservation measures satisfactory to compensate for the loss of individual trees protected under City Municipal Code, as discussed above, and to replace the acreage and function and values of the blue oak woodland habitat that would be lost on the SPA. The oak woodland mitigation plan shall be developed in consultation with the Sacramento County Planning Department, City of Folsom, and DFG. The plan shall be consistent with the California Oaks Foundation Oak Woodland Mitigation Program (California Oaks Foundation Undated PDF), which is based on a template developed by Tuolumne County, and shall include one or more of the following options, as required by California Public Resources Code 21083.4:
  - Conservation easement and land dedication – protect existing blue oak woodland habitat having similar tree sizes and densities, species composition, site condition, and landscape context to the blue oak woodland to be removed. Oak woodland preservation shall be at an off-site location protected through a conservation easement or fee title dedication to a conservation group approved by DFG and Sacramento County and shall be at a ratio satisfactory to compensate for the loss of acreage and habitat function and value at the SPA.
  - In-lieu fee – contribution to the California Wildlife Conservation Board's Oak Woodlands Conservation Fund, or other mitigation fund established by the County, at a rate of 1 x acreage of affected oak woodland x current land value at time of impact.
  - Planting replacement trees – tree planting and maintenance at an off-site location to be preserved through conservation easement or fee title dedication may be used to mitigate up to 50% of the blue oak woodland impact.
- Tree planting conducted by the project applicant(s) shall occur at a site within Sacramento County that should naturally support blue oak woodland and shall be used to restore former blue oak woodland habitat that has been degraded or removed through human activities. Restoration shall be designed to result in species composition and densities similar to those on the SPA prior to project development.
- The oak woodland mitigation plan prepared by the project applicant(s) shall include a maintenance and monitoring program for any replacement trees. The program shall include monitoring and reporting requirements, schedule, and success criteria. Replacement oak trees shall be maintained and monitored for a minimum of seven years from the date of planting and irrigation shall be provided to planted trees for the first five years after planting. Any replacement trees that die during the monitoring period shall be replaced. The mitigation planting site must achieve 80% survival of planted trees by the end of the seven year maintenance and monitoring period or dead and dying trees shall be replaced and monitoring continued until 80% survivorship is achieved. A security bond sufficient to cover maintenance and monitoring costs for seven years shall be provided to the County Planning Department. The security bond will be forfeited if the project applicant or designated responsible party fails to provide maintenance and monitoring and meet the success criteria.

The project applicants' currently proposed mitigation for impacts on oak trees within the backbone infrastructure components of the SPA and the Oak Avenue/U.S. 50 Interchange is to preserve oak tree canopy area at a ratio of 1.5 to 1 (acres of tree canopy preserved to acres of tree canopy preserved within the proposed open space areas of the SPA).

Mitigation for the U.S. 50 interchange improvements must be coordinated by the project applicant(s) of each applicable project phase with Clatrans.

Implementation: Project applicant(s) of all project phases and off-site elements affecting blue oak woodland and protected trees.

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
Timing: Before approval of grading or improvement plans or any ground disturbing activities, including grubbing or clearing, for any project phase containing protected trees or oak woodland. Enforcement: 1. California Department of Fish and Game, 2. City of Folsom Community Development Department. 3. Caltrans for interchange improvements to U.S. 50. **RIM, CD, NF:** Implement Mitigation Measure 3.33A.3-5. **OFF-SITE** **Mitigation Measure:** Implement Mitigation Measure 3A.3-5. ***Significance after Mitigation: significant and unavoidable***		
3A.3-6: Potential Interference with Wildlife Movement. Project implementation could interfere with the movement of native resident or migratory wildlife species or with established native resident or migratory wildlife corridors. **ON-SITE** **NP:** No mitigation measures required. **NCP, PP, RIM, CD, RHD:** No mitigation measures are required. **OFF-SITE** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Land	**ON-SITE** **NP:** no direct or indirect, LTS **NCP, PP, RIM, CD, RHD:** no direct or indirect, LTS **OFF-SITE** **NCP, PP, RIM, CD, RHD:** Direct & LTS, no indirect significant
3A.3-7: Conflict with an Adopted Habitat Conservation Plan. Project implementation would not result in conflicts with the goals of an adopted Habitat Conservation Plan. **NP, NCP, PP, RIM, CD, RHD:** No mitigation measures required. ***Significance after Mitigation: less than significant***	Land	**NP, NCP, PP, RIM, CD, RHD:** no direct or indirect

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Impact	Land/Water/GPA	Significance
Mitigation		
3B.3 BIOLOGICAL RESOURCES- WATER		
3B.3-1 Loss and Degradation of Waters of the U.S., including Wetlands, and Waters of the State. Construction of the Off-site Water Facility Alternatives has the potential to result in substantial adverse effects to Federally and state-protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to vernal pools and seasonal wetlands) through direct fill or excavation, hydrological interruption, or other indirect impacts. Wetlands, waters of the state, and other waters of the U.S. that would be affected by implementation of the Off-site Water Facility Alternatives include seeps, vernal pools, seasonal wetlands and seasonal wetland swales, drainage channels, ditches, and ponds.	Water	**NCP:** no direct & indirect PS **PA:** PS (Construction Effects w/in Zone 4), direct & indirect LTS (Operational Effects w/in Zones 1, 2, 3, & 4) **1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** direct & indirect PS
NCP: Implement Mitigation Measure 3B.3-1b and 3A.3-1a. **PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A: Mitigation Measure 3B.3-1a: Secure Clean Water Act Section 404 Permit and Implement All Permit Conditions; Ensure No Net Loss of Functions of Wetlands, Other Waters of the U.S., and Waters of the State.** Before the approval of grading and improvement plans and before any groundbreaking activity associated with the Off-site Water Facilities requiring fill of wetlands or other waters of the U.S. or waters of the state, the City shall obtain all necessary permits under Sections 401 and 404 of the CWA or the state's Porter-Cologne Water Quality Control Act for the respective phase. For each respective Off-site Water Facility component, all permits, regulatory approvals, and permit conditions for effects on wetland habitats shall be secured before implementation of any grading activities within 250 feet of waters of the U.S. or wetland habitats, including waters of the state, that potentially support Federally listed species. The City shall commit to replace, restore, or enhance on a "no net loss" basis (in accordance with USACE and the Central Valley RWQCB) the acreage of all wetlands and other waters of the U.S. that would be removed, lost, and/or degraded with implementation of project plans for that phase. Wetland habitat shall be restored, enhanced, and/or replaced at an acreage and location and by methods agreeable to USACE, the Central Valley RWQCB, and the City, as appropriate, depending on agency jurisdiction, and as determined during the Section 401 and Section 404 permitting processes. As part of the Section 404 permitting process, a draft wetland mitigation and monitoring plan (MMP) shall be developed for the selected Off-site Water Facility Alternative on behalf of the City. Before any ground-disturbing activities that would adversely affect wetlands and before engaging in mitigation activities associated with each phase of development, the City shall submit the draft wetland MMP to USACE and the Central Valley RWQCB for review and approval of those portions of the plan over which they have jurisdiction. The MMP would have to be approved prior to issuance of a Section 404 permit. Once the final MMP is approved and implemented, mitigation monitoring shall continue for a minimum of 5 years from completion of mitigation, or human intervention (including recontouring and grading), or until the performance standards identified in the approved MMP have been met, whichever is longer. As part of the MMP, the City shall prepare and submit plans for the creation of aquatic habitat in order to adequately offset and replace the aquatic functions and services that would be lost, account for the temporal loss of habitat, and contain an adequate margin of safety to reflect anticipated success. Restoration of previously altered and degraded wetlands shall be a priority of the MMP for offsetting losses of aquatic functions on the project site because it is typically easier to achieve functional success in restored wetlands than in those created from uplands. The MMP must demonstrate how the aquatic functions and values that would be lost through project implementation will be replaced.		

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Mitigation

The habitat MMP for jurisdictional wetland features shall be consistent with USACE's and EPA's April 10, 2008 Final Rule for Compensatory Mitigation for Losses of Aquatic Resources (33 CFR Parts 325 and 332 and 40 CFR Part 230). According to the Final Rule, mitigation banks should be given preference over other types of mitigation because a lot of the risk and uncertainty regarding mitigation success is alleviated by the fact that mitigation bank wetlands must be established and demonstrating functionality before credits can be sold. This also alleviates temporal losses of wetland function while compensatory wetlands are being established. Mitigation banks also tend to be on larger, more ecologically valuable parcels and are subjected to more rigorous scientific study and planning and implementation procedures than typical permittee-responsible mitigation sites (USACE and EPA 2008). It is not likely feasible to provide compensatory mitigation for all aquatic resource impacts on site. Therefore, a combination of on-site and off-site permittee-responsible mitigation and mitigation banking would likely be necessary to achieve the no-net-loss standard.

Compensatory mitigation for losses of stream and intermittent drainage channels shall be achieved through in-kind preservation, restoration, or enhancement, as specified in the Final Rule guidelines. The wetland MMP shall address how to mitigate impacts on all aquatic resource types and shall describe specific method(s) to be implemented to avoid and/or mitigate any Off-site Water Facility-related impacts. The wetland compensation section of the habitat MMP shall include all the contents identified in Mitigation Measure 3A.3-1A.

USACE has determined that the Off-site Water Facilities may require an individual permit. In its final stage and once approved by USACE, the MMP for the Off-site Water Facilities is expected to detail proposed wetland restoration, enhancement, and/or replacement activities that would ensure no net loss of aquatic functions in the project vicinity. Approval and implementation of the wetland MMP shall aim to fully mitigate all unavoidable impacts on jurisdictional waters of the U.S., including jurisdictional wetlands. To satisfy the requirements of the City and the Central Valley RWQCB, mitigation of impacts on the non-jurisdictional wetlands beyond the jurisdiction of USACE shall be included in the same MMP. All mitigation requirements determined through this process shall be implemented before grading plans are approved. The MMP shall be submitted to USACE and approved prior to the issuance of any permits under Section 404 of the CWA.

Water quality certification pursuant to Section 401 of the CWA will be required before issuance of the Section 404 permit. Before construction in any areas containing wetland features, the City shall obtain water quality certification for the Off-site Water Facilities. Any measures required as part of the issuance of water quality certification shall be implemented.

Implementation: City of Folsom Utilities Department

Timing: Before the approval of grading or improvement plans or any ground-disturbing activities for all the Off-site Water Facilities containing wetland features or other waters of the U.S. The MMP must be approved before any impact on wetlands can occur. Mitigation shall be implemented on an ongoing basis throughout and after construction, as required.

Enforcement: 1. U.S. Army Corps of Engineers, Regional Water Quality Control Board, California Department of Fish and Game.

Mitigation Measure 3B.3-1b: Maximum Use of Trenchless Technology for Conveyance Pipeline Design. Following the selection of a Off-site Water Facility Alternative, the City shall design and route the water conveyance pipeline to avoid waters of the U.S and State, including wetlands and vernal pools, to the maximize extent practical. Where avoidance is not practical, the City shall maximize the use of trenchless technologies (micro-tunneling or jack-and-bore), where feasible.

All trenchless construction crossings will include the preparation of a Frac-Out (or inadvertent return of drilling lubricants) Contingency Plan for tunneling activities that use drilling lubricants (e.g., construction of pipelines using jack-and-bore methods). The purpose of the plan will be to minimize the potential for a

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Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

frac-out associated with tunneling activities, provide for the timely detection of frac-outs, and ensure an organized, timely, and "minimum-impact" response in the event of a frac-out and release of drilling lubricant (i.e., bentonite). Preparation and implementation of a Frac-Out Contingency Plan will be reflected in contract documents.

Implementation: City of Folsom Utilities Department

Timing: Prior to and during construction of all Off-Site Water Facilities

Enforcement: 1. U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Regional Water Quality Control Board, California Department of Fish and Game.

Mitigation Measure 3B.3-1c: Restore All Waters Impacted by Trenching and Temporary Construction Staging Areas to Pre-Project Contours and Conditions. For all water line crossings of waters of the U.S. or State in which the use of trenchless technologies are not feasible, the City shall ensure that all waters impacted by trenching activities are restored to pre-project contours and conditions. In addition, within 30 days following project construction, the City shall ensure that all temporary construction staging areas within waters of the U.S. or State are restored to pre-project contours and conditions.

At minimum, the City shall ensure that the following measures are implemented during construction:

- Conduct trenching and construction activities across drainages during low-flow (e.g., <1 to 2 cfs) or dry periods as feasible;
- If working in active channels, install cofferdam upstream and downstream of stream crossing to separate construction area from flowing waterway;
- Place sediment curtains upstream and downstream of the construction zone to prevent sediment disturbed during trenching activities from being transported and deposited outside of the construction zone;
- Locate spoil sites such that they do not drain directly into the drainages or seasonal wetlands;
- Store equipment and materials away from the drainages and wetland areas. No debris will be deposited within 250 feet of the drainages and wetland areas;
- Prepare and implement a revegetation plan to restore vegetation in all temporarily disturbed wetlands and other waters using native species seed mixes and container plant material that are appropriate for existing hydrological conditions.

Before the approval of grading and improvement plans and before any groundbreaking activity associated with the Off-site Water Facilities requiring fill of wetlands or other waters of the U.S. or waters of the state, the City shall submit a wetland mitigation and monitoring plan (MMP) for the restoration of these waters within the selected water alignment to the USACE and Central Valley RWQCB for review and approval of those portions of the plan over which they have jurisdiction. The MMP would have to be approved prior to issuance of a Section 404 permit. Once the final MMP is approved and implemented, mitigation monitoring shall continue for a minimum of 5 years from completion of restoration activities, or human intervention (including recontouring and grading), or until the performance standards identified in the approved MMP have been met, whichever is longer.

At minimum, the MMP shall provide the following information:

- A description and drawings showing the existing contours (elevation) and existing vegetation of the waters of the U.S. and State that would be impacted through trenching activities. This information shall include site photographs taken at each impacted water.
- Methods used to ensure that trenching within waters of the U.S. and State do not adversely alter existing hydrology, including the draining of the waters (e.g.,

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Impact	Land/Water/GPA	Significance
Mitigation		

use of cut-off walls).

- The methods used to restore the site to the original contour and condition, as well as a plan for the revegetation of the site following installation of the water line.
- Proposed schedule for restoration activities

Implementation: City of Folsom Utilities Department

Timing: Before the approval of grading or improvement plans or any ground-disturbing activities for all the Off-site Water Facilities containing wetland features or other waters of the U.S.

Enforcement:
1. U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Regional Water Quality Control Board, California Department of Fish and Game.
2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
3. For improvements within Sacramento County or City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.

Mitigation Measure: Implement Mitigation Measure 3A.3-1a.

Implementation: City of Folsom Utilities Department

Timing: Prior to and during construction of all Off-Site Water Facilities

Enforcement:
1. U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Regional Water Quality Control Board, California Department of Fish and Game.
2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
3. For improvements within Sacramento County or City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.

Significance after Mitigation: less than significant

3B.3-2: Loss and Degradation of Habitat for Special-Status Wildlife Species and Potential Direct Take of Individuals. The Off-site Water Facility Alternatives have the potential to result in a substantial adverse effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special-status by DFG, NMFS, and USFWS. Impacts could include loss and degradation of habitat for several special-status wildlife species or take of listed species, including vernal pool invertebrates, valley elderberry longhorn beetle, and Swainson's hawk.	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A:** direct & indirect PS (*Western Spadefoot Toad & Northwestern Pond Turtle, Swainson's Hawk and Other Raptors, Special-status Bats*), significant direct & indirect (*Vernal Pool Fairy Shrimp & Vernal Pool Tadpole, Valley Elderberry Longhorn Beetle*), direct & indirect LTS (O*ther Special-status Species, Operational Effects*)

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A: Mitigation Measure 3B.3-2: Conduct Preconstruction Survey for Western Spadefoot Toad and Northwestern Pond Turtle and if Found, Implement Avoidance and Compensation Measures. Prior to construction, a qualified biologist retained by the City shall conduct protocol-level surveys for the western spadefoot toad and northwestern pond turtle to determine if these species are currently using water features crossed by the selected alignment. If either of these species is detected, then the City shall consult with the DFG (and USFWS if appropriate) to develop additional minimization measures prior to project construction (if necessary). These additional measures may include timing restrictions for groundwater dewatering activities, construction monitoring, and long-term monitoring.

If temporary fencing is used, it shall take the form of silt fencing and temporary plastic construction fencing placed no closer than 25 feet from the edge of the protected habitat. Protective fencing around vernal pools identified as potential habitat for special-status species shall be constructed in a way that allows western spadefoot toad to access these wetlands.

Impacted western spadefoot toad habitat shall be mitigated and compensated in accordance with USFWS and DFG requirements.

Implementation: City of Folsom Utilities Department

Timing: Prior to and during construction of all Off-site Water Facilities

Enforcement:
1. U.S. Fish and Wildlife Service, California Department of Fish and Game.
2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
3. For improvements within Sacramento County or City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.

Mitigation Measure: Implement Mitigation Measures 3B.3-1a, 3B.3-1b, 3A.3-1b, 3A.3-2a, 3A.3-2b, 3A.3-2c, 3A.3-2d, 3A.3-2e, 3A.3-2f, 3A.3-2g, and 3A.3-2h.

Implementation: City of Folsom Utilities Department

Timing: Prior to and during construction of all Off-site Water Facilities

Enforcement:
1. U.S. Fish and Wildlife Service, California Department of Fish and Game.
2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
3. For improvements within Sacramento County or City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.

Significance after Mitigation: less than significant

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3B.3-3: Potential Loss or Degradation of Special-Status Plant Populations and Habitat. Implementation of the Off-site Water Facility Alternatives could result in direct removal of special-status plants, if they are present, through loss of suitable habitat or degradation of suitable habitat due to site alteration.	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A:** direct & indirect PS
NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A: Implement Mitigation Measure 3A.3-3: Conduct Special-Status Plant Surveys; Implement Avoidance and Mitigation Measures or Compensatory Mitigation. Implementation: City of Folsom Utilities Department Timing: Prior to and during construction of all Off-site Water Facilities Enforcement: 1. U.S. Fish and Wildlife Service and California Department of Fish and Game. 2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 3. For improvements within Sacramento County or City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department. ***Significance after Mitigation: less than significant***		
3B.3-4: Loss of Sensitive Natural Communities (Not Already Covered under Other Impacts). Construction and operation of the Off-site Water Facility Alternatives has the potential to have a substantial adverse effect on local riparian and woodland habitats. These are natural communities considered sensitive by state and local resource agencies and require consideration under CEQA.	Water	**NCP, PA, 1, 1A, 2, 2A, 3, 3A, 4, & 4A:** direct & indirect PS (construction), **NCP, PA, 1, 1A, 2, 2A, 3, 3A, 4, & 4A:** direct & indirect LTS (sensitive communities from long-term operation of the Off-site Water Facilities) **2B:** direct & indirect LTS
NCP, PA, 1, 1A, 2, 2A, 3, 3A, 4, & 4A: Implement Mitigation Measures 3B.3-1a, 3B.3-1b, 3A.3-1b, and 3A.3-4a. Implementation: City of Folsom Utilities Department Timing: Prior to and during construction of all Off-site Water Facilities Enforcement: 1. California Department of Fish and Game and Regional Water Quality Control Board. **2B:** No mitigation measures are required. ***Significance after Mitigation: less than significant***		

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3B.3-5: Loss of Individual Oak Trees. Implementation of the Off-site Water Facility Alternatives could result in the removal of oak woodland and individual oak trees meeting the criteria for protection under Folsom Municipal Code and the Sacramento County Tree Ordinance.	Water	**NCP, PA, 1, 1A, 2, 2A, 3, 3A, 4, & 4A:** direct & indirect PS **2B:** direct & indirect LTS
NCP, PA, 1, 1A, 2, 2A, 3, 3A, 4, & 4A: Implement Mitigation Measure 3A.3-5: Conduct Tree Survey, Prepare and Implement an Oak Woodland Mitigation Plan, Replace Native Oak Trees Removed, and Implement Measures to Avoid and Minimize Indirect Impacts on Oak Trees Retained On-site. Implementation: City of Folsom Utilities Department Timing: Prior to and during construction of all Off-site Water Facilities Enforcement: 1. U.S. Fish and Wildlife Service, California Department of Fish and Game. 2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 3. For improvements within Sacramento County or City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department. **2B:** No mitigation measures are required. ***Significance after Mitigation: less than significant***		
3B.5-6: Potential Interference with Wildlife or Fisheries Movement. Construction and operation of the Off-site Water Facility Alternatives has the potential to interfere substantially with the movement of native resident or migratory fish or within established native resident or migratory wildlife corridors. **NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, 4A:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A:** direct & indirect LTS
3B.5-7: Potential Conflict with Habitat Conservation Plans. Construction of the Off-site Water Facilities has the potential to conflict with the provisions of an adopted Habitat Conservation Plan or Natural Community Conservation Plan. **NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, 4A:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A:** no impacts

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.4 CLIMATE CHANGE – LAND		
3A.4-1: Generation of Temporary, Short-Term Construction-Related GHG Emissions. Project-related construction activities associated with development of the project and off-site elements would result in increased generation of GHG emissions. These emissions would be temporary and short-term and would decline over time as new regulations are developed that address medium- and heavy-duty on-road vehicles and off-road equipment under the mandate of AB 32.	Land	**ON- & OFF-SITE** **NP:** LTS **ON-SITE** **NCP, PP, RIM, CD, RHD:** significant cumulative **OFF-SITE** **NCP, PP, RIM, CD, RHD:** LTS (*Detention Basin and Sewer Force Main Connection*) Significant cumulative (*Prairie City Road Interchange, Rowberry Drive Overcrossing, Oak Avenue Interchange, and Roadway Extensions*)
ON-SITE **NP:** No mitigation measures required. **NCP, PP, RIM, CD, RHD:** Implement Mitigation Measures 3A.2-1a and 3A.2-1b. **Mitigation Measure 3A.4-1: Implement Additional Measures to Control Construction-Generated GHG Emissions.** To further reduce construction-generated GHG emissions, the project applicant(s) of all project phases shall implement all feasible measures for reducing GHG emissions associated with construction that are recommended by SMAQMD at the time individual portions of the site undergo construction. Such measures may reduce GHG exhaust emissions from the use of on-site equipment, worker commute trips, and truck trips carrying materials and equipment to and from the SPA, as well as GHG emissions embodied in the materials selected for construction (e.g., concrete). Other measures may pertain to the materials used in construction. Prior to releasing each request for bid to contractors for the construction of each development phase, the project applicant(s) shall obtain the most current list of GHG reduction measures that are recommended by SMAQMD and stipulate that these measures be implemented in the respective request for bid as well as the subsequent construction contract with the selected primary contractor. The project applicant(s) for any particular development phase may submit to SMAQMD a report that substantiates why specific measures are considered infeasible for construction of that particular development phase and/or at that point in time. The report, including the substantiation for not implementing particular GHG reduction measures, shall be approved by SMAQMD prior to the release of a request for bid by the project applicant(s) for seeking a primary contractor to manage the construction of each development phase. By requiring that the list of feasible measures be established prior to the selection of a primary contractor, this measure requires that the ability of a contractor to effectively implement the selected GHG reduction measures be inherent to the selection process. SMAQMD's recommended measures for reducing construction-related GHG emissions at the time of writing this EIR/EIS are listed below and the project applicant(s) shall, at a minimum, be required to implement the following: ▸ Improve fuel efficiency from construction equipment: • reduce unnecessary idling (modify work practices, install auxiliary power for driver comfort);		

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Mitigation		

- perform equipment maintenance (inspections, detect failures early, corrections);
- train equipment operators in proper use of equipment;
- use the proper size of equipment for the job; and
- use equipment with new technologies (repowered engines, electric drive trains).

▸ Use alternative fuels for electricity generators and welders at construction sites such as propane or solar, or use electrical power.

▸ Use an ARB-approved low-carbon fuel, such as biodiesel or renewable diesel for construction equipment. (Emissions of oxides of nitrogen [NO_X] emissions from the use of low carbon fuel must be reviewed and increases mitigated.) Additional information about low-carbon fuels is available from ARB's Low Carbon Fuel Standard Program (ARB 2009b).

▸ Encourage and provide carpools, shuttle vans, transit passes and/or secure bicycle parking for construction worker commutes.

▸ Reduce electricity use in the construction office by using compact fluorescent bulbs, powering off computers every day, and replacing heating and cooling units with more efficient ones.

▸ Recycle or salvage non-hazardous construction and demolition debris (goal of at least 75% by weight).

▸ Use locally sourced or recycled materials for construction materials (goal of at least 20% based on costs for building materials, and based on volume for roadway, parking lot, sidewalk and curb materials).

▸ Minimize the amount of concrete used for paved surfaces or use a low carbon concrete option.

▸ Produce concrete on-site if determined to be less emissive than transporting ready mix.

▸ Use EPA-certified SmartWay trucks for deliveries and equipment transport. Additional information about the SmartWay Transport Partnership Program is available from ARB's Heavy-Duty Vehicle Greenhouse Gas Measure (ARB 2009c) and EPA (EPA 2009).

▸ Develop a SMAQMD-approved plan to efficiently use water for adequate dust control. This may consist of the use of non-potable water from a local source.

In addition to SMAQMD-recommended measures, construction activity shall comply with all applicable rules and regulations established by SMAQMD and ARB.

Implementation: Project applicant(s) during all project phases and on-site and off-site elements.

Timing: Before approval of final maps and building permits for all project phases, including all on- and off-site elements and implementation throughout project construction.

Enforcement:
1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For all on- and off-site project-related activities within the City of Folsom and Sacramento County.
3. For the two roadway extensions into El Dorado Hills: El Dorado County Development Services Department.

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
OFF-SITE **Mitigation Measure:** No mitigation measures are required. (*Detention Basin and Sewer Force Main Connection*) **Mitigation Measure:** Implement Mitigation Measures 3A.2-1a, 3A.2-1b, and 3A.4-1. (*Prairie City Road Interchange, Rowberry Drive Overcrossing, Oak Avenue Interchange, and Roadway Extensions*) ***Significance after Mitigation: significant and unavoidable***		
3A.4-2: Generation of Long-Term Operational GHG Emissions. Operation of the project over the long term would result in increased generation of GHGs, which would contribute considerably to cumulative GHG emissions.	Land	**ON-SITE** **NP:** LTS **ON-SITE** **NCP, PP, RIM, CD, RHD:** significant cumulative **OFF-SITE** **NCP, PP, RIM, CD, RHD:** LTS
ON-SITE **NP:** No mitigation measures required. **NCP, PP, RIM, CD, RHD:** Implement Mitigation Measure 3A.2-2. **Mitigation Measure 3A.4-2a: Implement Additional Measures to Reduce Operational GHG Emissions.** For each increment of new development within the SPA requiring a discretionary approval (e.g., tentative subdivision map, conditional use permit, improvement plan), the City shall impose mitigation measures that reduce GHG emissions to the extent feasible and to the extent appropriate with respect to the state's progress at the time toward meeting GHG emissions reductions required by the California Global Warming Solutions Act of 2006 (AB 32). The City shall require feasible reduction measures that, in combination with existing and future regulatory measures developed under AB 32, will reduce GHG emissions associated with the operation of future project development phases and supporting roadway and infrastructure improvements that are part of the selected action alternative by an amount sufficient to achieve the 2020-based goal of 4.36 CO_2e/SP/year for development that would become operational on or before the year 2020 and the 2020-based goal of 3.68 CO_2e/SP/year for development that would become operational on or before the year 2030, if it is feasible to do so. The feasibility of potential GHG reduction measures shall be evaluated by the City at the time each phase of development is proposed in order to allow for ongoing innovations in GHG reduction technologies, as well as incentives created in the regulatory environment. For each increment of new development, the City shall submit to the project applicant(s) a list of potentially feasible GHG reduction measures to be considered in the development design. The City's list of potentially feasible GHG reduction measures shall reflect the current state of the regulatory environment, which will continuously evolve under the mandate of AB 32. The project applicant(s) shall then submit to the City a mitigation report that contains an analysis demonstrating which GHG reduction measures are feasible the associated reduction in GHG emissions, and the resulting CO2e/SP/year metric. The report shall also demonstrate why measures not selected are considered infeasible. The City must review and approve the mitigation report for the project applicant(s) to receive the City's discretionary approval for the applicable increment of development. In determining what measures should appropriately be imposed by a local government under the circumstances, the City shall consider the following factors:		

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Impact	Land/Water/GPA	Significance
Mitigation		

- the extent to which rates of GHG emissions generated by motor vehicles traveling to, from, and within the SPA are projected to decrease over time as a result of regulations, policies, and/or plans that have already been adopted or may be adopted in the future by ARB or other public agency pursuant to AB 32, or by EPA;
- the extent to which mobile-source GHG emissions, which at the time of writing this EIR/EIS comprise a substantial portion of the state's GHG inventory, can also be reduced through design measures that result in trip reductions and reductions in trip length;
- the extent to which GHG emissions emitted by the mix of power generation operated by SMUD, the electrical utility that will serve the SPA, are projected to decrease pursuant to the Renewables Portfolio Standard required by SB 1078 and SB 107, as well as any future regulations, policies, and/or plans adopted by the federal and state governments that reduce GHG emissions from power generation;
- the extent to which replacement of CCR Title 24 with the California Green Building Standards Code or other similar requirements will result in new buildings being more energy efficient and consequently more GHG efficient;
- the extent to which any stationary sources of GHG emissions that would be operated on a proposed land use (e.g., industrial) are already subject to regulations, policies, and/or plans that reduce GHG emissions, particularly any future regulations that will be developed as part of ARB's implementation of AB 32, or other pertinent regulations on stationary sources that have the indirect effect of reducing GHG emissions;
- the extent to which the feasibility of existing GHG reduction technologies may change in the future, and to which innovation in GHG reduction technologies will continue, effecting cost-benefit analyses that determine economic feasibility; and
- whether the total costs of proposed mitigation for GHG emissions, together with other mitigation measures required for the proposed development, are so great that a reasonably prudent property owner would not proceed with the project in the face of such costs.

In considering how much, and what kind of, mitigation is necessary in light of these factors, the City shall consider the following list of options, though the list is not intended to be exhaustive, as GHG emission reduction strategies and their respective feasibility are likely to evolve over time. These measures are derived from multiple sources including the Mitigation Measure Summary in Appendix B of the California Air Pollution Control Officer's Association (CAPCOA) white paper, CEQA & Climate Change (CAPCOA 2009a); CAPCOA's Model Policies for Greenhouse Gases in General Plans (CAPCOA 2009b); and the California Attorney General's Office publication, The California Environmental Quality Act: Addressing Global Warming Impacts at the Local Agency Level (California Attorney General's Office 2008).

Energy Efficiency

- Include clean alternative energy features to promote energy self-sufficiency (e.g., photovoltaic cells, solar thermal electricity systems, small wind turbines).
- Design buildings to meet CEC Tier II requirements (e.g., exceeding the requirements of the Title 24 [as of 2007] by 35%).
- Site buildings to take advantage of shade and prevailing winds and design landscaping and sun screens to reduce energy use.
- Install efficient lighting in all buildings (including residential). Also install lighting control systems, where practical. Use daylight as an integral part of lighting systems in all buildings.
- Install light-colored "cool" pavements, and strategically located shade trees along all bicycle and pedestrian routes.

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

Water Conservation and Efficiency

- With the exception of ornamental shade trees, use water-efficient landscapes with native, drought-resistant species in all public area and commercial landscaping. Use water-efficient turf in parks and other turf-dependant spaces.
- Install the infrastructure to use reclaimed water for landscape irrigation and/or washing cars.
- Install water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls.
- Design buildings and lots to be water-efficient. Only install water-efficient fixtures and appliances.
- Restrict watering methods (e.g., prohibit systems that apply water to nonvegetated surfaces) and control runoff. Prohibit businesses from using pressure washers for cleaning driveways, parking lots, sidewalks, and street surfaces. These restrictions should be included in the Covenants, Conditions, and Restrictions of the community.
- Provide education about water conservation and available programs and incentives.
- To reduce stormwater runoff, which typically bogs down wastewater treatment systems and increases their energy consumption, construct driveways to single-family detached residences and parking lots and driveways of multifamily residential uses with pervious surfaces. Possible designs include Hollywood drives (two concrete strips with vegetation or aggregate in between) and/or the use of porous concrete, porous asphalt, turf blocks, or pervious pavers.

Solid Waste Measures

- Reuse and recycle construction and demolition waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard).
- Provide interior and exterior storage areas for recyclables and green waste at all buildings.
- Provide adequate recycling containers in public areas, including parks, school grounds, golf courses, and pedestrian zones in areas of mixed-use development.
- Provide education and publicity about reducing waste and available recycling services.

Transportation and Motor Vehicles

- Promote ride-sharing programs and employment centers (e.g., by designating a certain percentage of parking spaces for ride-sharing vehicles, designating adequate passenger loading and unloading zones and waiting areas for ride-share vehicles, and providing a Web site or message board for coordinating ride-sharing).
- Provide the necessary facilities and infrastructure in all land use types to encourage the use of low- or zero-emission vehicles (e.g., electric vehicle charging facilities and conveniently located alternative fueling stations).
- At industrial and commercial land uses, all forklifts, "yard trucks," or vehicles that are predominately used on-site at non-residential land uses shall be electric-powered or powered by biofuels (such as biodiesel [B100]) that are produced from waste products, or shall use other technologies that do not rely on direct fossil fuel consumption.

Implementation: The project applicant(s) of all project phases.

Timing: Before approval of final maps and building permits for all project phases, including all on- and off-site elements.

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Impact	Land/Water/GPA	Significance
Mitigation		

Enforcement: City of Folsom Community Development Department.

Mitigation Measure 3A.4-2a: Implement Additional Measures to Reduce Operational GHG Emissions. Each increment of new development within the project site requiring a discretionary approval (e.g., proposed tentative subdivision map, conditional use permit), shall be subject to a project-specific environmental review and will require that GHG emissions from construction and operation of each phase of development be reduced by 30% from business-as-usual 2006 emissions and as required by the California Global Warming Solutions Act of 2006 (AB 32).

The City shall require feasible reduction measures that, in combination with existing and future regulatory measures developed under AB 32, will reduce GHG emissions associated with the operation of future project development phases and supporting roadway and infrastructure improvements that are part of the selected action alternative by an amount sufficient to achieve the 2020-based goal of 4.36 CO2e/SP/year for development that would become operational on or before the year 2020 and the 2020-based goal of 3.68 CO2e/SP/year for development that would become operational on or before the year 2030, if it is feasible to do so. The feasibility of potential GHG reduction measures shall be evaluated by the City at the time each phase of development is proposed in order to allow for ongoing innovations in GHG reduction technologies, as well as incentives created in the regulatory environment.

For each increment of new development, the project applicant(s) shall submit to the City a list of feasible energy efficient design standards to be considered in the project-specific environmental review. These energy conservation measures which will be incorporated into the design, construction, and operational aspects of each increment of development, would result in a reduction in overall project energy consumption and GHGs. The project-specific environmental review shall further identify potentially feasible GHG reduction measures to reflect the current state of the regulatory environment, and which will continuously evolve under the mandate of AB 32 and the resulting CO2e/SP/year metric. The City will review and ensure inclusion of the design features in the proposed project before the applicant(s) can receive the City's discretionary approval for the applicable increment of development. In determining what measures should appropriately be imposed by the City under the circumstances, the City shall consider the following factors:

- the extent to which rates of GHG emissions generated by motor vehicles traveling to, from, and within the project site are projected to decrease over time as a result of regulations, policies, and/or plans that have already been adopted or may be adopted in the future by ARB or other public agency pursuant to AB 32, or by EPA;
- the extent to which mobile-source GHG emissions, which at the time of writing this EIR/EIS comprise a substantial portion of the state's GHG inventory, can also be reduced through design measures that result in trip reductions and reductions in trip length;
- the extent to which GHG emissions emitted by the mix of power generation operated by SMUD, the electrical utility that will serve the project site, are projected to decrease pursuant to the Renewables Portfolio Standard required by SB 1078 and SB 107, as well as any future regulations, policies, and/or plans adopted by the federal and state governments that reduce GHG emissions from power generation;
- the extent to which replacement of CCR Title 24 with the California Green Building Standards Code or other similar requirements will result in new buildings being more energy efficient and consequently more GHG efficient;
- the extent to which any stationary sources of GHG emissions that would be operated on a proposed land use (e.g., industrial) are already subject to regulations, policies, and/or plans that reduce GHG emissions, particularly any future regulations that will be developed as part of ARB's implementation of AB 32, or other pertinent regulations on stationary sources that have the indirect effect of reducing GHG emissions;
- the extent to which the feasibility of existing GHG reduction technologies may change in the future, and to which innovation in GHG reduction technologies

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Mitigation		

will continue, effecting cost-benefit analyses that determine economic feasibility; and

- whether the total costs of proposed mitigation for GHG emissions, together with other mitigation measures required for the proposed development, are so great that a reasonably prudent property owner would not proceed with the project in the face of such costs.

In considering how much, and what kind of, measures are necessary in light of these factors, the City shall consider and implement as appropriate, the following non-exclusive and non-exhaustive list of measures. GHG emission reduction strategies and their respective feasibility are likely to evolve over time. These measures are derived from multiple sources including the Mitigation Measure Summary in Appendix B of the California Air Pollution Control Officer's Association (CAPCOA) white paper, *CEQA & Climate Change* (CAPCOA 2009a); CAPCOA's *Model Policies for Greenhouse Gases in General Plans* (CAPCOA 2009b); and the California Attorney General's Office publication, The California Environmental Quality Act: Addressing Global Warming Impacts at the Local Agency Level (California Attorney General's Office 2008).

Energy Efficiency

- Include clean alternative energy features to promote energy self-sufficiency (e.g., photovoltaic cells, solar thermal electricity systems, small wind turbines).
- Design buildings to meet CEC Tier II requirements (e.g., exceeding the requirements of the Title 24 [as of 2007] by 35%).
- Site buildings to take advantage of shade and prevailing winds and design landscaping and sun screens to reduce energy use.
- Install efficient lighting in all buildings (including residential). Also install lighting control systems, where practical. Use daylight as an integral part of lighting systems in all buildings.
- Install light-colored "cool" pavements, and strategically located shade trees along all bicycle and pedestrian routes.

Water Conservation and Efficiency

- With the exception of ornamental shade trees, use water-efficient landscapes with native, drought-resistant species in all public area and commercial landscaping. Use water-efficient turf in parks and other turf-dependant spaces.
- Install the infrastructure to use reclaimed water for landscape irrigation and/or washing cars.
- Install water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls.
- Design buildings and lots to be water-efficient. Only install water-efficient fixtures and appliances.
- Restrict watering methods (e.g., prohibit systems that apply water to nonvegetated surfaces) and control runoff. Prohibit businesses from using pressure washers for cleaning driveways, parking lots, sidewalks, and street surfaces. These restrictions should be included in the Covenants, Conditions, and Restrictions of the community.
- Provide education about water conservation and available programs and incentives.
- To reduce stormwater runoff, which typically bogs down wastewater treatment systems and increases their energy consumption, construct driveways to single family detached residences and parking lots and driveways of multifamily residential uses with pervious surfaces. Possible designs include Hollywood drives (two concrete strips with vegetation or aggregate in between) and/or the use of porous concrete, porous asphalt, turf blocks, or pervious pavers.
- Comply with any applicable water conservation ordinances.

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B (Beneficial) NI (No impact) LTS (Less than significant) PS (Potentially significant) S (Significant) SU (Significant and unavoidable)

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

Solid Waste Measures

- Reuse and recycle construction and demolition waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard).
- Provide interior and exterior storage areas for recyclables and green waste at all buildings.
- Provide adequate recycling containers in public areas, including parks, school grounds, golf courses, and pedestrian zones in areas of mixed-use development.
- Provide education and publicity about reducing waste and available recycling services.

Transportation and Motor Vehicles

- Promote ride-sharing programs and employment centers (e.g., by designating a certain percentage of parking spaces for ride-sharing vehicles, designating adequate passenger loading and unloading zones and waiting areas for ride-share vehicles, and providing a Web site or message board for coordinating ride-sharing).
- Provide the necessary facilities and infrastructure in all land use types to encourage the use of low- or zero-emission vehicles (e.g., electric vehicle charging facilities and conveniently located alternative fueling stations).
- At industrial and commercial land uses, all forklifts, "yard trucks," or vehicles that are predominately used on-site at non-residential land uses shall be electric-powered or powered by biofuels (such as biodiesel [B100]) that are produced from waste products, or shall use other technologies that do not rely on direct fossil fuel consumption.

Implementation: The project applicant(s) of all project phases.

Timing: Before approval of final maps and/or building permits for all project phases requiring discretionary approval, including all on- and off-site elements.

Enforcement: City of Folsom Community Development Department.

Mitigation Measure 3A.4-2b: Participate in and Implement an Urban and Community Forestry Program and/or Off-Site Tree Program to Off-Set Loss of On-Site Trees. The trees on the project site contain sequestered carbon and would continue to provide future carbon sequestration during their growing life. For all trees that are subject to removal, the project applicant(s) of all project phases shall participate in and provide necessary funding for urban and community forestry program (such as the UrbanWood program managed by the Urban Forest Ecosystems Institute [Urban Forest Ecosystems Institute 2009]) in which wood from any removed trees is harvested for an end-use that would retain its carbon sequestration (e.g., furniture building, cabinet making). For all nonharvestable trees that are subject to removal, the project applicant(s) shall develop and fund an off-site tree program that includes a level of tree planting that, at a minimum, increases carbon sequestration by an amount equivalent to what would have been sequestered by the blue oak woodland during its lifetime. This program shall be funded by the project applicant(s) of each development phase and reviewed for comment by an independent Certified Arborist unaffiliated with the project applicant(s) and shall be coordinated with the requirements of Mitigation Measure 3.3-5, as stated in Section 3A.3, "Biological Resources - Land." Final approval of the program shall be provided by the City. Components of the program may include, but not be limited to, providing urban tree canopy in the City of Folsom, or reforestation in suitable areas outside the City. The California Urban Forestry Greenhouse Gas Reporting Protocol shall be used to assess this mitigation program (CCAR 2008). All unused vegetation and tree material shall be mulched for use in landscaping on the project site, shipped to the nearest composting facility, or shipped to a landfill that is equipped with a methane collection system, or combusted in a biomass power plant. Tree and vegetative material should not be burned

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

on- or off-site unless used as fuel in a biomass power plant.

Implementation: The project applicant(s) of all project phases.

Timing: Before approval of final maps and/or building permits for all project phases requiring discretionary approval, including all on- and off-site elements.

Enforcement: The City of Folsom Community Development Department.

OFF-SITE

Mitigation Measure: No mitigation measures are required.

Significance after Mitigation: cumulatively considerable and significant and unavoidable

3B.4 CLIMATE CHANGE – WATER

3B.4-1: Generation of Short- and Long-term Increases in Greenhouse Gases. Construction and operation of the Off-site Water Facility Alternatives would result in a net increase in greenhouse gas emissions, which would contribute considerably to cumulative GHG emissions.	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A:** direct & indirect PS

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A: Mitigation Measure 3B.4-1a: Implement GHG Reduction Measures during Construction. The bid specifications for construction of the Off-site Water Facilities shall require that bidders demonstrate how they will comply with each of the following measures during all construction and demolition activities:

1) Construction vehicles and equipment will be properly maintained at all times in accordance with manufacturer's specifications, including proper tuning and timing of engines. Equipment maintenance records and equipment design specification data sheets shall be kept on-site during construction and demolition activities and subject to inspection by the SMAQMD.
2) Operators will turn off all construction vehicles and equipment and all delivery vehicles when not in use, and not allow idling for more than 5 minutes or for such other more restrictive time as may be required in law or regulation.
3) On-site construction vehicles and equipment will use ARB-certified biodiesel fuel if available (a minimum of B20, or 20 percent of biodiesel) except for those with warranties that would be voided if B20 biodiesel fuel were used. Prior to issuance of grading or demolition permits, the contractor shall provide documentation to the City that verifies whether any equipment is exempt; that a biodiesel supply has been secured; and that the construction contractor is aware that the use of biodiesel is required.
4) A City-approved Solid Waste Diversion and Recycling Plan (or such other documentation to the satisfaction of the City) will be in place for the Off-site Water Facilities that demonstrates the diversion from landfills and recycling of all nonhazardous, salvageable and re-useable wood, metal, plastic and paper products during construction and demolition activities. The Plan or other documentation shall include the name of the waste hauler, their assumed destination for all waste and recycled materials, and the procedures that will be followed to ensure implementation of this measure.

Implementation: City of Folsom Utilities Department

Timing: Prior to the approval of grading plans and building permits for all off-site water facilities.

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

Enforcement:
1. For improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department, City of Folsom Community Development Department and SMAQMD.
2. For improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department and SMAQMD.
3. For improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department and SMAQMD.

Mitigation Measure 3B.4-1b Prepare and Implement an Off-site Water Facilities Climate Action Plan. Prior to operation, the City shall have in place a Off-site Water Facilities Climate Action Plan and Greenhouse Reduction Strategy (Plan) that has been adopted by the City following an opportunity for review and recommendation by the SMAQMD. At a minimum, the Plan shall include:

- Designation of Person Responsible for Implementation. The Plan shall designate the name and contact information of the person(s) responsible for ensuring continuous and on-going implementation of the Plan.
- GHG Inventory and Reduction Target. The City shall prepare a complete GHG Inventory for the Offsite Water Facilities components within one year following occupancy and a GHG reduction target based on State guidance.
- Off-site Water Facilities Design Features. The Off-site Water Facilities shall include design features to reduce operational GHG emissions, as well as an estimate of the reduction in GHG emissions that is expected to result from each facility. Initial measures that may be considered include, but are not limited to:
  - design all conditioned occupancies with "cool roofs" using products certified by the Cool Roof Rating Council, and other exposed roof surfaces coated with “cool paints”;
  - design all conditioned occupancies to take advantage of shade through the planting of deciduous canopy-type trees and/or prevailing winds to reduce energy use;
  - make maximum use of EnergyStar-qualified energy efficient appliances, heating and cooling systems, office equipment and lighting products;
  - install a photovoltaic array (solar panels) or other source of renewable energy generation on-site, or otherwise acquire energy that has been generated by renewable sources to meet a portion of the electricity needs of the Offsite Water Facilities; and
  - in an effort to reduce GHG emissions from transportation sources, the bid specifications for the Offsite Water Facilities should require that bidders demonstrate that they have given preference to local sources of building materials or offer evidence to support why such local sources have not been used.

Implementation: City of Folsom Utilities Department

Timing: Prior to the approval of grading plans and building permits for all off-site water facilities.

Enforcement:
1. For improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department, City of Folsom Community Development Department and SMAQMD.
2. For improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department and SMAQMD.

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CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

B (Beneficial) NI (No impact) LTS (Less than significant) PS (Potentially significant) S (Significant) SU (Significant and unavoidable)

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3. For improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department and SMAQMD. ***Significance after Mitigation: significant and unavoidable***		
3B.4-2: Effects of Climate Change on the Off-site Water Supply Facilities. Global climate change could result in effects on water quality or water supplies proposed as part of the Off-site Water Facility Alternatives. **NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, 4A:** No mitigation measures are required. ***Significance after Mitigation: Less then Significant***	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A:** Direct LTS, no indirect
3A.5 CULTURAL RESOURCES – LAND		
3A.5-1: Possible Destruction of or Damage to Known Prehistoric and Historic-Era Cultural Resources from Ground-Disturbance or Other Construction-Related Activities. Construction activities during project implementation could result in the destruction of or damage to known prehistoric and historic-era cultural resources that are potentially eligible for or listed on the CRHR or NRHP. **NP:** No mitigation measures are required. **NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.5-1a: Prepare, Execute, and Implement a Programmatic Agreement.** For all action alternatives that require Federal permitting and authorization, USACE shall satisfy the requirements of Section 106 of the NHPA. A PA shall be prepared that requires the following measures: ▸ For each development phase of the specific plan and associated Federal permits and authorizations, USACE, as the Federal Section 106 lead (or USACE designee) shall prepare an APE map and shall consult with the SHPO on the APE, as described above. ▸ Once SHPO, USACE, and other consulting parties agree on the project-specific APE, USACE or permit applicant (or designee, as directed by USACE) shall perform an inventory for cultural resources in the phase-specific APE consistent with the Secretary of the Interior's Standards and Guidelines for Identification (48 Federal Register [FR] 44720-23) and submit this inventory to the SHPO and any other relevant consulting parties for review as required under the PA. The same document shall evaluate identified resources for listing on the NRHP per the criteria provided above and the Secretary of the Interior's Standards and Guidelines for Evaluation (48 FR 44723-26). ▸ Once the inventory is complete, USACE (or designee, as directed by USACE) shall prepare a Finding of Effect (FOE) to assess the effect of the buildout of the individual development phase upon identified historic properties by applying the Criteria of Adverse Effect pursuant to 36 CFR 800.5(a) (1). If the FOE identifies adverse effects, the project applicant or USACE, or designee) shall prepare treatment measures and protocols to minimize these impacts to the extent possible. These treatment measures shall be appended to the PA in a treatment plan prepared for the specific project development phase. Treatment measures may include, but are not limited to, avoidance and preservation in places where possible. Where avoidance is not possible or feasible, treatment shall consist of	Land	**NP:** direct PS, no indirect **NCP, PP, CD, RHD:** direct significant, no indirect **RIM:** direct PS, no indirect

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

either: 1) recovery of a suitable sample of material from archaeological sites that have the potential to contribute to research, or 2) documentation of historic resources to capture their significance and relationship to important historical themes. Documentation of historical resources shall be performed according to the Historic American Building Survey or Historic American Engineering Record (HABS/HAER) specifications or an equivalent standard when existing architecture or engineered features are subject to adverse effects. Where appropriate, treatment plans may specify the preparation and circulation of interpretive brochures, narrative descriptions, and photographic documentation for the general public.

- A geoarchaeological overview of the specific plan area may be stipulated and implemented in the PA, as determined by USACE, in order to assess the likelihood for buried cultural deposits. Focused geoarchaeological studies may be subsequently required for portions of the specific plan area and vicinity of off-site elements that are considered highly sensitive to determine if additional inventory or monitoring should be performed during construction as determined by USACE.
- Resources that may be discovered inadvertently during construction will be handled pursuant to 36 CFR Part 800.13(b) (*Discoveries without prior planning*).

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties, and Caltrans) in coordination with USACE and SHPO to ensure that mitigation is consistent with the PA.

Implementation: USACE (or designee) and the project applicant(s) of all project phases (as directed by USACE)

Timing: The PA shall be prepared and executed (signed) prior to issuance of any Federal permit or authorization for any aspect or component of the specific plan project. Preparation of the phase-specific APE and inventory and evaluation of properties within the APE shall be performed prior to any ground-disturbing work in the APE for any Federal permitting or authorization of individual development phases. Implementation of treatment measures for identified historic properties may be performed during construction and ground-disturbing work provided that no ground-disturbing work is performed in the vicinity of resources subject to adverse effects and within an appropriate radius of the resource as determined by USACE, prior to completion of all treatment measures. The exact radius in which construction shall not occur shall be determined based upon the nature of the resource the potential for outlying undiscovered elements of that resource.

Enforcement: USACE and the project applicant(s) of all project phases (as directed by USACE), with oversight by the SHPO.

Mitigation Measure 3A.5-1b: Perform an Inventory and Evaluation of Cultural Resources for the California Register of Historic Places, Minimize or Avoid Damage or Destruction, and Perform Treatment Where Damage or Destruction Cannot be Avoided. Management of cultural resources eligible for or listed on the CRHR under CEQA mirrors management steps required under Section 106. These steps may be combined with deliverables and management steps performed for Section 106 provided that management documents prepared for the PA also clearly reference the CRHR listing criteria and significance thresholds that apply under CEQA. Prior to ground-disturbing work for each individual development phase or off-site element, the applicable oversight agency (City of Folsom, El Dorado County, Sacramento County, or Caltrans), or the project applicant(s) of all project phases, with applicable agency oversight, shall perform the following actions:

- Retain the services of a qualified archaeologist to perform an inventory of cultural resources within each individual development phase or off-site element subject to approval under CEQA. Identified resources shall be evaluated for listing on the CRHR. The inventory report shall also identify locations that are sensitive for undiscovered cultural resources based upon the location of known resources, geomorphology, and topography. The inventory report shall specify

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

the location of monitoring of ground-disturbing work in these areas by a qualified archaeologist, and monitoring in the vicinity of identified resources that may be damaged by construction, if appropriate. The identification of sensitive locations subject to monitoring during construction of each individual development phase shall be performed in concert with monitoring activities performed under the PA to minimize the potential for conflicting requirements.

- For each resource that is determined eligible for the CRHR, the applicable agency or the project applicant(s) of all project phases (under the agency's direction) shall obtain the services of a qualified archaeologist who shall determine if implementation of the individual project development phase would result in damage or destruction of "significant" (under CEQA) cultural resources. These findings shall be reviewed by the applicable agency for consistency with the significance thresholds and treatment measures provided in this EIR/EIS.
- Where possible, the project shall be configured or redesigned to avoid impacts on eligible or listed resources. Alternatively, these resources may be preserved in place if possible, as suggested under California Public Resources Code Section 21083.2.
- Where impacts cannot be avoided, the applicable agency or the project applicant(s) of all project phases (under the applicable agency's direction) shall prepare and implement treatment measures that are determined to be necessary by a qualified archaeologist. These measures may consist of data recovery excavations for resources that are eligible for listing because of the data they contain (which may contribute to research). Alternatively, for historical architectural, engineered, or landscape features, treatment measures may consist of a preparation of interpretive, narrative, or photographic documentation. These measures shall be reviewed by the applicable oversight agency for consistency with the significance thresholds and standards provided in this EIR/EIS.
- To support the evaluation and treatment required under this mitigation measure, the archaeologist retained by either the applicable oversight agency or the project applicant(s) of all project phases shall prepare an appropriate prehistoric and historic context that identifies relevant prehistoric, ethnographic, and historic themes and research questions against which to determine the significance of identified resources and appropriate treatment.
- These steps and documents may be combined with the phasing of management and documents prepared pursuant to the PA to minimize the potential for inconsistency and duplicative management efforts.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties, or Caltrans).

Implementation: The applicable oversight agency and the project applicant(s) (at the agency's direction) of all project phases

Timing: Before issuance of building permits and ground-disturbing activities.

Enforcement:
1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For the two roadway connections in El Dorado Hills: El Dorado County Development Services Department.
3. For the detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.
4. For the U.S. 50 interchange improvements: Caltrans.

RIM: Implement Mitigation Measures 3.53A.5-1a and 3.53A.5-1b.

Significance after Mitigation: potentially significant and unavoidable

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

3A.5-2: Possible Destruction of or Damage to Previously Undiscovered Cultural Resources from Ground-Disturbance or Other Construction-Related Activities. Construction activities during project implementation could result in the destruction of or damage to "significant" (under CEQA) undiscovered cultural resources.

Land

NP, NCP, PP, RIM, CD, RHD: direct PS, no indirect

NP: No mitigation measures are required.

NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.5-2: Conduct Construction Personnel Education, Conduct On-Site Monitoring if Required, Stop Work if Cultural Resources are Discovered, Assess the Significance of the Find, and Perform Treatment or Avoidance as Required. To reduce potential impacts to previously undiscovered cultural resources, the project applicant(s) of all project phases shall do the following:

- Before the start of ground-disturbing activities, the project applicant(s) of all project phases shall retain a qualified archaeologist to conduct training for construction workers, to educate them about the possibility of encountering buried cultural resources, and inform them of the proper procedures should cultural resources be encountered.
- As a result of the work conducted for Mitigation Measures 3A.5-1a and 3A.5-1b, if the archaeologist determines that any portion of the SPA or the off-site elements should be monitored for potential discovery of as-yet-unknown cultural resources, the project applicant(s) of all project phases shall implement such monitoring in the locations specified by the archaeologist.
- Should any cultural resources, such as structural features, unusual amounts of bone or shell, artifacts, or architectural remains be encountered during any construction activities, work shall be suspended in the vicinity of the find and the appropriate oversight agency(ies) (identified below) shall be notified immediately. The appropriate oversight agency(ies) shall retain a qualified archaeologist who shall conduct a field investigation of the specific site and shall assess the significance of the find by evaluating the resource for eligibility for listing on the CRHR and the NRHP. If the resource is eligible for listing on the CRHR or NRHP and it would be subject to disturbance or destruction, the actions required in Mitigation Measures 3A.5-1a and 3A.5-1b shall be implemented. The oversight agency shall be responsible for approval of recommended mitigation if it is determined to be feasible in light of the approved land uses, and shall implement the approved mitigation before resuming construction activities at the archaeological site.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties, or Caltrans).

Implementation: Project applicant(s) of all project phases.

Timing: Before and during ground-disturbing activities.

Enforcement:
1. For actions taken to satisfy the requirements of Section 106: the SHPO and USACE.
2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
3. For the two roadway connections off-site into El Dorado Hills: El Dorado County Development Services Department.
4. For the detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
5. For the U.S. 50 interchange improvements: Caltrans. ***Significance after Mitigation: potentially significant and unavoidable***		
3A.5-3: Possible Destruction of or Damage to Interred Human Remains during Construction. Ground-disturbing activities could inadvertently disinter and/or destroy buried human skeletal remains.	Land	**NP, NCP, PP, RIM, CD, RHD:** direct & potentially significant, no indirect
NP, NCP, PP, RIM, CD, RHD: Suspend Ground-Disturbing Activities if Human Remains are Encountered and Comply with California Health and Safety Code Procedures. In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, including those associated with off-site elements, the project applicant(s) of all project phases shall immediately halt all ground-disturbing activities in the area of the find and notify the applicable county coroner and a professional archaeologist skilled in osteological analysis to determine the nature of the remains. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or public lands (California Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, he or she must contact the NAHC by phone within 24 hours of making that determination (California Health and Safety Code Section 7050[c]). After the coroner's findings are complete, the project applicant(s), an archaeologist, and the NAHC-designated MLD shall determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments are not disturbed. The responsibilities for acting on notification of a discovery of Native American human remains are identified in Section 5097.9 of the California Public Resources Code. Upon the discovery of Native American remains, the procedures above regarding involvement of the applicable county coroner, notification of the NAHC, and identification of an MLD shall be followed. The project applicant(s) of all project phases shall ensure that the immediate vicinity (according to generally accepted cultural or archaeological standards and practices) is not damaged or disturbed by further development activity until consultation with the MLD has taken place. The MLD shall have at least 48 hours after being granted access to the site to inspect the site and make recommendations. A range of possible treatments for the remains may be discussed: nondestructive removal and analysis, preservation in place, relinquishment of the remains and associated items to the descendants, or other culturally appropriate treatment. As suggested by Assembly Bill (AB) 2641 (Chapter 863, Statutes of 2006), the concerned parties may extend discussions beyond the initial 48 hours to allow for the discovery of additional remains. AB 2641(e) includes a list of site protection measures and states that the project applicant(s) shall comply with one or more of the following requirements: ▸ record the site with the NAHC or the appropriate Information Center, ▸ use an open-space or conservation zoning designation or easement, or ▸ record a document with the county in which the property is located. The project applicant(s) or its authorized representative of all project phases shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance if the NAHC is unable to identify an MLD or if the MLD fails to make a recommendation within 48 hours after being granted access to the site. The project applicant(s) or its authorized representative may also reinter the remains in a location not subject to further disturbance if it rejects the recommendation of the MLD and mediation by the NAHC fails to provide measures acceptable to the landowner. Ground disturbance in the zone of suspended activity shall not recommence without authorization from the archaeologist.		

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties, or Caltrans). Implementation: Project applicant(s) of all project phases. Timing: Upon the discovery of suspected human remains. Enforcement: 1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the two roadway connections in El Dorado Hills: El Dorado County Development Services Department. 3. For the detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department. 4. For the U.S. 50 interchange improvements: Caltrans. ***Significance after Mitigation: less than significant***		
3B.5 CULTURAL RESOURCES – WATER		
3B.5-1: Possible Destruction of or Damage to Known Prehistoric and Historic-Era Cultural Resources from Ground-Disturbance or Other Construction-Related Activities. Construction activities associated with the Off-site Water Facility Alternatives could result in the destruction of or damage to known prehistoric and historic-era cultural resources that are potentially eligible for or listed on the CRHR or NRHP.	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A:** potentially significant & no indirect
NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A: Implement Mitigation Measure 3A.5-1a: Prepare, Execute, and Implement a Programmatic Agreement. Implement Mitigation Measure 3A.5-1b: Perform an Inventory and Evaluation of Cultural Resources for the California Register of Historic Places, Minimize or Avoid Damage or Destruction, and Perform Treatment Where Damage or Destruction Cannot be Avoided. Implementation: City of Folsom Utilities Department Timing: Prior to completion of final design and start of construction Enforcement: 1. For actions taken to satisfy the requirements of Section 106: the SHPO and USACE. 2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 3. For off-site improvements within unincorporated Sacramento County and the City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department. ***Significance after Mitigation: less than significant***		

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3B.5-2: Possible Destruction of or Damage to Previously Undiscovered Cultural Resources from Ground-Disturbance or Other Construction-Related Activities. Construction activities during project implementation could result in the destruction of or damage to "significant" (under CEQA) undiscovered cultural resources.	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A:** direct PS & no indirect
PA., 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A: Implement Mitigation Measure 3A.5-2: Conduct Construction Personnel Education, Conduct On-Site Monitoring if Required, Stop Work if Cultural Resources are Discovered, Assess the Significance of the Find, and Perform Treatment or Avoidance as Required. Implementation: City of Folsom Utilities Department Timing: Prior to completion of final design and start of construction Enforcement: 1. For actions taken to satisfy the requirements of Section 106: the SHPO and USACE. 2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 3. For off-site improvements within unincorporated Sacramento County and the City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department. ***Significance after Mitigation: less than significant***		
3B.5-3: Possible Destruction of or Damage to Interred Human Remains during Construction. Ground-disturbing activities could inadvertently disinter and/or destroy buried human skeletal remains	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A:** direct significant & no indirect
NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A: Implement Mitigation Measure 3A.5-3: Suspend Ground-Disturbing Activities if Human Remains are Encountered and Comply with California Health and Safety Code Procedures. Implementation: City of Folsom Utilities Department Timing: Before issuance of building permits and ground-disturbing activities. Enforcement: 1. For actions taken to satisfy the requirements of Section 106: the SHPO and USACE. 2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 3. For off-site improvements within unincorporated Sacramento County and the City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department. ***Significance after Mitigation: less than significant***		

NP (No Action/No Project) NCP (No USACE Permit) PP (Proposed Project) RIM (Resource Impact Minimization)
CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

B (Beneficial) NI (No impact) LTS (Less than significant) PS (Potentially significant) S (Significant) SU (Significant and unavoidable)

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.6 ENVIRONMENTAL JUSTICE – LAND		
3A.6-1: Potential Effects on Minority Populations. Project implementation would not create a disproportionate placement of adverse environmental impacts on minority communities. **NP, NCP, PP, RIM, CD, RHD:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Land	**NP:** no direct or indirect **NCP, PP, RIM, CD, RHD:** direct LTS, no indirect
3A.6-2: Potential Effects on Low-Income Populations. Project implementation would not create a disproportionate placement of adverse environmental impacts on low-income populations. **NP, NCP, PP, RIM, CD, RHD:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Land	**NP:** no direct or indirect **NCP, PP, RIM, CD, RHD:** direct LTS, no indirect
3B.6 ENVIRONMENTAL JUSTICE – WATER		
3B.6-1: Potential Effects on Minority Populations. Implementation of the Off-site Water Facility Alternatives would not create a disproportionate placement of adverse environmental impacts on minority communities. **NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** No mitigation measures required. ***Significance after Mitigation: less than significant***	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** direct LTS & no indirect (*operation*)
3B.6-2: Potential Effects on Low-Income Populations. Project implementation would not create a disproportionate placement of adverse environmental impacts on low-income populations. **NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** No mitigation measures required. ***Significance after Mitigation: less than significant***	Water	**NCP, PA, 1, 1A, 2B:** no direct or indirect **2, 2A, 3, 3A, 4, and 4A:** direct LTS & no indirect

NP (No Action/No Project) NCP (No USACE Permit) PP (Proposed Project) RIM (Resource Impact Minimization)
CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

B (Beneficial) NI (No impact) LTS (Less than significant) PS (Potentially significant) S (Significant) SU (Significant and unavoidable)

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.7 GEOLOGY, SOILS, MINERALS, AND PALEONTOLOGICAL RESOURCES - LAND		
3A.7-1: Possible Risks to People and Structures Caused by Strong Seismic Ground Shaking. The SPA is located in an area of generally low seismic activity; however, structures in the SPA could be subject to seismic ground shaking from an earthquake along active faults in Lake Tahoe.	Land	**ON- & OFF-SITE** **NP, NCP, PP, RIM, CD, RHD:** direct, PS, No indirect
ON- & OFF-SITE **NP:** No mitigation measures are required.		
ON- & OFF-SITE **NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.7-1a: Prepare Site-Specific Geotechnical Report per CBC Requirements and Implement Appropriate Recommendations.** Before building permits are issued and construction activities begin any project development phase, the project applicant(s) of each project phase shall hire a licensed geotechnical engineer to prepare a final geotechnical subsurface investigation report for the on- and off-site facilities, which shall be submitted for review and approval to the appropriate City or county department (identified below). The final geotechnical engineering report shall address and make recommendations on the following: ▸ site preparation; ▸ soil bearing capacity; ▸ appropriate sources and types of fill; ▸ potential need for soil amendments; ▸ road, pavement, and parking areas; ▸ structural foundations, including retaining-wall design; ▸ grading practices; ▸ soil corrosion of concrete and steel; ▸ erosion/winterization; ▸ seismic ground shaking; ▸ liquefaction; and ▸ expansive/unstable soils. In addition to the recommendations for the conditions listed above, the geotechnical investigation shall include subsurface testing of soil and groundwater conditions, and shall determine appropriate foundation designs that are consistent with the version of the CBC that is applicable at the time building and grading permits are applied for. All recommendations contained in the final geotechnical engineering report shall be implemented by the project applicant(s) of each project phase. Special recommendations contained in the geotechnical engineering report shall be noted on the grading plans and implemented as appropriate before construction begins. Design and construction of all new project development shall be in accordance with the CBC. The project applicant(s) shall provide for engineering inspection and certification that earthwork has been performed in conformity with recommendations contained in the geotechnical report.		

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
Mitigation Measure 3A.7-1b: Monitor Earthwork during Earthmoving Activities. All earthwork shall be monitored by a qualified geotechnical or soils engineer retained by the project applicant(s) of each project phase. The geotechnical or soils engineer shall provide oversight during all excavation, placement of fill, and disposal of materials removed from and deposited on both on- and off-site construction areas. Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties, or Caltrans). Implementation: Project applicant(s) of all project phases. Timing: Before issuance of building permits and ground-disturbing activities. Enforcement: 1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the two off-site roadway connections from Folsom Heights into El Dorado Hills: El Dorado County Public Works Department. 3. For the off-site detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department. 4. For the U.S. 50 interchange improvements: Caltrans. ***Significance after Mitigation: less than significant***		
3A.7-2: Seismically-Induced Risks to People and Structures Caused by Liquefaction. Construction activities would not occur in areas subject to liquefaction. **NP, NCP, PP, RIM, CD, RHD:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Land	**ON- & OFF-SITE** **NP, NCP, PP, RIM, CD, RHD:** direct LTS, no indirect
3A.7-3: Construction-Related Erosion. Construction activities during project implementation would involve grading and movement of earth in soils subject to wind and water erosion hazard and on steep slopes. **ON- & OFF-SITE** **NP:** No mitigation measures are required. **ON- & OFF-SITE** **NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.7-3: Prepare and Implement the Appropriate Grading and Erosion Control Plan.** Before grading permits are issued, the project applicant(s) of each project phase that would be located within the City of Folsom shall retain a California Registered Civil Engineer to prepare a grading and erosion control plan. The grading and erosion control plan shall be submitted to the City Public Works Department before issuance of grading permits for all new development. The plan shall be consistent with the City's Grading Ordinance, the City's Hillside Development Guidelines, and the state's NPDES permit, and shall include the site-specific grading associated with development for all project phases. For the two off-site roadways into El Dorado Hills, the project applicant(s) of that phase shall retain a California Registered Civil Engineer to prepare a grading	Land	**ON- & OFF-SITE** **NP, NCP, PP, RIM, CD, RHD:** direct, PS, no indirect

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

and erosion control plan. The grading and erosion control plan shall be submitted to the El Dorado County Public Works Department and the El Dorado Hills Community Service District before issuance of grading permits for roadway construction in El Dorado Hills. The plan shall be consistent with El Dorado County's Grading, Erosion, and Sediment Control Ordinance and the state's NPDES permit, and shall include the site-specific grading associated with roadway development.

For the off-site detention basin west of Prairie City Road, the project applicant(s) of that phase shall retain a California Registered Civil Engineer to prepare a grading and erosion control plan. The grading and erosion control plan shall be submitted to the Sacramento County Public Works Department before issuance of a grading permit. The plan shall be consistent with Sacramento County's Grading, Erosion, and Sediment Control Ordinance and the state's NPDES permit, and shall include the site-specific grading associated with construction of the detention basin.

The plans referenced above shall include the location, implementation schedule, and maintenance schedule of all erosion and sediment control measures, a description of measures designed to control dust and stabilize the construction-site road and entrance, and a description of the location and methods of storage and disposal of construction materials. Erosion and sediment control measures could include the use of detention basins, berms, swales, wattles, and silt fencing, and covering or watering of stockpiled soils to reduce wind erosion. Stabilization on steep slopes could include construction of retaining walls and reseeding with vegetation after construction. Stabilization of construction entrances to minimize trackout (control dust) is commonly achieved by installing filter fabric and crushed rock to a depth of approximately 1 foot. The project applicant(s) shall ensure that the construction contractor is responsible for securing a source of transportation and deposition of excavated materials.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties).

Implementation of Mitigation Measure 3A.9-1 (discussed in Section 3A.9, "Hydrology and Water Quality – Land") would also help reduce erosion-related impacts.

Implementation: Project applicant(s) of all project phases.

Timing: Before the start of construction activities.

Enforcement:
1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For the two off-site roadway connections from Folsom Heights into El Dorado Hills: El Dorado County Public Works Department.
3. For the off-site detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.

Significance after Mitigation: less than significant

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.7-4: Potential Geologic Hazards Related to Construction in Bedrock and Rock Outcrops, and Unstable Soils. Development in the eastern portion of the SPA would occur in steep slopes underlain by bedrock at shallow depths and rock outcrops that could result in geologic hazards during construction.	Land	**ON- & OFF-SITE** **NP, NCP, PP, RIM, CD, RHD:** direct PS, no indirect
ON- & OFF-SITE **NP:** No mitigation measures are required. **ON- & OFF-SITE** **NCP, PP, RIM, CD, RHD:** Implement Mitigation Measure 3A.7-1a. **Mitigation Measure 3A.7-4a: Prepare a Seismic Refraction Survey and Obtain Appropriate Permits for all On-Site and Off-site Elements East of Old Placerville Road.** Before the start of all construction activities east of Old Placerville Road, the project applicant(s) of all project phases shall retain a licensed geotechnical engineer to perform a seismic refraction survey. Project-related excavation activities shall be carried out as recommend by the geotechnical engineer. Excavation may include the use of heavy-duty equipment such as large bulldozers or large excavators, and may include blasting. Appropriate permits for blasting operations shall be obtained from the relevant City or county jurisdiction prior to the start of any blasting activities. Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties). Implementation: Project applicant(s) of all project phases for on-site and off-site elements east of Old Placerville Road. Timing: Before or during earthmoving activities. Enforcement: 1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the two off-site roadway connections from Folsom Heights into El Dorado Hills: El Dorado County Public Works Department. ***Significance after Mitigation: less than significant***		
3A.7-5: Potential Geologic Hazards Related to Seasonal Subsurface Water Flows from Surface Infiltration. SPA excavation is not expected to encounter groundwater, but seasonal subsurface flows due to surface infiltration, as well as surface infiltration from shallow wells, could adversely affect some of the building foundations at the SPA.	Land	**ON- & OFF-SITE** **NP, NCP, PP, RIM, CD, RHD:** PS
ON- & OFF-SITE **NP:** No mitigation measures are required. **ON- & OFF-SITE** **NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.7-5: Divert Seasonal Water Flows Away from Building Foundations.** The project applicant(s) of all		

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
project phases shall either install subdrains (which typically consist of perforated pipe and gravel, surrounded by nonwoven geotextile fabric), or take such other actions as recommended by the geotechnical or civil engineer for the project that would serve to divert seasonal flows caused by surface infiltration, water seepage, and perched water during the winter months away from building foundations. Implementation: Project applicant(s) of all project phases. Timing: Before and during earthmoving activities. Enforcement: 1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the two roadway connections in El Dorado Hills: El Dorado County Public Works Department. ***Significance after Mitigation: less than significant***		
3A.7-6: Potential Damage to Structures and Infrastructure from Construction in Expansive Soils. Portions of the SPA are underlain by soils that have a moderate to high potential for expansion when wet and may result damage to structures. **ON- & OFF-SITE** **NP:** No mitigation measures are required. **ON- & OFF-SITE** **NCP, PP, RIM, CD, RHD:** Implement Mitigation Measures 3A.7-1a and 3A.7-1b. ***Significance after Mitigation: less than significant***	Land	**ON- & OFF-SITE** **NP, NCP, PP, RIM, CD, RHD:** direct PS, no indirect
3A.7-7: Suitability of Soils for Use with Septic Systems. The SPA is underlain by soils that are unsuitable for use with conventional septic systems. **ON- & OFF-SITE** **NP:** No mitigation measures are required. **ON- & OFF-SITE** **NCP, PP, RIM, CD, RHD:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Land	**ON- & OFF-SITE** **NP:** direct significant, indirect PS **ON- & OFF-SITE** **NCP, PP, RIM, CD, RHD:** no direct or indirect

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CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.7-8: Possible Loss of Mineral Resources–Construction Aggregate. The SPA is located within the Sacramento-Fairfield Production-Consumption Region designated by CDMG and contains dredge tailings that could provide a source of construction aggregate. **NP, NCP, PP, RIM, CD, RHD:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Land	**ON- & OFF-SITE** **NP:** no direct or indirect **ON-SITE** **NCP, PP, RIM, CD, RHD:** direct LTS, no indirect **OFF-SITE** No direct or indirect
3A.7-9: Possible Loss of Mineral Resources–Kaolin Clay. The SPA is located within the Sacramento-Fairfield Production-Consumption Region designated by CDMG and may contain a deposit of kaolin clay. **ON-SITE** **NP:** No mitigation measures are required. **NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.7-9: Conduct Soil Sampling in Areas of the SPA Designated as MRZ-3 for Kaolin Clay and if Found, Delineate its Location and Notify Lead Agency and the California Division of Mines and Geology.** The project applicant(s) of all applicable project phases shall retain a licensed geotechnical or soils engineer to analyze soil core samples that shall be extracted from that portion of the SPA zoned MRZ-3 for kaolin clay, as shown on Exhibit 3A.7-3. In the event that kaolin clay is discovered, the City of Folsom, Sacramento County, and CDMG shall be notified. In addition, the approximate horizontal and vertical extent of available kaolin clay shall be delineated by the geotechnical or soils engineer. Implementation: Project applicant(s) of all project phases in the Ione Formation. Timing: Before issuance of building permits for development within the Ione Formation as shown in Exhibit 3A.7-1. Enforcement: City of Folsom Community Development Department, Sacramento County Planning and Community Development Department, California Division of Mines and Geology. **OFF-SITE** **Mitigation Measure:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Land	**ON- & OFF-SITE** **NP:** no direct or indirect **ON-SITE** **NCP, PP, RIM, CD, RHD:** direct LTS, No indirect **OFF-SITE** No direct or indirect

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CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

3A.7-10: Possible Damage of or Destruction to of Previously Unknown Unique Paleontological Resources during Construction-Related Activities. Portions of the SPA and the off-site detention basin are underlain by paleontologically sensitive rock formations. Therefore, construction activities could damage or destroy previously unknown, unique paleontological resources at the SPA.

Land

ON- & OFF-SITE
NP, NCP, PP, RIM, CD, RHD: direct PS, no indirect

NP: No mitigation measures are required.

NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.7-10: Conduct Construction Personnel Education, Stop Work if Paleontological Resources are Discovered, Assess the Significance of the Find, and Prepare and Implement a Recovery Plan as Required. To minimize potential adverse impacts on previously unknown potentially unique, scientifically important paleontological resources, the project applicant(s) of all project phases where construction would occur in the Ione and Mehrten Formations shall do the following:

- Before the start of any earthmoving activities for any project phase in the Ione or Mehrten Formations, the project applicant(s) shall retain a qualified paleontologist or archaeologist to train all construction personnel involved with earthmoving activities, including the site superintendent, regarding the possibility of encountering fossils, the appearance and types of fossils likely to be seen during construction, and proper notification procedures should fossils be encountered.
- If paleontological resources are discovered during earthmoving activities, the construction crew shall immediately cease work in the vicinity of the find and notify the appropriate lead agency (identified below). The project applicant(s) shall retain a qualified paleontologist to evaluate the resource and prepare a recovery plan in accordance with Society of Vertebrate Paleontology guidelines (1996). The recovery plan may include, but is not limited to, a field survey, construction monitoring, sampling and data recovery procedures, museum storage coordination for any specimen recovered, and a report of findings. Recommendations in the recovery plan that are determined by the lead agency to be necessary and feasible shall be implemented before construction activities can resume at the site where the paleontological resources were discovered.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., Sacramento County).

Implementation: Project applicant(s) of all project phases within the Ione and Mehrten Formations.

Timing: During earthmoving activities in the Ione and Mehrten Formations as shown in Exhibit 3A.7-1.

Enforcement:
1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For the off-site detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.

Significance after Mitigation: less than significant

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3B.7 GEOLOGY, SOILS, AND PALEONTOLOGICAL RESOURCES – WATER		
3B.7-1: Possible Risks to People and Structures Caused by Strong Seismic Ground Shaking. Zone 4 of the "Water" Study Area is located in an area of generally low seismic activity; however, structures constructed as part of the Off-site Water Facility Alternatives could be subject to seismic ground shaking from an earthquake along active faults in the Sierra Nevada.	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** direct PS & no indirect

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A: Mitigation Measure 3B.7-1a: Prepare Geotechnical Report(s) for the Off-site Water Facilities and Implement Required Measures.

Facility design for all Off-site Water Facility components shall comply with the site-specific design recommendations as provided by a licensed geotechnical or civil engineer to be retained by the City. The final geotechnical and/or civil engineering report shall address and make recommendations on the following:

- site preparation;
- soil bearing capacity;
- appropriate sources and types of fill;
- potential need for soil amendments;
- road, pavement, and parking areas;
- structural foundations, including retaining-wall design;
- grading practices;
- soil corrosion of concrete and steel;
- erosion/winterization;
- seismic ground shaking;
- liquefaction; and
- expansive/unstable soils.

In addition to the recommendations for the conditions listed above, the geotechnical investigation shall include subsurface testing of soil and groundwater conditions, and shall determine appropriate foundation designs that are consistent with the version of the CBC that is applicable at the time building and grading permits are applied for. All recommendations contained in the final geotechnical engineering report shall be implemented by the City.

Implementation: City of Folsom Utilities Department

Timing: Prior to completion of engineering plans for all Off-site Water Facilities

Enforcement:
1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For the off-site water facilities within Unincorporated Sacramento County or the City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

Mitigation Measure 3B.7-1b: Incorporate Pipeline Failure Contingency Measures Into Final Pipeline Design.

Isolation valves or similar devices shall be incorporated into all pipeline facilities to prevent substantial losses of surface water in the event of pipeline rupture, as recommended by a licensed geotechnical or civil engineer. The specifications of the isolation valves shall conform to the CBC and American Water Works Association standards.

Implementation: City of Folsom Utilities Department

Timing: Prior to completion of engineering plans for all Off-site Water Facilities

Enforcement:
1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For the off-site water facilities within Unincorporated Sacramento County or the City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.

Significance after Mitigation: less than significant

3B.7-2: Construction-Related Erosion. Construction activities during implementation of the Off-site Water Facility Alternatives would involve grading and movement of earth in soils subject to wind and water erosion hazard.	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** direct PS & no indirect

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A: Implement Mitigation Measures 3B.9-1a, 3B.9-1b, 3B.9-1c, 3B.9-3a, and 3B.9-3b.

Implementation: City of Folsom Utilities Department

Timing: Prior to start of construction

Enforcement:
1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For the off-site water facilities within Unincorporated Sacramento County or the City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.

Significance after Mitigation: less than significant

3B.7-3: Unstable Geologic Conditions. The Off-site Water Facility Alternatives could be located on a geologic unit or soil that is unstable, or that could become unstable as a result of the Off-site Water Facilities.	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** direct & indirect PS

PA, & Alternatives 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A: Implement Mitigation Measures 3B.7-1a and 3B.7-1b.

Implementation: City of Folsom Utilities Department

Timing: Prior to completion of engineering plans for all Off-site Water Facilities

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
Enforcement: 1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the off-site water facilities within Unincorporated Sacramento County or the City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department. ***Significance after Mitigation: less than significant***		
3B.7-4: Exposure to Potential Hazards from Problematic Soils. The Off-site Water Facilities could encounter expansive or corrosive soils thereby subjecting related structures to potential risk of failure.	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** direct PS & no indirect
NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A: Implement Mitigation Measures 3B.7-1a. **Mitigation Measure 3B.7-4: Implement Corrosion Protection Measures.** As determined appropriate by a licensed geotechnical or civil engineer, the City shall ensure that all underground metallic fittings, appurtenances, and piping include a cathodic protection system to protect these facilities from corrosion. Implementation: City of Folsom Utilities Department Timing: Prior to completion of engineering plans for all Off-site Water Facilities Enforcement: 1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the off-site water facilities within Unincorporated Sacramento County or the City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department. ***Significance after Mitigation: less than significant***		
3B.7-5: Possible Damage of or Destruction to of Previously Unknown Unique Paleontological Resources during Construction-Related Activities. Construction of the Off-site Water Facility Alternatives could directly or indirectly destroy a unique paleontological resource or site.	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** direct PS & no indirect **NWF:** no impacts
NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A: Mitigation Measure 3B.7-5: Conduct Construction Personnel Education, Stop Work if Paleontological Resources are Discovered, Assess the Significance of the Find, and Prepare and Implement a Recovery Plan as Required. To minimize potential adverse impacts on previously unknown potentially unique, scientifically important paleontological resources, the City shall implement appropriate measures during construction of the Offsite Water Facility improvements. These measures shall be required for construction activities at the following locations: (1) Grant Line Road, south of SR 16; (2) Florin road, east of Excelsior Road; (3) Gerber Road, east of Excelsior Road; (4) White Rock Road, east of Prairie City Road; and (5) Prairie City Road and shall include:		

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CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

B (Beneficial) NI (No impact) LTS (Less than significant) PS (Potentially significant) S (Significant) SU (Significant and unavoidable)

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance

Mitigation

- Before the start of any earthmoving activities for any project phase in the Riverbank Formation, the project applicant(s) shall retain a qualified paleontologist or archaeologist to train all construction personnel involved with earthmoving activities, including the site superintendent, regarding the possibility of encountering fossils, the appearance and types of fossils likely to be seen during construction, and proper notification procedures should fossils be encountered.
- If paleontological resources are discovered during earthmoving activities, the construction crew shall immediately cease work in the vicinity of the find and notify Sacramento County Planning and Community Development Department. The project applicant(s) shall retain a qualified paleontologist to evaluate the resource and prepare a recovery plan in accordance with Society of Vertebrate Paleontology guidelines (1996). The recovery plan may include, but is not limited to, a field survey, construction monitoring, sampling and data recovery procedures, museum storage coordination for any specimen recovered, and a report of findings. Recommendations in the recovery plan that are determined by the County to be necessary and feasible shall be implemented before construction activities can resume at the site where the paleontological resources were discovered.

Implementation: City of Folsom Utilities Department

Timing: During earthmoving activities in the Roverbank, Ione, and Mehrten Formations as shown in Wagner et al, 1981.

Enforcement:
1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For the off-site water facilities within Unincorporated Sacramento County or the City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.

Significance after Mitigation: less than significant

3A.8 HAZARDS AND HAZARDOUS MATERIALS - LAND

3A.8-1: Accidental Spill from Routine Transport, Use, or Disposal of Hazardous Materials. Accidental spills of hazardous materials in the SPA could result during routine transport, use, or disposal activities.

ON-SITE
NP: direct & indirect LTS
ON- & OFF-SITE
NCP, PP, RIM, CD, RHD: direct & indirect LTS

ON-SITE
NP: No mitigation measures are required.
ON- & OFF-SITE
NCP, PP, RIM, CD, RHD: No mitigation measures are required.

Significance after Mitigation: less than significant

NP (No Action/No Project) NCP (No USACE Permit) PP (Proposed Project) RIM (Resource Impact Minimization)
CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

3A.8-2: Potential Human Health Hazards from Possible Exposure of Existing On-site Hazardous Materials. Construction workers and future residents could be exposed to hazardous materials known to exist within the SPA.

ON-SITE
NP: (ACM, lead paint, PCBs) direct LTS, no indirect; (mines and mining chemicals) direct significant, no indirect
ON- & OFF-SITE
NCP, PP, RIM, CD, RHD: direct PS, no indirect

ON-SITE
NP: No mitigation measures are required.

ON- & OFF-SITE
NCP, PP, RIM, CD, RHD: Complete Investigations Related to the Extent to Which Soil and/or Groundwater May Have Been Contaminated in Areas Not Covered by the Phase I and II Environmental Site Assessments and Implement Required Measures. The project applicant(s) of all project phases shall conduct Phase I Environmental Site Assessments (where an Phase I has not been conducted), and if necessary, Phase II Environmental Site Assessments, and/or other appropriate testing for all areas of the SPA and include, as necessary, analysis of soil and/or groundwater samples for the potential contamination sites that have not yet been covered by previous investigations (as shown in Exhibit 3A.8-1) before construction activities begin in those areas. Recommendations in the Phase I and II Environmental Site Assessments to address any contamination that is found shall be implemented before initiating ground-disturbing activities in these areas.

The project applicant(s) shall implement the following measures before ground-disturbing activities to reduce health hazards associated with potential exposure to hazardous substances:

- Prepare a plan that identifies any necessary remediation activities appropriate for proposed on- and off-site uses, including excavation and removal of on-site contaminated soils, redistribution of clean fill material in the SPA, and closure of any abandoned mine shafts. The plan shall include measures that ensure the safe transport, use, and disposal of contaminated soil and building debris removed from the site. In the event that contaminated groundwater is encountered during site excavation activities, the contractor shall report the contamination to the appropriate regulatory agencies, dewater the excavated area, and treat the contaminated groundwater to remove contaminants before discharge into the sanitary sewer system. The project applicant(s) shall be required to comply with the plan and applicable Federal, state, and local laws. The plan shall outline measures for specific handling and reporting procedures for hazardous materials and disposal of hazardous materials removed from the site at an appropriate off-site disposal facility.
- Notify the appropriate Federal, state, and local agencies if evidence of previously undiscovered soil or groundwater contamination (e.g., stained soil, odorous groundwater) is encountered during construction activities. Any contaminated areas shall be remediated in accordance with recommendations made by the Sacramento County Environmental Management Department, Central Valley RWQCB, DTSC, and/or other appropriate Federal, state, or local regulatory agencies.
- Obtain an assessment conducted by PG&E and SMUD pertaining to the contents of any existing pole-mounted transformers located in the SPA. The assessment shall determine whether existing on-site electrical transformers contain PCBs and whether there are any records of spills from such equipment. If equipment containing PCB is identified, the maintenance and/or disposal of the transformer shall be subject to the regulations of the Toxic Substances Control Act under the authority of the Sacramento County Environmental Health Department.

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., Sacramento County). Implementation: Project applicant(s) of all project phases. Timing: Before and during earthmoving activities Enforcement: 1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the off-site detention basin west of Prairie City Road: Sacramento County Environmental Management Department. 3. Other regulatory agencies, such as California Department of Toxic Substances Control, or Central Valley Regional Water Quality Control Board, as appropriate. **Mitigation Measure:** Implement Mitigation Measure 3A.9-1 contained in Section 3A.9, "Hydrology and Water Quality - Land" [Acquire Appropriate Regulatory Permits and Prepare and Implement SWPPP and BMPs] ***Significance after Mitigation: less than significant***		
3A.8-3: Potential Development Constraints Due to the Listing on the Cortese List. The SPA contains Area 40, part of the Aerojet Superfund site, which has the potential to create a hazard to public health or the environment. Ongoing remediation activities could delay or limit project development on or near the site of those remediation activities.	Land	**ON-SITE** **NP:** no direct or indirect **ON- & OFF-SITE** **NCP, PP, RIM, CD, RHD:** direct PS, no indirect
ON-SITE **NP:** No mitigation measures are required. **ON- & OFF-SITE** **NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.8-3a: Require the Project Applicant(s) to Cooperate with Aerojet and Regulatory Agencies to Preserve, Modify, or Close Existing Groundwater Monitoring Wells.** The project applicant(s) for all project phase(s) that would occur in or adjacent to the Area 40 boundary shall submit copies of tentative maps for residential subdivisions and for nonresidential uses to Aerojet, DTSC, and the Central Valley RWQCB or any successor in interest for review and approval. Aerojet, DTSC, and the Central Valley RWQCB or any successor shall work with the project applicant(s) to establish the preservation, modification, or closure of existing groundwater monitoring wells. If necessary, Aerojet, or any successor may purchase lots from the project applicant(s) to maintain access to monitoring wells. Development shall not proceed within the Area 40 boundary or on lands used for groundwater monitoring and other remediation activities until DTSC and the Central Valley RWQCB have approved Aerojet's or a successor's plan for well preservation, modification, or closure. The project applicant(s) for activities related to the off-site detention basin located outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) with Sacramento County.		

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CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

Implementation: Project applicants(s) for activities that would occur in the Area 40 boundary or on areas used for groundwater monitoring and other remediation activities.

Timing: Ongoing to the satisfaction of DTSC and the Central Valley RWQCB.

Enforcement:
1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For the off-site detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.

Mitigation Measure 3A.8-3b: Coordinate Development Activities to Avoid Interference with Remediation Activities. The project applicant(s) for all project phases that would occur in or adjacent to the Area 40 boundary shall provide notice to Aerojet or any successor in interest and DTSC, the Central Valley RWQCB, and the City of Folsom of the location, nature, and duration of construction activities least 30 days before construction activities begin in areas on or near property with current or planned remediation activities (Area 40). Remedial actions, as required by DTSC, RWQCB, and/or the EPA, may include, but are not limited to:

- deed restrictions on land and groundwater use;
- requirements for building ventilation, heating, and air conditioning design;
- monitoring;
- installation of vertical barriers;
- biological, chemical, and/or physical treatment;
- extraction, and/or
- pump and treat activities.

Before the approval of grading plans which include areas within the Area 40 boundary or the off-site detention basin, the project applicant(s) shall work with Aerojet, DTSC, and the Central Valley RWQCB or any successor to schedule the timing of construction activities to prevent potential conflicts with remediation activities.

The project applicant(s) for activities related to the off-site detention basin located outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) with Sacramento County.

Implementation: Project applicant(s) for activities within the Area 40 boundary or on lands used for monitoring or other remediation-related activities.

Timing: Before the approval of grading plans and during construction activities within the Area 40 boundary, off-site detention basin, or on lands used for monitoring or other remediation-related activities.

Enforcement:
1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For the off-site detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.
3. California Department of Toxic Substances Control, Central Valley Regional Water Quality Control Board, Aerojet General Corporation, as appropriate.

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

Mitigation Measure 3A.8-3c: Provide Written Notification to the City that DTSC-Required Notification Obligations and/or Easements Have Been Fulfilled to Ensure that Construction Activities Do Not Interfere with Remedial Actions.

Pursuant to its oversight over investigations of hazardous substances and determination of remedial action, DTSC establishes, as appropriate, deed restrictions (e.g., restrictions on future groundwater uses or future land uses) or easements (e.g., continued access to groundwater wells and pipelines) on property with associated notice requirements. The project applicant(s) for all such affected project activities, located within the Area 40 boundary, the off-site detention basin, or lands subject to monitoring or other remediation activities shall provide notification in writing to the City (or Sacramento County for the off-site detention basin) that said required DTSC notification obligations have been fulfilled. Evidence of the method of notification required by DTSC shall be submitted to the City before approval of tentative maps or improvement plans.

The project applicant(s) for such affected project activities shall coordinate with the City to include this provision as part of tentative map approval within the Area 40 boundary or lands subject to monitoring or other remediation activities. The project applicant(s) shall coordinate with Sacramento County for such affected project activities pertaining to the off-site detention basin.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., Sacramento County).

Implementation: Project applicant(s) for activities that would occur in the Area 40 boundary or on areas used for groundwater monitoring and other remediation activities.

Timing: Before approval of final maps and/or issuance of permits for sales trailers and model homes within the Area 40 boundary, the off-site detention basin, or lands subject to monitoring or other remediation activities.

Enforcement:
1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For the off-site detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.

Significance after Mitigation: less than significant

3A.8-4: Potential Interference with an Adopted Emergency Response or Emergency Evacuation Plan. Development of the SPA could interfere with adopted emergency plans.	Land	**ON- & OFF-SITE** **NP, NCP, PP, RIM, CD, RHD:** direct LTS, no indirect

NP, NCP, PP, RIM, CD, RHD: No mitigation measures are required.

Significance after Mitigation: less than significant

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CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.8-5: Potential for Blast-Related Injury to Construction Workers and the General Public. Development in the SPA would entail the use of explosive materials as part of grading activities in the eastern portion of the SPA that could result in injury to construction workers and the general public.	Land	**ON- & OFF-SITE** **NP, NCP, PP, RIM, CD, RHD:** direct PS, no indirect
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.8-5: Prepare and Implement a Blasting Safety Plan in Consultation with a Qualified Blaster. To reduce the potential for accidental injury or death related to blasting, contractors whose work on the SPA will include blasting shall prepare and implement a blasting safety plan. This plan shall be created in coordination with a qualified blaster, as defined by the Construction Safety and Health Outreach Program, Subpart U, Section 1926.901, and distributed to all appropriate members of construction teams. The plan shall apply to project applicant(s) of all project phases in which blasting would be employed. The plan shall include, but is not limited to: ▸ storage locations that meet ATF standards contained in 27 CFR Part 55; ▸ safety requirements for workers (e.g., daily safety meetings, personal protective equipment); ▸ an accident management plan that considers misfires (i.e. explosive fails to detonate), unexpected ignition, and flyrock; and ▸ measures to protect surrounding property (e.g., netting, announcement of dates of expected blasting, barricades, and audible and visual warnings). Upon completion of a blasting safety plan, the project applicant(s) contractor shall secure any required permits from the City of Folsom Fire Department and the El Dorado County Sheriff's Department for blasting activities in Sacramento County and El Dorado County, respectively. Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado County). Implementation: Project applicant(s) and contractor(s) of all project phases in which blasting would be employed. Timing: At the submission of tentative map applications. Monitoring: 1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Fire Department. 2. For the off-site roadway connections in El Dorado County: El Dorado County Sheriff's Department. ***Significance after Mitigation: less than significant***		
3A.8-6: Possible Exposure of People to Electric and Magnetic Fields. Residential developments and/or schools would be located near high voltage transmission lines and radio towers, which could expose the general public to EMFs.	Land	**ON-SITE** **NP:** direct LTS, no indirect **NCP, PP, RIM, CD, RHD:** direct PS, no indirect **OFF-SITE** No direct or indirect
ON-SITE **NP:** No mitigation measures are required.		

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

NCP, PP, RIM, CD, RHD: Mitigation Measure P3A.8-6: Prudent Avoidance and Notification of EMF Exposure. A policy of "prudent avoidance" to EMF exposure shall be incorporated into planning activities for residential developments near the transmission lines, which shall include consideration of up-to-date information on potential hazards of EMF, especially information from the California Public Utilities Commission.

In addition, potential purchasers of properties near the transmission lines shall be made aware of the controversy surrounding EMF exposure. The California Department of Real Estate shall be requested to insert an appropriate disclosure statement into the applicant's final Subdivision Public Report application, which shall be provided to purchasers of properties within 100 feet from the 100-115kV power line easement, or within 150 feet from the 220-230 kV power line easement.

Implementation: Project applicant(s) of all project phases in the vicinity of high-tension transmission lines.

Timing: At the submission of tentative map applications.

Enforcement: 1. City of Folsom Community Development Department.
2. Folsom Cordova Unified School District.

OFF-SITE

NCP, PP, RIM, CD, RHD: No mitigation measures are required.

Significance after Mitigation: less than significant

3A.8-7: Potential for Public Health Hazards from Mosquitoes Associated with Project Water Features. Project implementation would include construction of 16 on-site detention basins and 1 off-site detention basin, which could attract mosquitoes and other waterborne vectors, thereby potentially creating a public health hazard.	Land	**ON-SITE** **NP:** no direct or indirect **ON- & OFF-SITE** **NCP, PP, RIM, CD, RHD:** direct PS, no indirect

ON-SITE

NP: No mitigation measures are required.

ON- & OFF-SITE

NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.8-7: Prepare and Implement a Vector Control Plan in Consultation with the Sacramento-Yolo Mosquito and Vector Control District. To ensure that operation and design of the stormwater system, including multiple planned detention basins, is consistent with the recommendations of the Sacramento-Yolo Mosquito and Vector Control District regarding mosquito control, the project applicant(s) of all project phases shall prepare and implement a Vector Control Plan. This plan shall be prepared in coordination with the Sacramento-Yolo Mosquito and Vector Control District and shall be submitted to the City for approval before issuance of the grading permit for the detention basins under the City's jurisdiction. For the off-site detention basin, the plan shall be submitted to Sacramento County for approval before issuance of the grading permit for the off-site detention basin. The plan shall incorporate specific measures deemed sufficient by the City to minimize public health risks from mosquitoes, and as contained within the Sacramento-Yolo Mosquito and Vector Control District BMP Manual (Sacramento-Yolo Mosquito and Vector Control District 2008). The plan shall include, but is not limited to, the following components:

- Description of the project.

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

- Description of detention basins and all water features and facilities that would control on-site water levels.
- Goals of the plan.
- Description of the water management elements and features that would be implemented, including:
  - BMPs that would implemented on-site;
  - public education and awareness;
  - sanitary methods used (e.g., disposal of garbage);
  - mosquito control methods used (e.g., fluctuating water levels, biological agents, pesticides, larvacides, circulating water); and
  - stormwater management (consistent with Stormwater Management Plan).
- Long-term maintenance of the detention basins and all related facilities (e.g., specific ongoing enforceable conditions or maintenance by a homeowner's association).

To reduce the potential for mosquitoes to reproduce in the detention basins, the project applicant(s) shall coordinate with the Sacramento-Yolo Mosquito and Vector Control District to identify and implement BMPs based on their potential effectiveness for SPA conditions. Potential BMPs could include, but are not limited to, the following:

- build shoreline perimeters as steep and uniform as practicable to discourage dense plant growth;
- perform routine maintenance to reduce emergent plant densities to facilitate the ability of mosquito predators (i.e., fish) to move throughout vegetated area;
- design distribution piping and containment basins with adequate slopes to drain fully and prevent standing water. The design slope should take into consideration buildup of sediment between maintenance periods. Compaction during grading may also be needed to avoid slumping and settling;
- coordinate cleaning of catch basins, drop inlets, or storm drains with mosquito treatment operations;
- enforce the prompt removal of silt screens installed during construction when no longer needed to protect water quality;
- if the sump, vault, or basin is sealed against mosquitoes, with the exception of the inlet and outlet, submerge the inlet and outlet completely to reduce the available surface area of water for mosquito egg–laying (female mosquitoes can fly through pipes); and
- design structures with the appropriate pumping, piping, valves, or other necessary equipment to allow for easy dewatering of the unit if necessary (Sacramento Yolo Mosquito and Vector Control District 2008).

The project applicant(s) of the project phase containing the off-site detention basin shall coordinate mitigation for the off-site with the affected oversight agency (i.e., Sacramento County).

Implementation: Project applicant(s) of all project phases containing water features.

Timing: Before issuance of grading permits for the project water features.

Enforcement:
1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For the off-site detention basin west of Prairie City Road: Sacramento-Yolo Mosquito and Vector Control District.

Significance after Mitigation: less than significant

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CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

B (Beneficial) NI (No impact) LTS (Less than significant) PS (Potentially significant) S (Significant) SU (Significant and unavoidable)

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3B.8 HAZARDS AND HAZARDOUS MATERIALS – WATER		
3B.8-1: Accidental Spill from Routine Transport, Use, or Disposal of Hazardous Materials. Accidental spills of hazardous materials could result during routine transport, use, or disposal activities as part of the implementation of the Off-site Water Facility Alternatives.	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** direct & indirect PS (*construction*), direct PS & no indirect (*operations*)

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A: Mitigation Measure 3B.8-1a: Transport, Store, and Handle Construction-Related Hazardous Materials in Compliance with Relevant Regulations and Guidelines.

The City shall ensure, through the enforcement of contractual obligations, that all contractors transport, store, and handle construction-related hazardous materials in a manner consistent with relevant regulations and guidelines, including those recommended and enforced by Caltrans, Central Valley RWQCB, local fire departments, and the County environmental health department.

Recommendations shall include as appropriate transporting and storing materials in appropriate and approved containers, maintaining required clearances, and handling materials using applicable Federal, state and/or local regulatory agency protocols. In addition, all precautions required by the Central Valley RWQCB-issued NPDES construction activity stormwater permits shall be taken to ensure that no hazardous materials enter any nearby waterways.

In the event of a spill, the City shall ensure, through the enforcement of contractual obligations, that all contractors immediately control the source of any leak and immediately contain any spill utilizing appropriate spill containment and countermeasures. If required by the local fire departments, the local environmental health department, or any other regulatory agency, contaminated media shall be collected and disposed of at an off-site facility approved to accept such media.

The storage, handling, and use of the construction-related hazardous materials shall be in accordance with applicable Federal, state, and local laws. Construction-related hazardous materials and hazardous wastes (e.g., fuels and waste oils) shall be stored away from stream channels and steep banks to prevent these materials from entering surface waters in the event of an accidental release. These materials shall be kept at sufficient distance (at least 500 feet) from nearby residences or other sensitive land uses. This includes materials stored for expected use, materials in equipment and vehicles, and waste materials.

1, 1A, 3, 3A, 4, & 4A: Mitigation Measure 3B.8-1b: Prepare and Implement a Hazardous Materials Management Plan.

The City shall prepare a Hazardous Materials Management Plan (HMMP) for the proposed WTP. The HMMP shall provide for safe storage, containment, and disposal of chemicals and hazardous materials related to WTP operations, including waste materials. The plan shall include, but shall not be limited to, the following:

- a description of hazardous materials and hazardous wastes;
- a description of handling, transport, treatment, and disposal procedures, as relevant for each hazardous material or hazardous waste;
- preparedness, prevention, contingency, and emergency procedures, including emergency contact information;
- A description of personnel training including, but not limited to: (1) recognition of existing or potential hazards resulting from accidental spills or other releases; (2) implementation of evacuation, notification, and other emergency response procedures; (3) management, awareness, and handling of hazardous materials and hazardous wastes, as required by their level of responsibility;

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
▸ Instructions on keeping Materials Safety and Data Sheets (MSDS) on-site for each on-site, hazardous chemical; ▸ Identification of the locations of hazardous material storage areas, including temporary storage areas, which shall be equipped with secondary containment sufficient in size to contain the volume of the largest container or tank; and ▸ A description of equipment maintenance procedures. The HMMP shall be made a condition of contractual obligation and shall be available for review by construction inspectors and implementation compliance shall be monitored. Implementation: City of Folsom Utilities Department Timing: Prior to construction and operation of all Off-site Water Facilities Enforcement: 1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the off-site water facilities constructed within Sacramento County or the City of Rancho Cordova: Sacramento County Environmental Management Department. 3. Other regulatory agencies, such as California Department of Toxic Substances Control, or Central Valley Regional Water Quality Control Board, as appropriate. ***Significance after Mitigation: less than significant***		
3B.8-2: Create Accident Conditions Involving Potential Release of Hazardous Materials. Construction and operation of the Off-site Water Facilities could create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment.	Water	**NCP, PA, 1, 1A, 3, 3A, 4, & 4A:** direct PS & no indirect (*construction & operations*) **2, 2A, 2B:** direct LTS & no indirect (*transport & use*), direct PS & no indirect (*construction*)
NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A: Implement Mitigation Measures 3B.8-1b, 3B.16-3a, and 3B.16-3b. ***Significance after Mitigation: less than significant***		
3B.8-3: Introduction of Drinking Water Contaminants. Operation of the Off-site Water Facility Alternatives would not create a significant public health risk through the introduction of contaminants into a drinking water supply at concentrations with known adverse health effects.	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** no direct & indirect LTS
PA & Alternatives 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A: No mitigation measures are required. ***Significance after Mitigation: less than significant***		

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CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

B (Beneficial) NI (No impact) LTS (Less than significant) PS (Potentially significant) S (Significant) SU (Significant and unavoidable)

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3B.8-4: Use of Hazardous Materials within One-Quarter Mile of Schools. Operation of the Off-site Water Facilities could emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.	Water	**NCP, PA, 1, 1A:** no direct or indirect **2, 2A, 2B, 3, & 3A:** no direct & indirect PS **4 & 4A:** no direct or indirect (*no educational facilities*), no direct & indirect PS (*w/in 1/4m of schools*) **NWF:** no direct or indirect
NCP, PA, 1, 1A: No mitigation measures are required. **2, 2A, 2B, 3, 3A, 4, & 4A:** Implement Mitigation Measure 3B.8-1a and 3B.8-1b. Implementation: City of Folsom Utilities Department Timing: Prior to construction and operation of all Off-site Water Facilities Enforcement: 1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the off-site water facilities constructed within Sacramento County or the City of Rancho Cordova: Sacramento County Environmental Management Department. 3. Other regulatory agencies, such as California Department of Toxic Substances Control, or Central Valley Regional Water Quality Control Board, as appropriate ***Significance after Mitigation: less than significant***		
3B.8-5: Create a Significant Hazard to the Public or the Environment. Construction of the Off-site Water Facilities could encounter one or more sites listed as containing hazardous materials or wastes and, as a result, could create a significant hazard to the public or the environment.	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** no direct & indirect PS
NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A: Mitigation Measure 3B.8-5a: Conduct Phase 1 Environmental Site Assessment for Selected Alignment. Prior to construction, the City shall conduct a Phase 1 Environmental Site Assessment according to American Society for Testing and Materials (ASTM) protocol for the selected conveyance pipeline alignment, pump station, well, and WTP site. If any hazardous materials or waste sites are identified during the Phase 1 Environmental Site Assessment, the City shall implement Mitigation Measure 3.8-5b. Implementation: City of Folsom Utilities Department Timing: Prior to construction of all Off-site Water Facilities Enforcement: 1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the off-site water facilities constructed within Sacramento County or the City of Rancho Cordova: Sacramento County		

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
Environmental Management Department. 3. Other regulatory agencies, such as California Department of Toxic Substances Control, or Central Valley Regional Water Quality Control Board, as appropriate. **Mitigation Measure 3B.8-5b: Develop and Implement a Remediation Plan.** If determined necessary to mitigate for potential hazards resulting from disturbance of existing contaminated areas, the extent of contamination from hazardous materials sites within or adjacent to the Off-site Water Facilities construction area shall be delineated during final design. Disturbance to contaminated areas during Off-site Water Facilities construction shall be avoided, or any work done within contaminated areas shall be undertaken in compliance with standards approved by the DTSC or Sacramento County Department of Environmental Health to ensure that hazardous materials will not be released as a result of the ground disturbance. Additionally, if unidentified contaminated soil or groundwater are encountered, or if suspected contamination is encountered during any construction activities, work shall be halted in the area of potential exposure, and the type and extent of contamination shall be identified. A qualified professional, in consultation with appropriate regulatory agencies, will then develop and implement a plan to remediate the contamination and properly dispose of the contaminated material. Implementation: City of Folsom Utilities Department Timing: Prior to construction of all Off-site Water Facilities Enforcement: 1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the off-site water facilities constructed within Sacramento County or the City of Rancho Cordova: Sacramento County Environmental Management Department. 3. Other regulatory agencies, such as California Department of Toxic Substances Control, or Central Valley Regional Water Quality Control Board, as appropriate. ***Significance after Mitigation: less than significant***		
3B.8-6: Impair or Interfere with an Adopted Emergency Response Plans or Emergency Evacuation Plans. Implementation of the Off-site Water Facilities would impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. **NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** direct LTS & no indirect

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3B.8-7: Exposure to Wildland Fire Hazards. Implementation of the Off-site Water Facilities could expose people or structures to a significant risk of loss, injury or death involving wildland fires.	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** direct PS & no indirect
NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A: Mitigation Measure 3B.8-7a: Keep Construction Area Clear of Combustible Materials. The City shall ensure, through the enforcement of contractual obligations that during construction, staging areas, welding areas, or areas slated for development using spark-producing equipment shall be cleared of dried vegetation or other materials that could serve as fire fuel. The contractor shall keep these areas clear of combustible materials in order to maintain a firebreak. Any construction equipment that normally includes a spark arrester shall be equipped with an arrester in good working order. This includes, but is not limited to, vehicles, heavy equipment, and chainsaws. Implementation: City of Folsom Utilities Department Timing: Prior to construction and operation of all Off-site Water Facilities Enforcement: 1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the off-site water facilities constructed within Sacramento County or the City of Rancho Cordova: Sacramento County Fire Department		
Mitigation Measure 3B.8-7b: Provide Accessible Fire Suppression Equipment. Work crews shall be required to carry or have sufficient fire suppression equipment to ensure that any fire resulting from construction activities is immediately extinguished. All off-road equipment using internal combustion engines shall be equipped with spark arrestors. Implementation: City of Folsom Utilities Department Timing: Prior to construction and operation of all Off-site Water Facilities Enforcement: 1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the off-site water facilities constructed within Sacramento County or the City of Rancho Cordova: Sacramento County Fire Department. ***Significance after Mitigation: less than significant***		

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.9 HYDROLOGY AND WATER QUALITY - LAND		
3A.9-1: Potential Temporary, Short-Term Construction-Related Drainage and Water Quality Effects. Construction activities during project implementation would involve extensive grading and movement of earth, which would substantially alter on-site drainage patterns and could generate sediment, erosion, and other nonpoint source pollutants in on-site stormwater that could drain to off-site areas and degrade local water quality.	Land	**ON- & OFF-SITE** **NP:** direct & indirect LTS **NCP, PP, RIM, CD, RHD:** direct & indirect significant

NP: No mitigation measures are required.

NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.9-1: Acquire Appropriate Regulatory Permits and Prepare and Implement SWPPP and BMPs. Prior to the issuance of grading permits, the project applicant(s) of all projects disturbing one or more acres (including phased construction of smaller areas which are part of a larger project) shall obtain coverage under the SWRCB's NPDES stormwater permit for general construction activity (Order 2009-0009-DWQ), including preparation and submittal of a project-specific SWPPP at the time the NOI is filed. The project applicant(s) shall also prepare and submit any other necessary erosion and sediment control and engineering plans and specifications for pollution prevention and control to Sacramento County, City of Folsom, El Dorado County (for the off-site roadways into El Dorado Hills under the Proposed Project Alternative). The SWPPP and other appropriate plans shall identify and specify:

- the use of an effective combination of robust erosion and sediment control BMPs and construction techniques accepted by the local jurisdictions for use in the project area at the time of construction, that shall reduce the potential for runoff and the release, mobilization, and exposure of pollutants, including legacy sources of mercury from project-related construction sites. These may include but would not be limited to temporary erosion control and soil stabilization measures, sedimentation ponds, inlet protection, perforated riser pipes, check dams, and silt fences
- the implementation of approved local plans, non-stormwater management controls, permanent post-construction BMPs, and inspection and maintenance responsibilities;
- the pollutants that are likely to be used during construction that could be present in stormwater drainage and nonstormwater discharges, including fuels, lubricants, and other types of materials used for equipment operation;
- spill prevention and contingency measures, including measures to prevent or clean up spills of hazardous waste and of hazardous materials used for equipment operation, and emergency procedures for responding to spills;
- personnel training requirements and procedures that shall be used to ensure that workers are aware of permit requirements and proper installation methods for BMPs specified in the SWPPP; and
- the appropriate personnel responsible for supervisory duties related to implementation of the SWPPP.

Where applicable, BMPs identified in the SWPPP shall be in place throughout all site work and construction/demolition activities and shall be used in all subsequent site development activities. BMPs may include, but are not limited to, such measures as those listed below.

- Implementing temporary erosion and sediment control measures in disturbed areas to minimize discharge of sediment into nearby drainage conveyances, in compliance with state and local standards in effect at the time of construction. These measures may include silt fences, staked straw bales or wattles,

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Impact	Land/Water/GPA	Significance
Mitigation		

sediment/silt basins and traps, geofabric, sandbag dikes, and temporary vegetation.

- Establishing permanent vegetative cover to reduce erosion in areas disturbed by construction by slowing runoff velocities, trapping sediment, and enhancing filtration and transpiration.
- Using drainage swales, ditches, and earth dikes to control erosion and runoff by conveying surface runoff down sloping land, intercepting and diverting runoff to a watercourse or channel, preventing sheet flow over sloped surfaces, preventing runoff accumulation at the base of a grade, and avoiding flood damage along roadways and facility infrastructure.

A copy of the approved SWPPP shall be maintained and available at all times on the construction site.

For those areas that would be disturbed as part of the U.S. 50 interchange improvements, Caltrans shall coordinate with the development and implementation of the overall project SWPPP, or develop and implement its own SWPPP specific to the interchange improvements, to ensure that water quality degradation would be avoided or minimized to the maximum extent practicable.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties, or Caltrans).

Implementation: Project applicant(s) during all project phases and on-site and off-site elements.

Timing: Submittal of the State Construction General Permit NOI and SWPPP (where applicable) and development and submittal of any other locally required plans and specifications before the issuance of grading permits for all on-site project phases and off-site elements and implementation throughout project construction.

Enforcement:

1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For the two roadway connections in El Dorado Hills: El Dorado County Department of Transportation.
3. For the detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.
4. For the U.S. 50 interchange improvements: Caltrans.
5. For all construction activities subject to the state's Construction General Permit and violators of local ordinances referred to the state for enforcement: Central Valley Regional Water Quality Control Board.

Significance after Mitigation: less than significant

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

3A.9-2: Potential Increased Risk of Flooding and Hydromodification from Increased Stormwater Runoff. Project implementation would increase the amount of impervious surfaces on the SPA, thereby increasing surface runoff. This increase in surface runoff would result in an increase in both the total volume and the peak discharge rate of stormwater runoff, and therefore could result in greater potential for on- and off-site flooding.

Land

ON- & OFF-SITE
NP: direct & indirect LTS
NCP, PP, RIM, CD, RHD: direct & indirect PS

NP: No mitigation measures are required.

NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.9-2: Prepare and Submit Final Drainage Plans and Implement Requirements Contained in Those Plans. Before the approval of grading plans and building permits, the project applicant(s) of all project phases shall submit final drainage plans to the City, and to El Dorado County for the off-site roadway connections into El Dorado Hills, demonstrating that off-site upstream runoff would be appropriately conveyed through the SPA, and that project-related on-site runoff would be appropriately contained in detention basins or managed with through other improvements (e.g., source controls, biotechnical stream stabilization) to reduce flooding and hydromodfication impacts.

The plans shall include, but not be limited to, the following items:

- an accurate calculation of pre-project and post-project runoff scenarios, obtained using appropriate engineering methods, that accurately evaluates potential changes to runoff, including increased surface runoff;
- runoff calculations for the 10-year and 100-year (0.01 AEP) storm events (and other, smaller storm events as required) shall be performed and the trunk drainage pipeline sizes confirmed based on alignments and detention facility locations finalized in the design phase;
- a description of the proposed maintenance program for the on-site drainage system;
- project-specific standards for installing drainage systems;
- City and El Dorado County flood control design requirements and measures designed to comply with them;

  Implementation of stormwater management BMPs that avoid increases in the erosive force of flows beyond a specific range of conditions needed to limit hydromodification and maintain current stream geomorphology. These BMPs will be designed and constructed in accordance with the forthcoming SSQP Hydromodification Management Plan (to be adopted by the RWQCB) and may include, but are not limited to, the following:

  - use of Low Impact Development (LID) techniques to limit increases in stormwater runoff at the point of origination (these may include, but are not limited to: surface swales; replacement of conventional impervious surfaces with pervious surfaces [e.g., porous pavement]; impervious surfaces disconnection; and trees planted to intercept stormwater);
  - enlarged detention basins to minimize flow changes and changes to flow duration characteristics;
  - bioengineered stream stabilization to minimize bank erosion, utilizing vegetative and rock stabilization, and inset floodplain restoration features that provide for enhancement of riparian habitat and maintenance of natural hydrologic and channel to floodplain interactions;
  - minimize slope differences between any stormwater or detention facility outfall channel with the existing receiving channel gradient to reduce flow

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

velocity; and

- minimize to the extent possible detention basin, bridge embankment, and other encroachments into the channel and floodplain corridor, and utilize open bottom box culverts to allow sediment passage on smaller drainage courses.

▸ The final drainage plan shall demonstrate to the satisfaction of the City of Folsom Community Development and Public Works Departments and El Dorado County Department of Transportation that 100-year (0.01 AEP) flood flows would be appropriately channeled and contained, such that the risk to people or damage to structures within or down gradient of the SPA would not occur, and that hydromodification would not be increased from pre-development levels such that existing stream geomorphology would be changed (the range of conditions should be calculated for each receiving water if feasible, or a conservative estimate should be used, e.g., an Ep of 1 ±10% or other as approved by the Sacramento Stormwater Quality Partnership and/or City of Folsom Public Works Department).

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with El Dorado County.

Implementation: Project applicant(s) during all on-site project phases and off-site elements.

Timing: Before approval of grading plans and building permits of all project phases.

Enforcement: 1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Public Works Department.
2. For the two roadway connections in El Dorado Hills: El Dorado County Department of Transportation.

Significance after Mitigation: less than significant

3A.9-3: Long-Term Water Quality and Hydrology Effects from Urban Runoff. Project implementation would convert a large area of undeveloped land to residential and commercial uses, thereby changing the amount and timing of potential long-term pollutant discharges in stormwater and other urban runoff to Alder Creek, Buffalo Creek, Coyote Creek, Carson Creek, and other on- and off-site drainages.	Land	**ON- & OFF-SITE** **NP:** direct & indirect LTS **NCP, PP, RIM, CD, RHD:** direct & indirect PS

NP: No mitigation measures are required.

NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.9-3: Develop and Implement a BMP and Water Quality Maintenance Plan. Before approval of the final small-lot subdivision map for all project phases, a detailed BMP and water quality maintenance plan shall be prepared by a qualified engineer retained by the project applicant(s) of all project phases. Drafts of the plan shall be submitted to the City of Folsom and El Dorado County for the off-site roadway connections into El Dorado Hills, for review and approval concurrently with development of tentative subdivision maps for all project phases. The plan shall finalize the water quality improvements and further detail the structural and nonstructural BMPs proposed for the project. The plan shall include the elements described below.

▸ A quantitative hydrologic and water quality analysis of proposed conditions incorporating the proposed drainage design features.

▸ Predevelopment and postdevelopment calculations demonstrating that the proposed water quality BMPs meet or exceed requirements established by the City of Folsom and including details regarding the size, geometry, and functional timing of storage and release pursuant to the '"Stormwater Quality Design

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

Manual for Sacramento and South Placer Regions" ([SSQP 2007b] per NPDES Permit No. CAS082597 WDR Order No. R5-2008-0142, page 46) and El Dorado County's NPDES SWMP (County of El Dorado 2004).

- Source control programs to control water quality pollutants on the SPA, which may include but are limited to recycling, street sweeping, storm drain cleaning, household hazardous waste collection, waste minimization, prevention of spills and illegal dumping, and effective management of public trash collection areas.
- A pond management component for the proposed basins that shall include management and maintenance requirements for the design features and BMPs, and responsible parties for maintenance and funding.
- LID control measures shall be integrated into the BMP and water quality maintenance plan. These may include, but are not limited to:
  - surface swales;
  - replacement of conventional impervious surfaces with pervious surfaces (e.g., porous pavement);
  - impervious surfaces disconnection; and
  - trees planted to intercept stormwater.
- New stormwater facilities shall be placed along the natural drainage courses within the SPA to the extent practicable so as to mimic the natural drainage patterns. The reduction in runoff as a result of the LID configurations shall be quantified based on the runoff reduction credit system methodology described in "Stormwater Quality Design Manual for the Sacramento and South Placer Regions, Chapter 5 and Appendix D4" (SSQP 2007b) and proposed detention basins and other water quality BMPs shall be sized to handle these runoff volumes.

For those areas that would be disturbed as part of the U.S. 50 interchange improvements, it is anticipated that Caltrans would coordinate with the development and implementation of the overall project SWPPP, or develop and implement its own SWPPP specific to the interchange improvements, to ensure that water quality degradation would be avoided or minimized to the maximum extent practicable.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with El Dorado County and Caltrans.

Implementation: Project applicant(s) during all on-site project phases and off-site elements.

Timing: Prepare plans before the issuance of grading permits for all project phases and off-site elements and implementation throughout project construction.

Enforcement:
1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department and Public Works Department.
2. For the two roadway connections in El Dorado Hills: El Dorado County Department of Transportation.
3. For the U.S. 50 interchange improvements: Caltrans.

Significance after Mitigation: less than significant

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Impact	Land/Water/GPA	Significance
Mitigation		
3A.9-4: Potential Exposure of People or Structures to a Significant Risk of Flooding as a Result of the Failure of a Levee or Dam. The SPA is not in an area protected by levees and is not located within the Folsom Dam inundation zone; however, there are existing dams impounding water within and upstream of the SPA.	Land	**ON- & OFF-SITE** **NP:** direct & indirect LTS **NCP, PP, RIM, CD, RHD:** direct PS, no indirect
NP: No mitigation measures are required. **NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.9-4: Inspect and Evaluate Existing Dams Within and Upstream of the Project Site and Make Improvements if Necessary.** Prior to submittal to the City of tentative maps or improvement plans the project applicant(s) of all project phases shall perform conduct studies to determine the extent of inundation in the case of dam failure. If the studies determine potential exposure of people or structures to a significant risk of flooding as a result of the failure of a dam, the applicants(s) shall implement of any feasible recommendations provided in that study, potentially through drainage improvements, subject to the approval of the City of Folsom Public Works Department. Implementation: Project applicant(s) of all on-site project phases and off-site elements. Timing: Prior to submittal to the City of tentative maps or improvement plans. Enforcement: City of Folsom Public Works Department. ***Significance after Mitigation: less than significant***		
3A.9-5: Potential Effects on Groundwater Recharge. Shallow and deep percolation of rainwater and related runoff and consequent depth to groundwater could be affected locally by the development of additional impervious surfaces, which could limit infiltration and recharge.	Land	**ON- & OFF-SITE** **NP:** direct & indirect PS **NCP, PP, RIM, CD, RHD:** direct & indirect LTS
NP: No mitigation measures are required. **NCP, PP, RIM, CD, RHD:** No mitigation measures are required. ***Significance after Mitigation: less than significant***		
3A.9-6: Potential Effects on Groundwater Recharge. Shallow and deep percolation of rainwater and related runoff and consequent depth to groundwater could be affected locally by the development of additional impervious surfaces, which could limit infiltration and recharge.	Land	**ON- & OFF-SITE** **NP:** direct & indirect PS **NCP, PP, RIM, CD, RHD:** direct & indirect LTS
NP: No mitigation measures may be imposed. **NCP, PP, RIM, CD, RHD:** No mitigation measures are required. ***Significance after Mitigation: less than significant***		

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Impact	Land/Water/GPA	Significance
Mitigation		
3B.9 HYDROLOGY AND WATER QUALITY – WATER		
3B.9-1: Potential Temporary, Short-Term Construction-Related Drainage and Water Quality Effects. Construction of the Off-site Water Facilities could generate discharges to surface water resources that could potentially violate water quality standards or waste discharge requirements.	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** direct & indirect PS (construction-related water quality)

NCP, PA, 1, 1A, 3, 3A, 4, & 4A: Mitigation Measure 3B.9-1a: Acquire Appropriate Regulatory Permits and Prepare and Implement SWPPP and BMPs. The City shall prepare a SWPPP specific to the selected Off-site Water Facility Alternative and secure coverage under SWRCB's NPDES stormwater permit for general construction activity (Order 2009-0009-DWQ). The SWPPP shall identify specific actions and BMPs relating to the prevention of stormwater pollution from project-related construction sources by identifying a practical sequence for site restoration, BMP implementation, contingency measures, responsible parties, and agency contacts. The SWPPP shall reflect localized surface hydrological conditions and shall be reviewed and approved by the City prior to commencement of work and shall be made conditions of the contract with the contractor selected to build the Off-site Water Facilities. The SWPPP shall incorporate control measures in the following categories:

- soil stabilization and erosion control practices (e.g., hydroseeding, erosion control blankets, mulching, etc.;
- dewatering and/or flow diversion practices, if required (see Mitigation Measure 3B.9-1b);
- sediment control practices (temporary sediment basins, fiber rolls, etc.);
- temporary and post-construction on- and off-site runoff controls;
- special considerations and BMPs for water crossings, wetlands, drainages, and vernal pools;
- monitoring protocols for discharge(s) and receiving waters, with emphasis placed on the following water quality objectives: dissolved oxygen, floating material, oil and grease, pH, and turbidity;
- waste management, handling, and disposal control practices;
- corrective action and spill contingency measures;
- agency and responsible party contact information, and
- training procedures that shall be used to ensure that workers are aware of permit requirements and proper installation methods for BMPs specified in the SWPPP.

The SWPPP shall be prepared by a qualified SWPPP practitioner with BMPs selected to achieve maximum pollutant removal and represent the best available technology that is economically achievable. Emphasis for BMPs shall be placed on controlling discharges of oxygen-depleting substances, floating material, oil and grease, acidic or caustic substances or compounds, and turbidity. Performance and effectiveness of these BMPs shall be determined either by visual means where applicable (i.e., observation of above-normal sediment release), or by actual water sampling in cases where verification of contaminant reduction or elimination, (inadvertent petroleum release) as required to determine adequacy of the measure.

Implementation: City of Folsom Utilities Department

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CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

B (Beneficial) NI (No impact) LTS (Less than significant) PS (Potentially significant) S (Significant) SU (Significant and unavoidable)

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance

Mitigation

Timing: Development of the SWPPP prior to construction of all Off-site Water Facilities and implementation throughout construction.

Enforcement:
1. Central Valley Regional Water Quality Control Board.
2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
3. For improvements within unincorporated Sacramento County or City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.

Mitigation Measure 3B.9-1b: Properly Dispose of Hydrostatic Test Water and Construction Dewatering in Accordance with the Central Valley Regional Water Quality Control Board. All hydrostatic test water and construction dewatering shall be discharged to an approved land disposal area or drainage facility in accordance with Central Valley RWCQB requirements. The City or its construction contractor shall provide the Central Valley RWQCB with the location, type of discharge, and methods of treatment and monitoring for all hydrostatic test water discharges. Emphasis shall be placed on those discharges that would occur directly to surface water bodies.

Implementation: City of Folsom Utilities Department

Timing: Incorporation measures into SWPPP prior to construction and implementation throughout construction, as appropriate.

Enforcement:
1. Central Valley Regional Water Quality Control Board.
2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
3. For improvements within unincorporated Sacramento County or City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.

Mitigation Measure: Implement Mitigation Measures 3A.3-1a and 3A.3-1b.

Implementation: City of Folsom Utilities Department

Timing: Incorporation of measures into SWPPP prior to construction and implementation throughout construction.

Enforcement:
1. Central Valley Regional Water Quality Control Board.
2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
3. For improvements within unincorporated Sacramento County or City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.

2, 2A, 2B: Implement Mitigation Measure 3B.9-1a and 3B.9-1b.

Significance after Mitigation: less than significant

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3B.9-2: Exceedance of Surface Water Quality Standards during Operation. The operation of the Off-site Water Facilities could result in changes to the quality of surface water resources that could potentially violate water quality standards or waste discharge requests.	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** no direct & indirect LTS
NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A: No mitigation measures are required. ***Significance after Mitigation: less than significant***		
3B.9-3: Alteration of Drainage Patterns Resulting in Off-site Flooding and/or Erosion. The Off-site Water Facilities could result in the alteration of existing drainage patterns thereby increasing the rate or amount of surface runoff in a manner that could result in substantial flooding and/or erosion or siltation on- or off-site.	Water	**NCP, PA, 1, 1A, 3, 3A:** direct PS & no indirect **4, 4A:** direct & indirect PS **2, 2A, 2B:** direct & indirect LTS
NCP, PA, 1, 1A, 3, 3A, 4, & 4A: Mitigation Measure 3B.9-3a: Prepare and Implement Drainage Plan(s) for Structural Facilities. The City shall prepare a Drainage Plan for the selected Off-site Water Facility WTP and shall incorporate measures to maintain off-site runoff during peak conditions to pre-construction discharge levels. The Drainage Plan shall provide both short- and long-term drainage solutions to ensure the proper sequencing or drainage facilities during and following construction. The City shall evaluate options for on-site detention including, but not limited to, providing temporary storage within a portion or portions of proposed paved areas, linear infiltration facilities along the site perimeter, and/or other on-site opportunities for detention, retention, and/or infiltration facilities. Design specifications for the detention, retention, and/or infiltration facilities shall provide sufficient storage capacity to accommodate the 10-year, 24-hour storm event. In addition, the Drainage Plan shall delineate the overland release path for flows generated by a 100-year frequency storm, so that structural pad elevations for buildings, containment facilities, storage tank, and container storage areas are placed a minimum of one foot above the property's highest frontage curb elevation. Implementation: City of Folsom Utilities Department Timing: Development of the Drainage Plan prior to start of construction. Enforcement: 1. Central Valley Regional Water Quality Control Board. 2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 3. For improvements within unincorporated Sacramento County or City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.		
Mitigation Measure 3B.9-3b: Ensure the Provision of Sufficient Outlet Protection and On-site Containment. Energy dissipaters, vegetated rip-rap, soil protection, and/or other appropriate BMPs shall be included within all storm-drain outlets to slow runoff velocities and prevent erosion at discharge locations for the WTP. A long-term maintenance plan shall be implemented for all drainage discharge control devices. The WTP layout shall also include sufficient on-site containment and pollution-control devises for drainage facilities to avoid the off-site release of water quality pollutants, oil and grease.		

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
Implementation: City of Folsom Utilities Department Timing: Incorporation of measures into the Drainage Plan prior to start of construction. Enforcement: 1. Central Valley Regional Water Quality Control Board. 2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 3. For improvements within unincorporated Sacramento County or City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department. **2, 2A, 2B:** No mitigation measures are required. ***Significance after Mitigation: less than significant***		
3B.9-4: Changes to Flow within the Sacramento River. The Off-site Water Facilities could result in adverse effects to existing flows within the Sacramento River. **NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** direct LTS & no indirect **NWF:** no impacts
3B.9-5: Exceed Drainage Capacity and Contribute Sources Polluted Runoff. The Off-site Water Facilities could create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. **NCP, PA, 1, 1A, 3, 3A, 4, & 4A:** Implement Mitigation Measures 3B.9-3a and 3B.9-3b. ***Significance after Mitigation: less than significant***	Water	**NCP, PA, 1, 1A, 3, 3A:** direct PS & indirect LTS **2, 2A, 2B:** LTS **4, 4A:** direct & indirect PS
3B.9-6: Impede or Redirect Flood Flows. The Off-site Water Facilities could place structures within a 100-year flood hazard area, which would impede or redirect flood flows **NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** Implement Mitigation Measures 3B.7-1a and 3B.9-1a. ***Significance after Mitigation: less than significant***	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** direct & indirect PS

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3B.9-7: Inundation from Flooding or Mudflows. The Offsite Water Facility Alternatives would not expose people or structures to a significant risk of loss, injury or death involving inundation by flooding, including flooding as a result of the failure of a levee or dam, seiche, or tsunami or inundation by mudflows. **NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** no impacts
3A.10 LAND USE AND AGRICULTURAL RESOURCES		
3A.10-1: Consistency with Sacramento LAFCo Guidelines. Annexation of the SPA into the City of Folsom would require approval by Sacramento LAFCo. **NP:** No mitigation measures are required. **NCP, PP, RIM, CD, RHD:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Land	**NP:** no direct & indirect **NCP, PP, RIM, CD, RHD:** direct LTS, no indirect
3A.10-2: Consistency with the SACOG Sacramento Region Blueprint. Project implementation could conflict with the SACOG Sacramento Region Preferred Blueprint Scenario. **ON-SITE** **NP, NCP, RIM:** No mitigation measures may be imposed **PP, CD, RHD:** No mitigation measures are required. **OFF-SITE** No mitigation measures are required. ***Significance after Mitigation: significant and unavoidable***	Land	**ON-SITE** **NP, NCP, RIM:** inconsistent **PP, CD, RHD:** consistent **OFF-SITE** No consistency

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.10-3: Cancellation of Existing On-Site Williamson Act Contracts. Project implementation could result in the cancellation of Williamson Act contracts. **ON-SITE** **NP:** No mitigation measures are required. **NCP, PP, RIM, CD, RHD:** No feasible mitigation measures are available. **OFF-SITE** No mitigation measures are required. ***Significance after Mitigation: significant and unavoidable***	Land	**ON-SITE** **NP:** No direct or indirect **NCP, PP, RIM, CD, RHD:** direct significant, no indirect **OFF-SITE** Direct LTS, no indirect
3A.10-4: Potential Conflict with Existing Off-site Williamson Act Contracts. Project implementation could conflict with lands under Williamson Act contracts south of the SPA; thereby potentially resulting in cancellation of those contracts. **ON-SITE** **NP:** No mitigation measures are required. **NCP, PP, RIM, CD, RHD:** No feasible mitigation measures are available. **OFF-SITE** No mitigation measures are required. ***Significance after Mitigation: significant and unavoidable***	Land	**ON-SITE** **NP:** No direct or indirect **NCP, PP, RIM, CD, RHD:** indirect significant, no direct **OFF-SITE** Indirect LTS, no direct

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3B.10 LAND USE AND AGRICULTURAL RESOURCES – WATER		
3B.10-1: Conflict with Applicable Water Resource Management and Facility Plans, Policies, or Regulations. Implementation of the Off-site Water Facility Alternatives would not conflict with applicable water resource management and facility plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. **NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A:** direct & indirect LTS
3B.10-2: Conflict with Applicable Local Agency Land Use Plans, Policies, or Regulations. Implementation of the Off-site Water Facility Alternatives could conflict with an applicable land use plan, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect.	Water	**NCP, PA:** consistent direct & indirect LTS **1, 1A, 3, 3A:** inconsistent direct & indirect significant **2, 2A, 2B:** consistent direct & indirect LTS **4, 4A:** consistent direct & indirect LTS (*location*), potentially inconsistent (*planning*)
1, 1A, 3, 3A, 4, & 4A: Mitigation Measure 3B.10-2: Acquire Development Approvals for Off-site WTPs. The City shall implement one of the two following options to enable development of the White Rock WTP under Off-site Water Facility Alternatives 1, 1A, 3, and 3A: (1) Annexation and Pre-Zoning to Public Use. The City shall file an application with Sacramento LAFCo to amend its sphere of influence to include the White Rock WTP and City Corporation Yard, if applicable. The application shall include a statement describing that the sphere of influence amendment is necessary to ensure the provision of adequate water supply, distribution, and treatment for planned development with the Folsom SPA. Subject to LAFCo approval of the sphere of influence amendment, the City shall prepare an application to annex and prezone the White Rock WTP site for Public Use. As part of the White Rock WTP site's design, spacing opportunities between the WTP facilities and adjacent land use shall be maximized to encourage open space continuity and disruption to adjacent agricultural areas. Prior the annexation approval, the City shall provide LAFCo with the following: (a) dedications of rights-of-way; (b) improvements for vehicle access; (c) the placement of structures and their associated height; and (d) landscaping/open space for the protection of adjoining and nearby properties. or (2) Obtain County Use Permit or General Plan Amendment. The City shall file an application with Sacramento County for a Use Permit to allow the operation of the proposed WTP within the AG-80 zone. The City shall comply with the conditions of the Use Permit, so that the WTP site is developed consistent with County requirements in terms of the following: (a) dedications of right-of-way; (b) improvements for vehicle access; (c) the placement of structures and their associated height; and (d) landscaping for the protection of adjoining and nearby properties. Alternatively, the City may file an application for a General Plan Amendment and Rezone to designate the White Rock WTP site for Public Use. In addition to complying with the requirements of the Public zone, the City shall develop the site consistent with the County's for the following: (a) dedications of right-of-way; (b) improvements for vehicle access; (c) the placement of structures and their associated height; and (d) landscaping for the protection of adjoining and nearby properties.		

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
Implementation: City of Folsom Utilities Department Timing: Prior to acquisition and development of the Off-site WTP Enforcement: 1. For annexation and sphere of influence applications: Sacramento County LAFCo. 2. For the entitlement and General Plan applications through Sacramento County: Sacramento County Planning and Community Development Department. **NCP, PA, 2, 2A, 2B:** No mitigation measures are required. ***Significance after Mitigation: potentially significant and unavoidable for 1, 1A, 3, and 3A, 4 and 4A*** ***Significance after Mitigation: less than significant for NCP, PA, 2, 2A, 2B***		
3B.10-3: Conversion of Important Farmland to Nonagricultural Uses. Implementation of the Off-site Water Facilities could result in the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural uses. **NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** direct LTS & no indirect
3B.10-4: Cancellation of Existing On-Site Williamson Act Contracts. Construction of the Off-site Water Facilities could conflict with lands under Williamson Act contracts; thereby potentially resulting in cancellation of those contracts. **NCP, PA, 1, 1A:** No feasible mitigation measures are available. **2, 2A, 2B, 3, 3A, 4, & 4A:** No mitigation measures are required. ***Significance after Mitigation: potentially significant and unavoidable***	Water	**NCP, PA, 1, 1A:** direct LTS & indirect significant **2, 2A, 2B, 3, 3A, 4, & 4A:** direct LTS & no indirect
3B.10-5: Potential Temporary Disruptions to Existing Agricultural Operations. Implementation of the Off-site Water Facilities could potentially affect existing agricultural operations and result in a loss in agricultural productivity.	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** direct significant & no indirect
NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A: Mitigation Measure 3B.10-4: Restore Affected Agricultural Lands to Preproject Conditions. The City shall consult with all affected land owners where the selected alignment would cross Important Farmland. As part of the easement acquisition process, the City shall demonstrate a good-faith effort to negotiate with affected landowners an agreed-upon compensation for the loss of any existing pasture and/or row crops currently in production. During these consultations the City shall also, in conjunction with landowners' input, identify areas along the right-of-way that could be left in agricultural production as well as locations for access gates to allow for city staff access. Access gate locations shall be included in the final design		

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
plans for the Off-site Water Facilities. Compensation for the loss of crops and associated revenues shall be up to the provisions of law. Implementation: City of Folsom Utilities Department Timing: Immediately following construction Enforcement: Sacramento County Community Development and Planning Department ***Significance after Mitigation: less than significant***		
3A.11 NOISE - LAND		
3A.11-1: Temporary, Short-Term Exposure of Sensitive Receptors to Increased Equipment Noise from Project Construction. Project implementation would result in temporary, short-term construction activities associated with development of residential, commercial, schools, and park uses, supporting roadways, and other infrastructure improvements. Project-related construction activities could expose existing off-site and future on-site sensitive receptors to temporary noise levels that exceed the applicable noise standards and/or result in a substantial increase in ambient noise levels. **NP:** No mitigation measures are required. **NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.11-1: Implement Noise-Reducing Construction Practices, Prepare and Implement a Noise Control Plan, and Monitor and Record Construction Noise near Sensitive Receptors.** To reduce impacts associated with noise generated during project-related construction activities, the project applicant(s) and their primary contractors for engineering design and construction of all project phases shall ensure that the following requirements are implemented at each work site in any year of project construction to avoid and minimize construction noise effects on sensitive receptors. The project applicant(s) and primary construction contractor(s) shall employ noise-reducing construction practices. Measures that shall be used to limit noise shall include the measures listed below: ▸ Noise-generating construction operations shall be limited to the hours between 7 a.m. and 7 p.m. Monday through Friday, and between 8 a.m. and 6 p.m. on Saturdays and Sundays. ▸ All construction equipment and equipment staging areas shall be located as far as possible from nearby noise-sensitive land uses. ▸ All construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation. ▸ All motorized construction equipment shall be shut down when not in use to prevent idling. ▸ Individual operations and techniques shall be replaced with quieter procedures (e.g., using welding instead of riveting, mixing concrete off-site instead of on-site).	Land	**ON-SITE** **NP:** direct LTS, no indirect **NCP, PP, RIM, CD, RHD:** direct significant, no indirect **OFF-SITE** **PP:** direct significant, no indirect **NCP, RIM, CD, RHD:** direct LTS, no indirect

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Impact	Land/Water/GPA	Significance
Mitigation		
▸ Noise-reducing enclosures shall be used around stationary noise-generating equipment (e.g., compressors and generators) as planned phases are built out and future noise sensitive receptors are located within close proximity to future construction activities. ▸ Written notification of construction activities shall be provided to all noise-sensitive receptors located within 850 feet of construction activities. Notification shall include anticipated dates and hours during which construction activities are anticipated to occur and contact information, including a daytime telephone number, for the project representative to be contacted in the event that noise levels are deemed excessive. Recommendations to assist noise-sensitive land uses in reducing interior noise levels (e.g., closing windows and doors) shall also be included in the notification. ▸ To the extent feasible, acoustic barriers (e.g., lead curtains, sound barriers) shall be constructed to reduce construction-generated noise levels at affected noise-sensitive land uses. The barriers shall be designed to obstruct the line of sight between the noise-sensitive land use and on-site construction equipment. When installed properly, acoustic barriers can reduce construction noise levels by approximately 8–10 dB (EPA 1971). ▸ When future noise sensitive uses are within close proximity to prolonged construction noise, noise-attenuating buffers such as structures, truck trailers, or soil piles shall be located between noise sources and future residences to shield sensitive receptors from construction noise. ▸ The primary contractor shall prepare and implement a construction noise management plan. This plan shall identify specific measures to ensure compliance with the noise control measures specified above. The noise control plan shall be submitted to the City of Folsom before any noise-generating construction activity begins. Construction shall not commence until the construction noise management plan is approved by the City of Folsom. Mitigation for the two off-site roadway connections into El Dorado County must be coordinated by the project applicant(s) of the applicable project phase with El Dorado County, since the roadway extensions are outside of the City of Folsom's jurisdictional boundaries. Implementation: Project applicant(s) and primary contractor(s) of all project phases. Timing: Before and during construction activities on the SPA and within El Dorado Hills. Enforcement: 1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department. 2. For the two roadway connections off-site into El Dorado Hills: El Dorado County Development Services Department. ***Significance after Mitigation: significant and unavoidable***		
3A.11-2: Temporary, Short-Term Exposure of Sensitive Receptors to Increased Traffic Noise Levels from Project Construction. Project implementation would result in temporary increases in on- and off-site roadway traffic noise associated with project construction. Construction-generated traffic could expose sensitive receptors to noise levels along on- and off-site roadways that exceed the applicable noise standards and/or result in a substantial increase in ambient noise levels. **NP, NCP, PP, RIM, CD, RHD:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Land	**NP:** direct LTS, no indirect **NCP, PP, RIM, CD, RHD:** direct LTS, no indirect

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

3A.11-3: Temporary, Short-Term Exposure of Sensitive Receptors to Potential Groundborne Noise and Vibration from Project Construction. Project implementation could expose sensitive receptors to groundborne noise and vibration levels that exceed applicable standards that could cause human disturbance or damage structures.

Land

ON-SITE
NP: direct LTS, no indirect
NCP, PP, RIM, CD, RHD: direct significant, no indirect
OFF-SITE
Direct significant, no indirect

ON- & OFF-SITE

NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.11-3: Implement Measures to Prevent Exposure of Sensitive Receptors to Groundborne Noise or Vibration from Project Generated Construction Activities.

- To the extent feasible, blasting activities shall not be conducted within 275 feet of existing or future sensitive receptors.
- To the extent feasible, bulldozing activities shall not be conducted within 50 feet of existing or future sensitive receptors.
- All blasting shall be performed by a blast contractor and blasting personnel licensed to operate in the State of California.
- A blasting plan, including estimates of vibration levels at the residence closest to the blast, shall be submitted to the enforcement agency for review and approval prior to the commencement of the first blast.
- Each blast shall be monitored and documented for groundbourne noise and vibration levels at the nearest sensitive land use and associated recorded submitted to the enforcement agency.

Implementation: Project applicant(s) and primary contractor(s) of all project phases.

Timing: Before and during bulldozing and blasting activities on the SPA and within El Dorado Hills and the County of Sacramento

Enforcement:
1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For the two roadway connections off-site into El Dorado Hills: El Dorado County Development Services Department.
3. For the off-site detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.
4. For the U.S. 50 interchange improvements: Caltrans.

Significance after Mitigation: significant and unavoidable

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Impact	Land/Water/GPA	Significance
Mitigation		

3A.11-4: Long-Term Exposure of Sensitive Receptors to Increased Traffic Noise Levels from Project Operation. Project implementation would result in long-term increases in ADT volumes on affected roadway segments. Increased traffic volumes would result in a substantial (e.g., 3 dB L_{dn}/CNEL) increase in ambient noise levels on- and off-site at nearby noise-sensitive receptors.

Land

ON-SITE
NP: direct LTS, no indirect
NCP, PP, RIM, CD, RHD: direct significant, no indirect
OFF-SITE
Direct LTS, no indirect

ON-SITE

NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.11-4: Implement Measures to Prevent Exposure of Sensitive Receptors to Increases in Noise from Project-Generated Operational Traffic on Off-site and On-Site Roadways.

To meet applicable noise standards as set forth in the appropriate General Plan or Code (e.g., City of Folsom, County of Sacramento, and County of El Dorado) and to reduce increases in traffic-generated noise levels at noise-sensitive uses, the project applicant(s) of all project phases shall implement the following:

- Obtain the services of a consultant (such as a licensed engineer or licensed architect) to develop noise-attenuation measures for the proposed construction of on-site noise-sensitive land uses (i.e., residential dwellings and school classrooms) that will produce a minimum composite Sound Transmission Class (STC) rating for buildings of 30 or greater, individually computed for the walls and the floor/ceiling construction of buildings, for the proposed construction of on-site noise-sensitive land uses (i.e., residential dwellings and school classrooms).
- Prior to submittal of tentative subdivision maps and improvement plans, the project applicant(s) shall conduct a site-specific acoustical analysis to determine predicted roadway noise impacts attributable to the project, taking into account site-specific conditions (e.g., site design, location of structures, building characteristics). The acoustical analysis shall evaluate stationary- and mobile-source noise attributable to the proposed use or uses and impacts on nearby noise-sensitive land uses, in accordance with adopted City noise standards. Feasible measures shall be identified to reduce project-related noise impacts. These measures may include, but are not limited to, the following:
  - limiting noise-generating operational activities associated with proposed commercial land uses, including truck deliveries;
  - constructing exterior sound walls;
  - constructing barrier walls and/or berms with vegetation;
  - using "quiet pavement" (e.g., rubberized asphalt) construction methods on local roadways; and,
  - using increased noise-attenuation measures in building construction (e.g., dual-pane, sound-rated windows; exterior wall insulation).

Implementation: Project applicant(s) of all project phases.

Timing: During project construction activities at noise-sensitive receptors on the SPA; at the existing noise-sensitive receptors on Empire Ranch Road from Broadstone Parkway to Iron Point Road; and at the existing noise-sensitive receptors on Latrobe Road from White Rock Road to Golden Foothills Parkway

Enforcement:
1. For all noise-sensitive receptors that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For all noise-sensitive receptors in El Dorado Hills: El Dorado County Development Services Department.
3. For all noise-sensitive receptors in the vicinity the off-site detention basin west of Prairie City Road: Sacramento County Planning and

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

Community Development Department.

4. For all noise-sensitive receptors adjacent to the U.S. 50 interchange improvements: Caltrans.

OFF-SITE

No mitigation measures are required.

Significance after Mitigation: significant and unavoidable

3A.11-5: Long-Term Exposure of Sensitive Receptors to Increased Stationary-Source Noise Levels from Project Operation. Project implementation would result in increases in on-site stationary-source noise levels associated with the proposed residential, commercial, mixed-use, office/industrial, park, and educational land uses. These stationary noise sources could exceed the applicable noise standards (hourly and maximum) and result in a substantial increase in ambient noise levels.

Land

ON-SITE

NP: direct LTS, no indirect
NCP, PP, RIM, CD, RHD: direct PS, no indirect (*Mechanical HVAC Equipment, Emergency Electrical Generators, Parking Lot Activities, & Loading Dock and Delivery Activity*)
NCP, PP, RIM, CD, RHD: direct LTS, no indirect (*Emergency Facilities & Outdoor Recreational and Educational Activities*)

OFF-SITE

No direct or indirect

ON-SITE

NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.11-5: Implement Measures to Reduce Noise from Project-Generated Stationary Sources.

The project applicant(s) of all project phases shall implement the following measures to reduce the effect of noise levels generated by on-site stationary noise sources that would be located within 600 feet of any noise-sensitive receptor:

- Routine testing and preventive maintenance of emergency electrical generators shall be conducted during the less sensitive daytime hours (i.e., 7:00 a.m. to 6:00 p.m.). All electrical generators shall be equipped with noise control (e.g., muffler) devices in accordance with manufacturers' specifications.
- External mechanical equipment associated with buildings shall incorporate features designed to reduce noise emissions below the stationary noise source criteria. These features may include, but are not limited to, locating generators within equipment rooms or enclosures that incorporate noise-reduction features, such as acoustical louvers, and exhaust and intake silencers. Equipment enclosures shall be oriented so that major openings (i.e., intake louvers, exhaust) are directed away from nearby noise-sensitive receptors.
- Parking lots shall be located and designed so that noise emissions do not exceed the stationary noise source criteria established in this analysis (i.e., 50 dB for 30 minutes in every hour during the daytime [7 a.m. to 10 p.m.] and less than 45 dB for 30 minutes of every hour during the night time [10 p.m. to 7 a.m.]). Reduction of parking lot noise can be achieved by locating parking lots as far away as possible from noise sensitive land uses, or using buildings and topographic features to provide acoustic shielding for noise-sensitive land uses.

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Mitigation		
▸ Loading docks shall be located and designed so that noise emissions do not exceed the stationary noise source criteria established in this analysis (i.e., 50 dB for 30 minutes in every hour during the daytime [7 a.m. to 10 p.m.] and less than 45 dB for 30 minutes of every hour during the night time [10 p.m. to 7 a.m.]). Reduction of loading dock noise can be achieved by locating loading docks as far away as possible from noise sensitive land uses, constructing noise barriers between loading docks and noise-sensitive land uses, or using buildings and topographic features to provide acoustic shielding for noise-sensitive land uses. Implementation: Project applicant(s) of all project phases. Timing: Before submittal of improvement plans for each project phase, and during project operations for testing of emergency generators. Enforcement: City of Folsom Community Development Department. **OFF-SITE** No mitigation measures are required. ***Significance after Mitigation: less than significant***		
3A.11-6: Single-Event Aircraft Noise. New noise sensitive land uses proposed in the Specific Plan area could be exposed to noise from aircraft overflights. Overflights would not result in interior noise levels that create sleep disturbance. **NP, NCP, PP, RIM, CD, RHD:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Land	**ON-SITE** **NP, NCP, PP, RIM, CD, RHD:** direct LTS, no indirect **OFF-SITE** No direct or indirect
3A.11-7: Compatibility of Proposed On-Site Land Uses with the Ambient Noise Environment. The project includes development of on-site noise-sensitive land uses that could be exposed to noise levels that exceed the noise standards set forth in the applicable General Plan and Code. **ON-SITE** **NCP, PP, RIM, CD, RHD:** Implement Mitigation Measure 3A.11-4. Timing: Before submittal of tentative subdivision maps or improvement plans Enforcement: Folsom Community Development Department	Land	**ON-SITE** **NP:** direct LTS, no indirect **NCP, PP, RIM, CD, RHD:** direct significant, no indirect (*Roadway Traffic*) **NCP, PP, RIM, CD, RHD:** direct LTS, no indirect (*Aerojet General Corporation & Prairie City State Vehicular Recreation Area*) **OFF-SITE** No direct or indirect

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Mitigation		
OFF-SITE		
No mitigation measures are required.		
Significance after Mitigation: less than significant		
3B.11 NOISE – WATER		
3B.11-1: Temporary and Short-term Noise Levels in Excess of Standards. The Off-site Water Facilities could expose persons to or generate noise levels in excess of applicable City and County standards.	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** direct PS & no indirect
NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A: Mitigation Measure 3B.11-1a: Limit Construction Hours. Construction activities shall be limited to daylight hours between 7 a.m. and 7 p.m. Monday through Friday, and 9 a.m. and 5 p.m. on Saturday. No construction shall be allowed on Sundays or holidays. Implementation: City of Folsom Utilities Department Timing: During construction of all Off-site Water Facility components Enforcement: 1. For structural improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department. 2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department. 3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.		
Mitigation Measure 3B.11-1b: Minimize Noise from Construction Equipment and Staging. Construction equipment noise shall be minimized during project construction by muffling and shielding intakes and exhaust on construction equipment (per the manufacturer's specifications) and by shrouding or shielding impact tools, where used. The City's construction specifications shall also require that the contractor select staging areas as far as feasibly possible from sensitive receptors. Implementation: City of Folsom Utilities Department Timing: During construction of all Off-site Water Facility components Enforcement: 1. For structural improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department. 2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department. 3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.		

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Mitigation		

Mitigation Measure 3B.11-1c: Maximize the Use of Noise Barriers. Construction contractors shall locate fixed construction equipment (such as compressors and generators) and construction staging areas as far as possible from nearby residences. If feasible, noise barriers shall be used at the construction site and staging area. Temporary walls, stockpiles of excavated materials, or moveable sound barrier curtains would be appropriate in instances where construction noise would exceed 90 dBA and occur within less than 50 feet from a sensitive receptor. The final selection of noise barriers will be subject to the City's approval and shall provide a minimum 10 dBA reduction in construction noise levels.

Implementation: City of Folsom Utilities Department

Timing: During construction of all Off-site Water Facility components

Enforcement:
1. For structural improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department.
2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department.
3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.

Mitigation Measure 3B.11-1d: Prohibit Non-Essential Noise Sources During Construction. No amplified sources (e.g., stereo "boom boxes") shall be used in the vicinity of residences during project construction.

Implementation: City of Folsom Utilities Department

Timing: During construction of all Off-site Water Facility components

Enforcement:
1. For structural improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department.
2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department.
3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.

Mitigation Measure 3B.11-1e: Monitor Construction Noise and Provide a Mechanism for Filing Noise Complaints. An on-site complaint and enforcement manager shall track and respond to noise complaints. The City shall also provide a mechanism for residents, businesses, and agencies to register complaints with the City if construction noise levels are overly intrusive or construction occurs outside the required hours.

Implementation: City of Folsom Utilities Department

Timing: During construction of all Off-site Water Facility components

Enforcement:
1. For structural improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department.
2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department.

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Mitigation		
3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department. ***Significance after Mitigation: significant and unavoidable***		
3B.11-2: Exposure to and/or Generation of Groundborne Vibration. The Off-site Water Facilities could expose persons to or generate excessive groundborne vibration or groundborne noise levels. **NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** direct LTS, no indirect
3B.11-3: Permanent Increase in Ambient Noise Levels. The Off-site Water Facilities could create a substantial permanent increase in ambient noise levels in the vicinity of new pumping facilities.	Water	**NCP, PA:** direct PS, no indirect (*Pump Station(s)*); direct LTS, no indirect (*Water Treatment Plant & Traffic Noise*) **1, 1A, 3, 3A, 4, 4A:** direct PS, no indirect (*pumping noise*) **2, 2A, 2B:** direct LTS, no indirect
NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A: Mitigation Measure 3B.11-3a: Implement Operational Noise Minimization Measures. The following mitigation measures shall be implemented for the design of the WTP and the pump station(s) to ensure that operational noise levels at the property line do not exceed the City/County standards: ▸ Shielding and other specified measures as deemed appropriate and effective by the design engineer shall be incorporated into the design in order to comply with performance standards. ▸ Pumps located underground shall be shielded to not affect nearby sensitive receptors. ▸ Project equipment shall be outfitted and maintained with noise-reduction devices such as equipment closures, fan silencers, mufflers, acoustical louvers, noise barriers, and acoustical panels to minimize operational noise. ▸ Particularly noisy equipment shall be located as far away as feasibly possible from nearby sensitive receptors. ▸ The orientation of acoustical exits shall always be facing away from nearby sensitive receptors. ▸ Buildings and landscaping shall be incorporated, where possible, to absorb or redirect noise away from nearby sensitive receptors. Implementation: City of Folsom Utilities Department Timing: Approval of engineering plans for the On- or Off-site WTPs and Off-site booster pumping facilities prior to construction Enforcement: 1. For structural improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department. 2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department.		

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Mitigation		
3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department. ***Significance after Mitigation: significant and unavoidable***		
3A.12 PARKS AND RECREATION - LAND		
3A.12-1: Sufficiency of Proposed Parkland to Meet Increased Demand and Potential Increased Use and Deterioration of Existing Facilities. Residential development proposed for the SPA would require 5 acres of parkland per 1,000 residents to meet the adopted City of Folsom standards. Increased population could increase the demand on existing neighborhood and community parks such that the physical deterioration of the existing facilities could occur or be accelerated. **NP, NCP, PP, RIM, CD, RHD:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Land	**ON-SITE** **NP:** indirect LTS, no direct **NCP, PP, RIM, CD, RHD:** direct LTS, no indirect **OFF-SITE** No direct or indirect
3A.12-2: Increased Use and Potential Physical Deterioration of Existing Off-site Local or Regional Park Facilities. Project implementation would result in a large number of new residents, which would increase the use and could cause the potential physical deterioration of existing off-site local and regional park facilities. **NP, NCP, PP, RIM, CD, RHD:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Land	**Direct** impacts are analyzed in Impact 3A.12-1. **ON-SITE** **NP:** indirect LTS **NCP, PP, RIM, CD, RHD:** indirect LTS **OFF-SITE** No indirect
3B.12 PARKS AND RECREATION - WATER		
3B.12-1: Temporary Disruptions to Existing Recreational Facilities and Opportunities. Implementation of the Off-site Water Facilities could temporarily disrupt trail, golf course, or park facility access.	Water	**NCP, PA, 1, 1A, 2, 2A, 3, 3A, 4 & 4A:** direct PS, no indirect **2B:** no impacts
NCP, PA, 1, 1A, 2, 2A, 3, 3A, 4 & 4A: Mitigation Measure 3B.12-1: Provide for Continued Recreational Access as Identified in Mitigation Measure 3.14-1a. As part of the Traffic Control Plan identified in Mitigation Measure 3.14-1a, the City shall ensure that trail access is maintained throughout the construction period through the use of detours. Proper signage shall be included in multiple locations, where necessary, to provide advance notice to hikers and equestrian riders of up-comings construction activities. Implementation: City of Folsom Utilities Department		

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Impact	Land/Water/GPA	Significance
Mitigation		
Timing: Prior to and during construction activities Enforcement: 1. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department. 2. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department. **2B:** No mitigation measures are required. ***Significance after Mitigation: less than significant***		
3B.12-2: Effects to Water-Oriented Recreational Facilities and Opportunities. Implementation of the Off-site Water Facilities would not cause an adverse change in river flows or lake elevations that could result in substantial changes to existing recreational opportunities. **NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** direct LTS, no indirect
3A.13 POPULATION, EMPLOYMENT, AND HOUSING - LAND		
3A.13-1: Temporary Increase in Population and Subsequent Housing Demand during Construction. Project implementation would generate a temporary increase in employment and subsequent housing demand in Sacramento County and the City of Folsom from construction jobs. **NP, NCP, PP, RIM, CD, RHD:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Land	**NP:** direct LTS, no indirect **NCP, PP, RIM, CD, RHD:** direct LTS, no indirect
3A.13-2: Permanent Increase in Population Growth. Project implementation would result in the development of new residential dwelling units, which would cause a direct long-term increase in population. **NP, NCP, PP, RIM, CD, RHD:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Land	**ON-SITE** **NP:** direct LTS, indirect impacts evaluated throughout EIR/EIS **NCP, PP, RIM, CD, RHD:** direct LTS, indirect impacts evaluated throughout EIR/EIS **OFF-SITE** direct LTS, indirect impacts evaluated throughout EIR/EIS

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Mitigation		
3A.13-3: Displacement of Existing Housing or People Resulting from Project Development. Project implementation would displace one existing residence located in the SPA.	Land	**ON-SITE** **NP:** no direct or indirect **NCP, PP, RIM, CD, RHD:** direct LTS, no indirect **OFF-SITE** No direct or indirect
NP, NCP, PP, RIM, CD, RHD: No mitigation measures are required. ***Significance after Mitigation: less than significant***		
3A.14 PUBLIC SERVICES - LAND		
3A.14-1: Temporary Reduction in Emergency Response Services during Construction. Project implementation could obstruct roadways in the project vicinity during construction, potentially obstructing or slowing emergency vehicles attempting to access the area.	Land	**NP:** direct LTS, no indirect **NCP, PP, RIM, CD, RHD:** direct significant, no indirect
NP: No mitigation measures are required. **NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.14-1: Prepare and Implement a Construction Traffic Control Plan.** The project applicant(s) of all project phases shall prepare and implement traffic control plans for construction activities that may affect road rights-of-way. The traffic control plans must follow any applicable standards of the agency responsible for the affected roadway and must be approved and signed by a professional engineer. Measures typically used in traffic control plans include advertising of planned lane closures, warning signage, a flagperson to direct traffic flows when needed, and methods to ensure continued access by emergency vehicles. During project construction, access to existing land uses shall be maintained at all times, with detours used as necessary during road closures. Traffic control plans shall be submitted to the appropriate City or County department or the California Department of Transportation (Caltrans) for review and approval before the approval of all project plans or permits, for all project phases where implementation may cause impacts on traffic. Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties and Caltrans). Implementation: Project applicant(s) of all project phases. Timing: Before the approval of all relevant plans and/or permits and during construction of all project phases. Enforcement: 1. For those roadways that would be annexed into the City of Folsom: City of Folsom Public Works Department. 2. For those roadways that would remain under the control of Sacramento County: Sacramento County Department of Transportation. 3. For the two off-site roadway connections into El Dorado Hills: El Dorado County Department of Transportation. 4. For U.S. 50 interchange improvements: Caltrans. ***Significance after Mitigation: less than significant***		

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Impact	Land/Water/GPA	Significance
Mitigation		

3A.14-2: Increased Demand for Fire Protection Facilities, Systems, Equipment, and Services. Project development would result in increased demand for fire protection facilities and services, potentially resulting in the need for additional staff and equipment to maintain an adequate level of service.

Land

ON-SITE
NP: direct LTS, no indirect
NCP, PP, RIM, CD, RHD: direct PS, indirect impacts evaluated throughout EIR/EIS

OFF-SITE
No direct or indirect

ON-SITE

NP: No mitigation measures are required.

NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.14-2: Incorporate California Fire Code; City of Folsom Fire Code Requirements; and EDHFD Requirements, if Necessary, into Project Design and Submit Project Design to the City of Folsom Fire Department for Review and Approval. To reduce impacts related to the provision of new fire services, the project applicant(s) of all project phases shall do the following, as described below.

1. Incorporate into project designs fire flow requirements based on the California Fire Code, Folsom Fire Code (City of Folsom Municipal Code Title 8, Chapter 8.36), and other applicable requirements based on the City of Folsom Fire Department fire prevention standards. Improvement plans showing the incorporation automatic sprinkler systems, the availability of adequate fire flow, and the locations of hydrants shall be submitted to the City of Folsom Fire Department for review and approval. In addition, approved plans showing access design shall be provided to the City of Folsom Fire Department as described by Zoning Code Section 17.57.080 ("Vehicular Access Requirements"). These plans shall describe access-road length, dimensions, and finished surfaces for firefighting equipment. The installation of security gates across a fire apparatus access road shall be approved by the City of Folsom Fire Department. The design and operation of gates and barricades shall be in accordance with the Sacramento County Emergency Access Gates and Barriers Standard, as required by the City of Folsom Fire Code.
2. Submit a Fire Systems New Buildings, Additions, and Alterations Document Submittal List to the City of Folsom Community Development Department Building Division for review and approval before the issuance of building permits.

In addition to the above measures, the project applicant(s) of all project phases shall incorporate the provisions described below for the portion of the SPA within the EDHFD service area, if it is determined through City/El Dorado County negotiations that EDHFD would serve the 178-acre portion of the SPA.

3. Incorporate into project designs applicable requirements based on the EDHFD fire prevention standards. For commercial development, improvement plans showing roadways, land splits, buildings, fire sprinkler systems, fire alarm systems, and other commercial building improvements shall be submitted to the EDHFD for review and approval. For residential development, improvement plans showing property lines and adjacent streets or roads; total acreage or square footage of the parcel; the footprint of all structures; driveway plan views describing width, length, turnouts, turnarounds, radiuses, and surfaces; and driveway profile views showing the percent grade from the access road to the structure and vertical clearance shall be submitted to the EDHFD for review and approval.
4. Submit a Fire Prevention Plan Checklist to the EDHFD for review and approval before the issuance of building permits. In addition, residential development requiring automation fire sprinklers shall submit sprinkler design sheet(s) and hydraulic calculations from a California State Licensed C-16 Contractor.

The City shall not authorize the occupancy of any structures until the project applicant(s) have obtained a Certificate of Occupancy from the City of Folsom Community Development Department verifying that all fire prevention items have been addressed on-site to the satisfaction of the City of Folsom Fire Department

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Impact	Land/Water/GPA	Significance
Mitigation		

and/or the EDHFD for the 178-acre area of the SPA within the EDHFD service area.

Implementation: Project applicant(s) of all project phases.

Timing: Before issuance of building permits and issuance of occupancy permits or final inspections for all project phases.

Enforcement: City of Folsom Fire Department, and City of Folsom Community Development Department, and/or EDHFD for the portion of the SPA within the EDHFD service area.

OFF-SITE

No mitigation measures are required.

Significance after Mitigation: less than significant

3A.14-3: Increased Demand for Fire Flow. Project implementation would include the development of residential, commercial, school, and other uses that would require adequate available water flow for fire suppression. Lack of adequate fire flow would impede effective fire suppression at the SPA.

Land

ON-SITE

NP: direct LTS, no indirect

NCP, PP, RIM, CD, RHD: direct significant, no indirect

OFF-SITE

No direct or indirect

ON-SITE

NP: No mitigation measures are required.

NCP, PP, RIM, CD, RHD: Implement Mitigation Measure 3A.14-2.

Mitigation Measure 3A.14-3: Incorporate Fire Flow Requirements into Project Designs. The project applicant(s) of all project phases shall incorporate into their project designs fire flow requirements based on the California Fire Code, Folsom Fire Code, and/or EDHFD for those areas of the SPA within the EDHFD service area and shall verify to City of Folsom Fire Department that adequate water flow is available, prior to approval of improvement plans and issuance of occupancy permits or final inspections for all project phases.

Implementation: Project applicant(s) of all project phases.

Timing: Before issuance of building permits and issuance of occupancy permits or final inspections for all project phases.

Enforcement: City of Folsom Fire Department, City of Folsom Community Development Department, and/or EDHFD for the 178-acre portion of the SPA within the EDHFD service area.

OFF-SITE

No mitigation measures are required.

Significance after Mitigation: less than significant

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Mitigation		
3A.14-4: Increased Demand for Police Protection Facilities, Services, and Equipment. Project development would increase the demand for police protection facilities and services, resulting in the need for additional staff and equipment to maintain an adequate level of service.	Land	**ON-SITE** **NP:** direct LTS, indirect impacts evaluated in EIR/EIS **NCP, PP, RIM, CD, RHD:** direct LTS, indirect impacts evaluated throughout EIR/EIS **OFF-SITE** No direct or indirect
NP, NCP, PP, RIM, CD, RHD: No mitigation measures are required. ***Significance after Mitigation: less than significant***		
3A.14-5: Increased Demand for Public Elementary School Facilities and Services. Project implementation would increase demand for elementary schools (grades K–5) to serve the project.	Land	**ON-SITE** **NP:** direct LTS, no indirect **NCP, PP, RIM, CD, RHD:** direct LTS, indirect impacts evaluated throughout EIR/EIS **OFF-SITE** No direct or indirect
NP, NCP, PP, RIM, CD, RHD: No mitigation measures are required. ***Significance after Mitigation: less than significant***		
3A.14-6: Increased Demand for Public Middle and High School Facilities and Services. Project implementation would increase demand for middle schools (grades 6–8) and high schools (grades 9–12) to serve the project.	Land	**ON-SITE** **NP:** direct LTS, no indirect **NCP, PP, RIM, CD, RHD:** direct LTS, indirect impacts evaluated throughout EIR/EIS **OFF-SITE** No direct or indirect
NP, NCP, PP, RIM, CD, RHD: No mitigation measures are required. ***Significance after Mitigation: less than significant***		

NP (No Action/No Project) NCP (No USACE Permit) PP (Proposed Project) RIM (Resource Impact Minimization)
CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

B (Beneficial) NI (No impact) LTS (Less than significant) PS (Potentially significant) S (Significant) SU (Significant and unavoidable)

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.15 TRAFFIC AND TRANSPORTATION - LAND		
3A.15-1: Increases to Peak-Hour and Daily Traffic Volumes, Resulting in Unacceptable Levels of Service. Implementation of development of the Project or build alternatives would cause an increase in a.m. peak-hour, p.m. peak-hour, and/or daily traffic volumes on area roadways, resulting in unacceptable LOS and warranting the need for improvements such as traffic signals and additional lanes.	Land	**NP:** no impact **NCP, PP, RIM, CD, RHD:** direct SU

NP: No mitigation measures are required.

NCP, PP, RIM, CD, RHD: Project Participation in Funding Transportation Improvements

a. Within and adjacent to the project boundaries, the Applicant shall construct all feasible physical improvements necessary and available to reduce the severity of the project's significant transportation-related impacts, which may be subject to fee credits and/or reimbursement, coordinated by the City, from other fee-paying development projects if available with respect to roads or other facilities that would also serve those non-project fee-paying development projects Funding of improvements on the perimeter of the project boundaries will be shared with other development/jurisdictions.

b. Outside the project boundaries, the Applicant shall be responsible for the project's fair share of feasible physical improvements necessary and available to reduce the severity of the project's significant transportation-related impacts within the City of Folsom, in other jurisdictions and on State facilities, based on "cumulative plus project conditions." For purposes of this measure, "cumulative plus project conditions" refers to development authorized under the project as well as development consistent with approved general plans, specific plans, and other entitlements in the City and other jurisdictions. In cases where the project's fair share contribution is identified, the share will be based on the project's relative contribution to traffic growth under "cumulative plus project conditions." The project's contribution toward such improvements may take any, or some combination, of the following forms:

   1. Construction of roads, road improvements, or other transportation facilities outside the boundaries of the project, subject in some instances to fee credit against other improvements necessitated by the project or future reimbursement, coordinated by the City, from other fee-paying development projects if available where the roads or improvements at issue would also serve those non-project fee paying development projects;
   2. The payment of impact fees to the City of Folsom in amounts that constitute the project's fair share contributions to the construction of transportation facilities to be built or improved within the City, consistent with the City's Capital Improvement Program ("CIP");
   3. The payment of other adopted regional impact fees that would provide improvements to roadways, intersections and/or interchanges that are affected by multiple jurisdictions, except where the project applicant's payments of other fees or construction of improvements within the City of Folsom creates credit against the payment of regional impact fees;
   4. The payment of impact fees to the City of Folsom in amounts that constitute the project's fair share contributions to the construction of transportation facilities and/or improvements within affected jurisdictions outside of Folsom, which payments to the City of Folsom and transmittal of fees to other agencies would occur through one or more enforceable agreements provided that for each required improvement, there is a reasonable mitigation plan that ensures that (i) the fees collected from the project will be used for their intended purposes, and (ii) the improvements will actually be built within a reasonable period of time, and
   5. The payment of impact fees to the City of Folsom in amounts that constitute the project's fair share contributions to the construction of transportation

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

facilities and/or improvements on federal or state highways or freeways needed in part because of the project, to be made available to the California Department of Transportation ("Caltrans") if and when Caltrans and the City of Folsom enter into an enforceable agreement consistent with state law provided that, for each required improvement, Caltrans has a reasonable mitigation plan that ensures that (i) the fees collected from the project will be used for their intended purposes, and (ii) the improvements will actually be built within a reasonable period of time.

c. In pursuing a single agreement or multiple agreements with any jurisdictions outside of the City of Folsom that will be affected by traffic from the project in order to effectuate proposed mitigation measures for improvements outside the City of Folsom, the City will seek to negotiate in good faith with these other jurisdictions to enter into fair and reasonable arrangements with the intention of achieving, within a reasonable time period after approval of the project's, commitments for (i) the provision of adequate "fair share" mitigation payments from the project for out-of-jurisdiction traffic impacts and impacts on federal and state freeways and highways, and (ii) reciprocal payments from regional development projects to the City of Folsom to address cumulative "fair share" mitigation payments towards federal and state freeways and highways for transportation-related facilities and/or improvements within the City of Folsom necessitated by the development within the region. It is intended that these agreements shall permit the participating agencies flexibility in providing cross-jurisdictional credits and reimbursements consistent with the general "fair share" mitigation standard, and require an updated model run incorporating the best available information in order to obtain the most accurate, up-to-date impact assessment feasible and to generate the most accurate, up-to-date estimates of regional fair share contributions. Best efforts should be made to secure funding from federal, state and regional sources. These agreements, moreover, should also include provisions that allow for periodic updates to the traffic modeling on which fair share payment calculations depend in order to account for (i) newly approved projects cumulatively contributing to transportation-related impacts and that therefore should contribute to the funding of necessary improvements (ii) additional physical improvements necessitated in whole or in part by newly approved projects, (iii) changing cost calculations for the construction of needed improvements based on changes in the costs of materials, labor, and other inputs.

d. If transportation improvements required to be constructed as mitigation are constructed prior to project implementation, the project will pay its fair share portion for those improvements.

e. In considering individual projects within the project area (e.g., small-lot tentative subdivision maps or similar discretionary non-residential approvals), the City of Folsom shall identify required improvements, and shall base its calculations for such projects' fair share payments, based on the most recent traffic modeling (i.e., modeling that accounts for (i) newly approved projects cumulatively contributing to transportation-related impacts and that therefore should contribute to the funding of necessary improvements, (ii) additional physical improvements necessitated in whole or in part by newly approved projects, and (iii) changing cost calculations for the construction of needed improvements based on changes in the costs of materials, labor, and other inputs).

Significance after Mitigation: significant and unavoidable

NP (No Action/No Project) NCP (No USACE Permit) PP (Proposed Project) RIM (Resource Impact Minimization)
CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

B (Beneficial) NI (No impact) LTS (Less than significant) PS (Potentially significant) S (Significant) SU (Significant and unavoidable)

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.15-1a: Unacceptable LOS at the Folsom Boulevard/Blue Ravine Road Intersection (Intersection 1). Project or build alternative traffic would cause signalized intersection operations at the Folsom Boulevard/Blue Ravine Road intersection to deteriorate with an increase in delay of more than 5 seconds during either or both a.m./p.m. peak hours.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-1a: The Applicant Shall Pay a Fair Share to Fund the Construction of Improvements to the Folsom Boulevard/Blue Ravine Road Intersection (Intersection 1). To ensure that the Folsom Boulevard/Blue Ravine Road intersection operates at an acceptable LOS, the eastbound approach must be reconfigured to consist of two left-turn lanes, one through lane, and one right-turn lane. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the Folsom Boulevard/Blue Ravine Road intersection (Intersection 1). Implementation: City of Folsom Public Works Department. Timing: A phasing analysis shall be performed prior to approval of the first subdivision map to determine when the improvement should be implemented and when fair share funding should be paid. Enforcement: City of Folsom Public Works Department ***Significance after Mitigation: less than significant***		
3A.15-1b: Unacceptable LOS at the Sibley Street/ Blue Ravine Road Intersection (Intersection 2). Project or build alternative traffic would cause signalized intersection operations at the Sibley Street/Blue Ravine Road intersection to deteriorate with an increase in delay of more than 5 seconds during the a.m. peak hour.	Land	**NCP, RIM:** LTS **PP, CD, RHD:** significant
NCP, RIM: No mitigation measures are required. **PP, CD, RHD: Mitigation Measure 3A.15-1b: The Applicant Shall Pay a Fair Share to Fund the Construction of Improvements at the Sibley Street/ Blue Ravine Road Intersection (Intersection 2).** To ensure that the Sibley Street/Blue Ravine Road intersection operates at an acceptable LOS, the northbound approach must be reconfigured to consist of two left-turn lanes, two through lanes, and one right-turn lane. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the Sibley Street/Blue Ravine Road intersection (Intersection 2). Implementation: City of Folsom Public Works Department. Timing: A phasing analysis shall be performed prior to approval of the first subdivision map to determine when the improvement should be implemented and when fair share funding should be paid. Enforcement: City of Folsom Public Works Department ***Significance after Mitigation: less than significant***		

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CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

B (Beneficial) NI (No impact) LTS (Less than significant) PS (Potentially significant) S (Significant) SU (Significant and unavoidable)

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.15-1c: Unacceptable LOS at the Scott Road (West)/White Rock Road Intersection (Intersection 28). Unsignalized intersection operations at Scott Road (West)/White Rock Road would degrade to LOS D during the p.m. peak hour.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-1c: The Applicant Shall Fund and Construct Improvements to the Scott Road (West)/White Rock Road Intersection (Intersection 28). To ensure that the Scott Road (West)/White Rock Road intersection operates at an acceptable LOS, a traffic signal must be installed. Implementation: City of Folsom Public Works Department. Timing: A phasing analysis shall be performed prior to approval of the first subdivision map to determine when the improvement should be implemented. Enforcement: City of Folsom Public Works Department ***Significance after Mitigation: less than significant***		
3A.15-1d: Unacceptable LOS D at the Scott Road (East)/Easton Valley Parkway Intersection (Intersection 38). Signalized intersection operations at Scott Road (East)/Easton Valley Parkway would operate at unacceptable LOS D during the p.m. peak hour.	Land	**NCP, PP, RIM, CD, RHD:** LTS
NCP, PP, RIM, CD, RHD: No mitigation measures are required. ***Significance after Mitigation: less than significant***		
3A.15-1e: Unacceptable LOS at the Hillside Drive/Easton Valley Parkway Intersection (Intersection 41). Unsignalized intersection operations at Hillside Drive/Easton Valley Parkway would be at LOS D during both a.m. and p.m. peak hours.	Land	**NCP, PP, RIM, CD:** LTS **RHD:** significant
NCP, PP, RIM, CD: No mitigation measures are required. **RHD: Mitigation Measure 3A.15-1e: Fund and Construct Improvements to the Hillside Drive/Easton Valley Parkway Intersection (Intersection 41).** To ensure that the Hillside Drive/Easton Valley Parkway intersection operates at an acceptable LOS, the eastbound approach must be reconfigured to consist of one dedicated left turn lane and two through lanes, and the westbound approach must be reconfigured to consist of two through lanes and one dedicated right-turn lane. The applicant shall fund and construct these improvements. Implementation: City of Folsom Public Works Department. Timing: A phasing analysis shall be performed prior to approval of the first subdivision map to determine when the improvement should be implemented.		

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CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
Enforcement: City of Folsom Public Works Department ***Significance after Mitigation: less than significant***		
3A.15-1f: Unacceptable LOS at the Oak Avenue Parkway/Middle Road Intersection (Intersection 44). Unsignalized intersection operations at Oak Avenue Parkway/Middle Road would operate at unacceptable LOS D during either or both a.m./p.m. peak hours.	Land	**NCP, RIM:** LTS **PP, CD, RHD:** significant
NCP, RIM: No mitigation measures are required. **PP, CD, RHD: Mitigation Measure 3A.15-1f: Fund and Construct Improvements to the Oak Avenue Parkway/Middle Road Intersection (Intersection 44).** To ensure that the Oak Avenue Parkway/Middle Road intersection operates at an acceptable LOS, control all movements with a stop sign. The applicant shall fund and construct these improvements. Implementation: City of Folsom Public Works Department. Timing: A phasing analysis shall be performed prior to approval of the first subdivision map to determine when the improvement should be implemented. Enforcement: City of Folsom Public Works Department ***Significance after Mitigation: less than significant***		
3A.15-1g: Unacceptable LOS at the Hazel Avenue/Gold Country Blvd Intersection (Sacramento County Intersection 1). Signalized intersection operations at Hazel Avenue/Gold Country Boulevard would deteriorate, with the volume-to-capacity ratio increasing by more than 0.05 during the p.m. peak hour.	Land	**NCP, PP, RIM, CD, RHD:** LTS
NCP, PP, RIM, CD, RHD: No mitigation measures are required. ***Significance after Mitigation: less than significant***		
3A.15-1h: Unacceptable LOS at the Hazel Avenue/Folsom Blvd Intersection (Sacramento County Intersection 2). Signalized intersection operations at Hazel Avenue/Folsom Boulevard would deteriorate, with the volume-to-capacity ratio increasing by more than 0.05 during the p.m. peak hour.	Land	**NCP, CD:** significant **PP, RIM, RHD:** LTS
NCP, CD: Mitigation Measure 3A.15-1h: Participate in Fair Share Funding of Improvements to Reduce Impacts to the Hazel Avenue/Folsom Boulevard Intersection (Sacramento County Intersection 2). To ensure that the Hazel Avenue/Folsom Boulevard intersection operates at an acceptable LOS, this intersection must be grade separated including "jug handle" ramps. No at grade improvement is feasible. Grade separating and extended (south) Hazel Avenue with improvements to the U.S. 50/Hazel Avenue interchange is a mitigation measure for the approved Easton-Glenbrough Specific Plan development project. The		

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to the Hazel Avenue/Folsom Boulevard intersection (Sacramento County Intersection 2).

Implementation: Sacramento County Public Works Department and Caltrans.

Timing: A phasing analysis shall be performed prior to approval of the first subdivision map to determine when the improvement should be implemented.

Enforcement: Sacramento County Public Works Department and Caltrans

Significance after Mitigation: significant and unavoidable

PP, RIM, RHD: No mitigation measures are required.

Significance after Mitigation: less than significant

3A.15-1i: Unacceptable LOS at the Grant Line Road/White Rock Road Intersection (Sacramento County Intersection 3). Delay at the unsignalized Grant Line Road/White Rock Road intersection would increase delay by more than 5 seconds during the a.m. and p.m. peak hours.

Land

NCP, PP, RIM, CD, RHD: significant

NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-1i: Participate in Fair Share Funding of Improvements to Reduce Impacts on the Grant Line Road/White Rock Road Intersection and to White Rock Road widening between the Rancho Cordova City limit to Prairie City Road (Sacramento County Intersection 3). Improvements must be made to ensure that the Grant Line Road/White Rock Road intersection operates at an acceptable LOS. The currently County proposed White Rock Road widening project will widen and realign White Rock Road from the Rancho Cordova City limit to the El Dorado County line (this analysis assumes that the Proposed Project and build alternatives will widen White Rock Road to five lanes from Prairie City road to the El Dorado County Line). This widening includes improvements to the Grant Line Road intersection and realigning White Rock Road to be the through movement. The improvements include two eastbound through lanes, one eastbound right turn lane, two northbound left turn lanes, two northbound right turn lanes, two westbound left turn lanes and two westbound through lanes. This improvement also includes the signalization of the White Rock Road and Grant Line Road intersection. With implementation of this improvement, the intersection would operate at an acceptable LOS A. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to the Grant Line Road/White Rock Road intersection (Sacramento County Intersection 3).

Implementation: Sacramento County Public Works Department.

Timing: Before project build out. Design of the White Rock Road widening to four lanes, from Grant Line Road to Prairie City Road, with intersection improvements has begun, and because this widening project is environmentally cleared and fully funded, it's construction is expected to be complete before the first phase of the Proposed Project or alternative is built.

Enforcement: Sacramento County Public Works Department

Significance after Mitigation: significant and unavoidable

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.15-1j: Unacceptable LOS on Hazel Avenue between Madison Avenue and Curragh Downs Drive (Sacramento County Roadway Segment 10). The volume-to-capacity ratio on this LOS F segment would increase by more than 0.05 with project-related traffic.	Land	**NCP, RIM:** LTS **PP, CD, RHD:** significant
NCP, RIM: No mitigation measures are required. **PP, CD, RHD: Mitigation Measure 3A.15-1j: Participate in Fair Share Funding of Improvements to Reduce Impacts on Hazel Avenue between Madison Avenue and Curragh Downs Drive (Roadway Segment 10).** To ensure that Hazel Avenue operates at an acceptable LOS between Curragh Downs Drive and Gold Country Boulevard, Hazel Avenue must be widened to six lanes. This improvement is part of the County adopted Hazel Avenue widening project. Implementation: Sacramento County Public Works Department. Timing: Before project build out. Construction of phase two of the Hazel Avenue widening, from Madison Avenue to Curragh Downs Drive, is expected to be completed by year 2013, before the first phase of the Proposed Project or alternative is complete. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to Hazel Avenue between Madison Avenue and Curragh Downs Drive (Sacramento County Roadway Segment 10). Enforcement: Sacramento County Public Works Department ***Significance after Mitigation: significant and unavoidable***		
3A.15-1k:Unacceptable LOS on Hazel Avenue between Curragh Downs Drive and Gold Country Boulevard (Sacramento County Roadway Segment 11). Operations on this roadway segment would deteriorate, with an increase in the volume-tocapacity ratio of this LOS F segment by more than 0.05 under the project and all build alternatives.	Land	**NCP, PP, RIM, CD, RHD:** LTS
NCP, PP, RIM, CD, RHD: No mitigation measures are required. ***Significance after Mitigation: less than significant***		
3A.15-1l: Unacceptable LOS at the White Rock Road/Windfield Way Intersection (El Dorado County Intersection 3). Unsignalized intersection operations at White Rock Road/Windfield Way would degrade as the delay would increase by more than 5 seconds under unacceptable LOS F conditions during the p.m. peak traffic hour.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-1l: Participate in Fair Share Funding of Improvements to Reduce Impacts on the White Rock Road/Windfield Way Intersection (El Dorado County Intersection 3). To ensure that the White Rock Road/Windfield Way intersection operates at an acceptable LOS, the intersection must be signalized and separate northbound left and right turn lanes must be striped. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to the White		

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
Rock Road/Windfield Way intersection (El Dorado County Intersection 3). Implementation: El Dorado County Department of Transportation. Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built. Enforcement: El Dorado County Department of Transportation ***Significance after Mitigation: significant and unavoidable***		
3A.15-1m: Unacceptable LOS at the Hazel Avenue/U.S. 50 Westbound Ramps Intersection (Caltrans Intersection 1). Signalized intersection operations at Hazel Avenue/U.S. 50 westbound ramps would degrade as the delay increases with the addition of project or alternative traffic.	Land	**NCP, PP, RIM, CD, RHD:** LTS
NCP, PP, RIM, CD, RHD: No mitigation measures are required. ***Significance after Mitigation: less than significant***		
3A.15-1n: Unacceptable LOS at the Hazel Avenue/U.S. 50 Eastbound Ramps Intersection (Caltrans Intersection 2). Signalized intersection operations at Hazel Avenue/U.S. 50 eastbound ramps would degrade as the delay would increase during the p.m. peak hour.	Land	**NCP, PP, RIM, CD, RHD:** LTS
NCP, PP, RIM, CD, RHD: No mitigation measures are required. ***Significance after Mitigation: less than significant***		
3A.15-1o: Unacceptable LOS at the Folsom Boulevard/U.S. 50 Eastbound Ramps Intersection (Caltrans Intersection 4). The signalized intersection of Folsom Boulevard/U.S. 50 eastbound ramps would degrade from an acceptable LOS C to an unacceptable LOS F during the p.m. peak traffic hour with project-related traffic.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-1o: Participate in Fair Share Funding of Improvements to Reduce Impacts on Eastbound U.S. 50 as an alternative to improvements at the Folsom Boulevard/U.S. 50 Eastbound Ramps Intersection (Caltrans Intersection 4). Congestion on eastbound U.S. 50 is causing vehicles to use Folsom Boulevard as an alternate parallel route until they reach U.S. 50, where they must get back on the freeway due to the lack of a parallel route. It is preferred to alleviate the congestion on U.S. 50 than to upgrade the intersection at the end of this reliever route. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to the Folsom Boulevard/U.S. 50 Eastbound Ramps intersection (Caltrans Intersection 4). To ensure that the Folsom Boulevard/U.S. 50 eastbound ramps intersection operates at an acceptable LOS, auxiliary lanes should be added to eastbound U.S. 50		

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

from Hazel Avenue to east of Folsom Boulevard. This was recommended in the Traffic Operations Analysis Report for the U.S. 50 Auxiliary Lane Project.

Implementation: Caltrans

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: Caltrans

Significance after Mitigation: significant and unavoidable

3A.15-1p: Unacceptable LOS at the Grant Line Road/ State Route 16 Intersection (Caltrans Intersection 12). The signalized intersection of Grant Line Road/State Route 16 would experience an increase in delay during the a.m. peak traffic hour and degrade to an unacceptable LOS F during the p.m. peak traffic hour.

Land

NCP, PP, RIM, CD, RHD: significant

NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-1p: Participate in Fair Share Funding of Improvements to Reduce Impacts on the Grant Line Road/ State Route 16 Intersection (Caltrans Intersection 12). To ensure that the Grant Line Road/State Route 16 intersection operates at an acceptable LOS, the northbound and southbound approaches must be reconfigured to consist of one left-turn lane and one shared through/right-turn lane. Protected left-turn signal phasing must be provided on the northbound and southbound approaches. Improvements to the Grant Line Road/State Route 16 intersection are contained within the County Development Fee Program, and are scheduled for Measure A funding.

- Improvements to this intersection must be implemented by Caltrans, Sacramento County, and the City of Rancho Cordova.

The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to the Grant Line Road/State Route 16 intersection (Caltrans Intersection 12).

Implementation: Caltrans, Sacramento County Department of Transportation and the City of Rancho Cordova Department of Public Works

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: Caltrans, Sacramento County Department of Transportation and the City of Rancho Cordova Department of Public Works

Significance after Mitigation: significant and unavoidable

3A.15-1q: Unacceptable LOS on Eastbound U.S. 50 between Zinfandel Drive and Sunrise Boulevard (Freeway Segment 1). This freeway segment would degrade to an unacceptable LOS F during the p.m. peak hour.

Land

NCP, PP, RIM, CD, RHD: significant

NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-1q: Participate in Fair Share Funding of Improvements to Reduce Impacts on Eastbound U.S. 50 between Zinfandel Drive and Sunrise Boulevard (Freeway Segment 1). To ensure that Eastbound U.S. 50 operates at an acceptable LOS between Zinfandel Drive and Sunrise Boulevard, a bus-carpool (HOV) lane must be constructed. This improvement is currently planned as part of the Sacramento 50 Bus-Carpool

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
Lane and Community Enhancements Project. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to Eastbound U.S. 50 between Zinfandel Drive and Sunrise Boulevard (Freeway Segment 1). Implementation: Caltrans Timing: Before project build out. Construction of the Sacramento 50 Bus-Carpool Lane and Community Enhancements Project is expected to be completed by year 2013, before the first phase of the Proposed Project or alternative is complete. Enforcement: Caltrans ***Significance after Mitigation: significant and unavoidable***		
3A.15-1r: Unacceptable LOS on Eastbound U.S. 50 between Hazel Avenue and Folsom Boulevard (Freeway Segment 3). This freeway segment would degrade to an unacceptable LOS F during the p.m. peak hour with project-related traffic.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-1r: Participate in Fair Share Funding of Improvements to Reduce Impacts on Eastbound U.S. 50 between Hazel Avenue and Folsom Boulevard (Freeway Segment 3). To ensure that Eastbound U.S. 50 operates at an acceptable LOS between Hazel Avenue and Folsom Boulevard, an auxiliary lane must be constructed. This improvement was recommended in the Traffic Operations Analysis Report for the U.S. 50 Auxiliary Lane Project. This improvement is included in the proposed 50 Corridor Mobility Fee Program. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to Eastbound U.S. 50 between Hazel Avenue and Folsom Boulevard (Freeway Segment 3). Implementation: Caltrans Timing: Before project build out. A phasing analysis should be performed to determine during which project phase the improvement should be built. Enforcement: Caltrans ***Significance after Mitigation: significant and unavoidable***		
3A.15-1s: Unacceptable LOS on Eastbound U.S. 50 between Folsom Boulevard and Prairie City Road (Freeway Segment 4). This freeway segment would degrade to an unacceptable LOS F during the p.m. peak hour and would experience an increase in the volume to capacity ratio under unacceptable LOS F conditions during the p.m. peak hour.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-1s: Participate in Fair Share Funding of Improvements to Reduce Impacts on Eastbound U.S. 50 between Folsom Boulevard and Prairie City Road (Freeway Segment 4). To ensure that Eastbound U.S. 50 operates at an acceptable LOS between Folsom Boulevard and Prairie City Road, an auxiliary lane must be constructed. This improvement was recommended in the Traffic Operations Analysis Report for the U.S. 50 Auxiliary Lane Project. This improvement is included in the proposed 50 Corridor Mobility Fee Program. The applicant shall pay its proportionate share of		

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CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

B (Beneficial) NI (No impact) LTS (Less than significant) PS (Potentially significant) S (Significant) SU (Significant and unavoidable)

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to Eastbound U.S. 50 between Folsom Boulevard and Prairie City Road (Freeway Segment 4). Implementation: Caltrans Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built. Enforcement: Caltrans ***Significance after Mitigation: significant and unavoidable***		
3A.15-1t: Unacceptable LOS on Eastbound U.S. 50 between El Dorado Hills Boulevard – Latrobe Road and Bass Lake Grade (Freeway Segment 9). This freeway segment would experience an increase in the volume to capacity ratio under unacceptable LOS F conditions during the p.m. peak.	Land	**NCP, PP, RIM, CD, RHD:** LTS
NCP, PP, RIM, CD, RHD: No mitigation measures are required. ***Significance after Mitigation: less than significant***		
3A.15-1u: Unacceptable LOS on Westbound U.S. 50 between Prairie City Road and Folsom Boulevard (Freeway Segment 16). This freeway segment would experience an increase in the volume to capacity ratio under unacceptable LOS F conditions during the a.m. peak hour.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-1u: Participate in Fair Share Funding of Improvements to Reduce Impacts on Westbound U.S. 50 between Prairie City Road and Folsom Boulevard (Freeway Segment 16). To ensure that Westbound U.S. 50 operates at an acceptable LOS between Prairie City Road and Folsom Boulevard, an auxiliary lane must be constructed. This improvement was recommended in the Traffic Operations Analysis Report for the U.S. 50 Auxiliary Lane Project. This improvement is included in the proposed 50 Corridor Mobility Fee Program. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to Westbound U.S. 50 between Prairie City Road and Folsom Boulevard (Freeway Segment 16). Implementation: Caltrans Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built. Enforcement: Caltrans ***Significance after Mitigation: significant and unavoidable***		

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.15-1v: Unacceptable LOS on Westbound U.S. 50 between Hazel Avenue and Sunrise Boulevard (Freeway Segment 18). This freeway segment would experience an increase in the volume to capacity ratio under unacceptable LOS F conditions during the a.m. peak hour.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-1v: Participate in Fair Share Funding of Improvements to Reduce Impacts on Westbound U.S. 50 between Hazel Avenue and Sunrise Boulevard (Freeway Segment 18). To ensure that Westbound U.S. 50 operates at an acceptable LOS between Hazel Avenue and Sunrise Boulevard, an auxiliary lane must be constructed. This improvement was recommended in the Traffic Operations Analysis Report for the U.S. 50 Auxiliary Lane Project, and included in the proposed Rancho Cordova Parkway interchange project. Improvements to this freeway segment must be implemented by Caltrans. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to Westbound U.S. 50 between Hazel Avenue and Sunrise Boulevard (Freeway Segment 18). Implementation: Caltrans Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement Enforcement: Caltrans ***Significance after Mitigation: significant and unavoidable***		
3A.15-1w: Unacceptable LOS at the U.S. 50 Eastbound/Folsom Boulevard Ramp Merge (Freeway Merge 4). This freeway merge would experience an increase in density under unacceptable LOS F conditions during the p.m. peak hour.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-1w: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Eastbound/Folsom Boulevard Ramp Merge (Freeway Merge 4). To ensure that Eastbound U.S. 50 operates at an acceptable LOS at the Folsom Boulevard merge, an auxiliary lane from the Folsom Boulevard merge to the Prairie City Road diverge must be constructed. This improvement was recommended in the Traffic Operations Analysis Report for the U.S. 50 Auxiliary Lane Project. This improvement is included in the proposed 50 Corridor Mobility Fee Program. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to the U.S. 50 Eastbound/Folsom Boulevard Ramp Merge (Freeway Merge 4). Implementation: Caltrans Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built. Enforcement: Caltrans ***Significance after Mitigation: significant and unavoidable***		

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CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.15-1x: Unacceptable LOS at the U.S. 50 Eastbound/Prairie City Road Diverge (Freeway Diverge 5). This freeway diverge would experience an increase in density under unacceptable LOS F conditions during the p.m. peak hour.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-1x: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Eastbound/Prairie City Road Diverge (Freeway Diverge 5). To ensure that Eastbound U.S. 50 operates at an acceptable LOS at the Prairie City Road off-ramp diverge, an auxiliary lane from the Folsom Boulevard merge must be constructed. This improvement was recommended in the Traffic Operations Analysis Report for the U.S. 50 Auxiliary Lane Project. This auxiliary lane improvement is included in the proposed 50 Corridor Mobility Fee Program. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Eastbound/Prairie City Road diverge (Freeway Diverge 5). Implementation: Caltrans Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built. Enforcement: Caltrans ***Significance after Mitigation: significant and unavoidable***		
3A.15-1y: Unacceptable LOS at the U.S. 50 Eastbound/Prairie City Road Merge (Freeway Merge 6). This freeway merge would degrade to an unacceptable LOS F during the p.m. peak hour.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-1y: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Eastbound/Prairie City Road Direct Merge (Freeway Merge 6). To ensure that Eastbound U.S. 50 operates at an acceptable LOS at the Prairie City Road on-ramp direct merge, an auxiliary lane to the East Bidwell Street – Scott Road diverge must be constructed. This auxiliary lane improvement is included in the proposed 50 Corridor Mobility Fee Program. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Eastbound/Prairie City Road direct merge (Freeway Merge 6). Implementation: Caltrans Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built. Enforcement: Caltrans ***Significance after Mitigation: significant and unavoidable***		

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CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.15-1z: Unacceptable LOS at the U.S. 50 Eastbound/Prairie City Road Flyover On-Ramp to Oak Avenue Parkway Off-Ramp Weave (Freeway Weave 8). This new freeway weave would operate an unacceptable LOS F during the p.m. peak hour.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-1z: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Eastbound/Prairie City Road Flyover On-Ramp to Oak Avenue Parkway Off-Ramp Weave (Freeway Weave 8). To ensure that Eastbound U.S. 50 operates at an acceptable LOS at the Prairie City Road flyover on-ramp to Oak Avenue Parkway off-ramp weave, an improvement acceptable to Caltrans should be implemented to eliminate the unacceptable weaving conditions. Such an improvement may involve a "braided ramp". The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Eastbound / Prairie City Road flyover on-ramp to Oak Avenue Parkway off-ramp weave (Freeway Weave 8). Implementation: Caltrans Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built. Enforcement: Caltrans ***Significance after Mitigation: significant and unavoidable***		
3A.15-1aa: Unacceptable LOS at the U.S. 50 Eastbound/Oak Avenue Parkway Loop Merge (Freeway Merge 9). This new freeway merge would operate an unacceptable LOS F during the p.m. peak.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-1aa: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Eastbound/Oak Avenue Parkway Loop Merge (Freeway Merge 9). To ensure that Eastbound U.S. 50 operates at an acceptable LOS at the Oak Avenue Parkway loop merge, an auxiliary lane to the East Bidwell Street – Scott Road diverge must be constructed. This auxiliary lane improvement is included in the proposed 50 Corridor Mobility Fee Program. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Eastbound/ Oak Avenue Parkway loop merge (Freeway Merge 9). Implementation: Caltrans Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built. Enforcement: Caltrans ***Significance after Mitigation: significant and unavoidable***		

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.15-1bb: Unacceptable LOS at the U.S. 50 Eastbound/El Dorado Hills Boulevard – Latrobe Road Merge (Freeway Merge 19). This freeway merge would experience an increase in density under unacceptable LOS F conditions during the p.m. peak hour. **NCP, PP, RIM, CD, RHD:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Land	**NCP, PP, RIM, CD, RHD:** LTS
3A.15-1cc: Unacceptable LOS at the U.S. 50 Westbound/El Dorado Hills Boulevard Diverge (Freeway Diverge 20). This freeway diverge would experience an increase in density under unacceptable LOS F conditions during the a.m. peak hour. **NCP, PP, RIM, CD, RHD:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Land	**NCP, PP, RIM, CD, RHD:** LTS
3A.15-1dd: Unacceptable LOS at the U.S. 50 Westbound/Empire Ranch Road Loop Ramp Merge (Freeway Merge 23). This freeway merge would operate at an unacceptable LOS F during the a.m. peak hour.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-1dd: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Westbound/Empire Ranch Road Loop Ramp Merge (Freeway Merge 23). To ensure that Westbound U.S. 50 operates at an acceptable LOS, the northbound Empire Ranch Road loop on ramp should start the westbound auxiliary lane that ends at the East Bidwell Street – Scott Road off ramp. The slip on ramp from southbound Empire Ranch Road would merge into this extended auxiliary lane. Improvements to this freeway segment must be implemented by Caltrans. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Westbound/Empire Ranch Road loop ramp merge (Freeway Merge 23). Implementation: Caltrans Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built. Enforcement: Caltrans ***Significance after Mitigation: significant and unavoidable***		

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.15-1ee: Unacceptable LOS at the U.S. 50 Westbound/Oak Avenue Parkway Loop Ramp Merge (Freeway Merge 29). This freeway merge would operate at an unacceptable LOS F during the a.m. peak hour.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-1ee: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Westbound/Oak Avenue Parkway Loop Ramp Merge (Freeway Merge 29). To ensure that Westbound U.S. 50 operates at an acceptable LOS, the northbound Oak Avenue Parkway loop on ramp should start the westbound auxiliary lane that ends at the Prairie City Road off ramp. The slip on ramp from southbound Oak Avenue Parkway would merge into this extended auxiliary lane. Improvements to this freeway segment must be implemented by Caltrans. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Westbound/Oak Avenue Parkway loop ramp merge (Freeway Merge 29). Implementation: Caltrans Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built. Enforcement: Caltrans ***Significance after Mitigation: significant and unavoidable***		
3A.15-1ff: Unacceptable LOS at the U.S. 50 Westbound/Prairie City Road Loop Ramp Merge (Freeway Merge 32). This freeway merge would degrade to an unacceptable LOS F during the a.m. peak hour.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-1ff: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Westbound/Prairie City Road Loop Ramp Merge (Freeway Merge 32). To ensure that Westbound U.S. 50 operates at an acceptable LOS at the Prairie City Road loop ramp merge, an auxiliary lane to the Folsom Boulevard off ramp diverge must be constructed. This auxiliary lane improvement is included in the proposed 50 Corridor Mobility Fee Program. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Westbound/Prairie City Road Loop Ramp Merge (Freeway Merge 32). Implementation: Caltrans Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built. Enforcement: Caltrans ***Significance after Mitigation: significant and unavoidable***		

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.15-1gg: Unacceptable LOS at the U.S. 50 Westbound/Prairie City Road Ramp Merge (Freeway Merge 33). This freeway merge would experience an increase in density under unacceptable LOS F conditions during the a.m. peak hour.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-1gg: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Westbound/Prairie City Road Direct Ramp Merge (Freeway Merge 33). To ensure that Westbound U.S. 50 operates at an acceptable LOS at the Prairie City Road direct ramp merge, an auxiliary lane to the Folsom Boulevard off ramp diverge must be constructed. This auxiliary lane improvement is included in the proposed 50 Corridor Mobility Fee Program. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Westbound/Prairie City Road direct ramp merge (Freeway Merge 33). Implementation: Caltrans Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built. Enforcement: Caltrans ***Significance after Mitigation: significant and unavoidable***		
3A.15-1hh: Unacceptable LOS at the U.S. 50 Westbound/Folsom Boulevard Diverge (Freeway Diverge 34). This freeway diverge would experience an increase in density under unacceptable LOS F conditions during the a.m. peak hour, and degrade from an acceptable LOS D to an unacceptable LOS F during the p.m. peak hour.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-1hh: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Eastbound/Folsom Boulevard Diverge (Freeway Diverge 34). To ensure that Westbound U.S. 50 operates at an acceptable LOS at the Folsom Boulevard Diverge, an auxiliary lane from the Prairie City Road loop ramp merge must be constructed. Improvements to this freeway segment must be implemented by Caltrans. This auxiliary lane improvement is included in the proposed 50 Corridor Mobility Fee Program. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Eastbound / Folsom Boulevard diverge (Freeway Diverge 34). Implementation: Caltrans Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built. Enforcement: Caltrans ***Significance after Mitigation: significant and unavoidable***		

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.15-1ii: Unacceptable LOS at the U.S. 50 Westbound/Hazel Avenue Ramp Merge (Freeway Merge 38). This freeway merge would experience an increase in density under unacceptable LOS F conditions during the a.m. peak hour.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-1ii: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Westbound/Hazel Avenue Direct Ramp Merge (Freeway Merge 38). To ensure that Westbound U.S. 50 operates at an acceptable LOS at the Hazel Avenue direct ramp merge, an auxiliary lane to the Sunrise Boulevard off ramp diverge must be constructed. This auxiliary lane improvement is included in the proposed 50 Corridor Mobility Fee Program. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to the U.S. 50 Westbound/Hazel Avenue direct ramp merge (Freeway Merge 38). Implementation: Caltrans Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built. Enforcement: Caltrans ***Significance after Mitigation: significant and unavoidable***		
3A.15-2: Increased Demand for Single-Occupant Automobile Travel in the Project Area. Project implementation would increase demand for single-occupant automobile travel on area roadways and intersections causing roadway and intersection impacts.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-2: Develop Commercial Support Services and Mixed-use Development Concurrent with Housing Development, and Develop and Provide Options for Alternative Transportation Modes. The project applicant(s) for all project phases shall develop commercial and mixed-use development concurrent with housing development, to the extent feasible in light of market realities and other considerations, to internalize vehicle trips. Pedestrian and bicycle facilities shall be implemented to the satisfaction of the City Public Works Department. To further minimize impacts from the increased demand on area roadways and intersections, the project applicant(s) for all project phases shall develop and implement safe and secure bicycle parking at schools and commercial centers to promote alternative transportation uses and reduce the volume of single-occupancy vehicles using area roadways and intersections. Implementation: City of Folsom and Applicant(s) Timing: Before approval of improvement plans for all project phases. Enforcement: City of Folsom Public Works Department. The project applicant(s) for all project phases shall participate in capital improvements and operating funds for transit service to increase the percent of travel by transit. The project's fair-share participation and the associated timing of the improvements and service shall be identified in the project conditions of approval and/or the project's development agreement. Improvements and service shall be coordinated, as necessary, with Folsom Stage Lines and Sacramento RT.		

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

Implementation: City of Folsom, Regional Transit, and Applicant(s)

Timing: As a condition of project approval and/or as a condition of the development agreement for all project phases.

Enforcement: City of Folsom Public Works Department.

Mitigation Measure 3A.15-2b: Participate in the City's Transportation System Management Fee Program. The project applicant(s) for all project phases shall pay an appropriate amount into the City's existing Transportation System Management Fee Program to reduce the number of single-occupant automobile travel on area roadways and intersections.

Implementation: City of Folsom and Applicant(s)

Timing: Concurrent with construction for all project phases.

Enforcement: City of Folsom Public Works Department.

Mitigation Measure 3A.15-2c: Participate with the 50 Corridor Transportation Management Association. The project applicant(s) for all project phases shall join and participate with the 50 Corridor Transportation Management Association to reduce the number of single-occupant automobile travel on area roadways and intersections.

Implementation: 50 Corridor Transportation Management Association and Applicant(s)

Timing: Concurrent with construction for all project phases.

Enforcement: City of Folsom Public Works Department.

Significance after Mitigation: significant and unavoidable

3A.15-3: Potential Impacts Associated with the City's Transportation Impact Fee Program. The City of Folsom has a transportation impact fee program to implement roadway facilities (those identified in the City General Plan for implementation before Year 2030) within the city limits. However, this fee program does not cover the new roadway facilities that will be needed due to the Proposed Project or alternative.	Land	**NCP, PP, RIM, CD, RHD:** significant

NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-3: Pay Full Cost of Identified Improvements that Are Not Funded by the City's Fee Program.

In accordance with Measure W, the project applicant(s) for all project phases shall provide fair-share contributions to the City's transportation impact fee program to fully fund improvements only required because of the Specific Plan.

Implementation: City of Folsom and Applicant(s)

Timing: As a condition of project approval and/or as a condition of the development agreement for all project phases.

Enforcement: City of Folsom Public Works Department.

Significance after Mitigation: significant and unavoidable

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Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.15-4: Increases to Peak-Hour and Daily Traffic Volumes, Resulting in Unacceptable Levels of Service, under Cumulative (2030) Conditions. Implementation of the Proposed Project (or alternatives) and other reasonably foreseeable development would cause an increase in a.m. peak traffic hour, p.m. peak traffic hour, and/or daily traffic volumes on area roadways, resulting in unacceptable LOS and warranting the need for improvements such as traffic signals and additional lanes under cumulative (2030) conditions. **NP:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Land	**NP:** no direct or indirect
3A.15-4a: Unacceptable LOS at the Sibley Street/Blue Ravine Road Intersection (Folsom Intersection 2) under Cumulative (2030) Conditions. This signalized intersection would degrade to an unacceptable level of service D or E with an increase of five or more seconds of delay during the a.m. peak traffic hour under cumulative (2030) conditions. **NCP, RIM:** No mitigation measures are required. **PP, CD, RHD: Mitigation Measure 3A.15-4a: The Applicant Shall Pay a Fair Share to Fund the Construction of Improvements to the Sibley Street/Blue Ravine Road Intersection (Folsom Intersection 2).** To ensure that the Sibley Street/Blue Ravine Road intersection operates at a LOS D with less than the Cumulative No Project delay, the northbound approach must be reconfigured to consist of two left-turn lane, two through lanes, and one dedicated right-turn lane. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the Sibley Street/Blue Ravine Road intersection (Folsom Intersection 2). Implementation: City of Folsom Public Works Department. Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built. Enforcement: City of Folsom Public Works Department ***Significance after Mitigation: less than significant***	Land	**NCP, RIM:** LTS **PP, CD, RHD:** significant

NP (No Action/No Project) NCP (No USACE Permit) PP (Proposed Project) RIM (Resource Impact Minimization)
CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

B (Beneficial) NI (No impact) LTS (Less than significant) PS (Potentially significant) S (Significant) SU (Significant and unavoidable)

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.15-4b: Unacceptable LOS at the Oak Avenue Parkway/East Bidwell Street Intersection (Folsom Intersection 6) under Cumulative (2030) Conditions. This signalized intersection would degrade to an unacceptable level of service D with an increase of five or more seconds of delay during the p.m. peak traffic hours under cumulative (2030) conditions.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-4b: The Applicant Shall Pay a Fair Share to Fund the Construction of Improvements to the Oak Avenue Parkway/East Bidwell Street Intersection (Folsom Intersection 6). To ensure that the Oak Avenue Parkway/East Bidwell Street intersection operates at an acceptable LOS, the eastbound (East Bidwell Street) approach must be reconfigured to consist of two left-turn lanes, four through lanes and a right-turn lane, and the westbound (East Bidwell Street) approach must be reconfigured to consist of two left-turn lanes, four through lanes, and a right-turn lane. It is against the City of Folsom policy to have eight lane roads because of the impacts to non motorized traffic and adjacent development; therefore, this improvement is infeasible. ***Significance after Mitigation: significant and unavoidable***		
3A.15-4c: Unacceptable LOS at the East Bidwell Street/College Street Intersection (Folsom Intersection 7) under Cumulative (2030) Conditions. Project or build alternative traffic would increase delay at this deficient intersection by more than 5 seconds during the p.m. peak traffic hour under cumulative (2030) conditions.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-7c: The Applicant Shall Pay a Fair Share to Fund the Construction of Improvements to the East Bidwell Street/College Street Intersection (Folsom Intersection 7). To ensure that the East Bidwell Street/College Street intersection operates at acceptable LOS C or better, the westbound approach must be reconfigured to consist of one left-turn lane, one left-through lane, and two dedicated right-turn lanes. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the East Bidwell Street/Nesmith Court intersection (Folsom Intersection 7). Implementation: City of Folsom Public Works Department. Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built. Enforcement: City of Folsom Public Works Department ***Significance after Mitigation: less than significant***		

NP (No Action/No Project) NCP (No USACE Permit) PP (Proposed Project) RIM (Resource Impact Minimization)
CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

B (Beneficial) NI (No impact) LTS (Less than significant) PS (Potentially significant) S (Significant) SU (Significant and unavoidable)

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.15-4d: Unacceptable LOS at the East Bidwell Street /Iron Point Road Intersection (Folsom Intersection 21) under Cumulative (2030) Conditions. This signalized intersection would degrade to an unacceptable LOS F during the p.m. peak traffic hours under the Proposed Project Alternative and all of the build alternatives under cumulative (2030) conditions.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-4d: The Applicant Shall Pay a Fair Share to Fund the Construction of Improvements to the East Bidwell Street/Iron Point Road Intersection (Folsom Intersection 21). To ensure that the East Bidwell Street /Iron Point Road intersection operates at an acceptable LOS, the northbound approach must be reconfigured to consist of two left-turn lanes, four through lanes and a right-turn lane, and the southbound approach must be reconfigured to consist of two left-turn lanes, four through lanes and a right-turn lane. It is against the City of Folsom policy to have eight lane roads because of the impacts to non motorized traffic and adjacent development; therefore, this improvement is infeasible. ***Significance after Mitigation: significant and unavoidable***		
3A.15-4e: Unacceptable LOS at the Serpa Way/ Iron Point Road Intersection (Folsom Intersection 23) under Cumulative (2030) Conditions. Traffic increases would increase the delay at this deficient intersection by more than 5 seconds under cumulative (2030) conditions.	Land	**NCP, PP, RIM:** LTS **CD, RHD:** significant
NCP, PP, RIM: No mitigation measures are required. **CD, RHD: Mitigation Measure 3A.15-4e: The Applicant Shall Pay a Fair Share to Fund the Construction of Improvements to the Serpa Way/ Iron Point Road Intersection (Folsom Intersection 23).** To improve LOS at the Serpa Way/ Iron Point Road intersection, the northbound approaches must be restriped to consist of one left-turn lane, one shared left-through lanes, and one right-turn lane. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the Serpa Way/Iron Point Road Intersection (Folsom Intersection 23). Implementation: City of Folsom Public Works Department. Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be build. Enforcement: City of Folsom Public Works Department ***Significance after Mitigation: less than significant***		

NP (No Action/No Project) NCP (No USACE Permit) PP (Proposed Project) RIM (Resource Impact Minimization)
CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

B (Beneficial) NI (No impact) LTS (Less than significant) PS (Potentially significant) S (Significant) SU (Significant and unavoidable)

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.15-4f: Unacceptable LOS at the Empire Ranch Road/Iron Point Road Intersection (Folsom Intersection 24) under Cumulative (2030) Conditions. During the p.m. peak traffic hour, this intersection would operate at LOS E or F with an increase in delay of 5 or more seconds under cumulative (2030) conditions.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-4f: The Applicant Shall Pay a Fair Share to Fund the Construction of Improvements to the Empire Ranch Road/Iron Point Road Intersection (Folsom Intersection 24). To ensure that the Empire Ranch Road / Iron Point Road intersection operates at a LOS D or better, all of the following improvements are required: ▸ The eastbound approach must be reconfigured to consist of one left-turn lane, two through lanes, and a right-turn lane. ▸ The westbound approach must be reconfigured to consist of two left-turn lanes, one through lane, and a through-right lane. ▸ The northbound approach must be reconfigured to consist of two left-turn lanes, three through lanes, and a right-turn lane. ▸ The southbound approach must be reconfigured to consist of two left-turn lanes, three through lanes, and a right-turn lane. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the Empire Ranch Road / Iron Point Road Intersection (Folsom Intersection 24). Implementation: City of Folsom Public Works Department. Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built. Enforcement: City of Folsom Public Works Department ***Significance after Mitigation: less than significant***		
3A.15-4g: Unacceptable LOS at the Oak Avenue Parkway/Easton Valley Parkway Intersection (Folsom Intersection 33) under Cumulative (2030) Conditions. This new signalized intersection would operate at an unacceptable LOS D during the a.m. peak traffic hour with the addition of Proposed Project Alternative and alternative traffic under cumulative (2030) conditions.	Land	**NCP, RIM:** LTS **PP, CD, RHD:** significant
NCP, RIM: No mitigation measures are required. **PP, CD, RHD: Mitigation Measure 3A.15-4g: The Applicant Shall Fund and Construct Improvements to the Oak Avenue Parkway/Easton Valley Parkway Intersection (Folsom Intersection 33).** To ensure that the Oak Avenue Parkway/Easton Valley Parkway intersection operates at an acceptable LOS the southbound approach must be reconfigured to consist of two left-turn lanes, two through lanes, and two right-turn lanes. The applicant shall fund and construct these improvements. Implementation: City of Folsom Public Works Department. Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which		

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CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

B (Beneficial) NI (No impact) LTS (Less than significant) PS (Potentially significant) S (Significant) SU (Significant and unavoidable)

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
project phase the improvement should be built. Enforcement: City of Folsom Public Works Department ***Significance after Mitigation: significant and unavoidable***		
3A.15-4h: LOS D at the Scott Road (East)/Easton Valley Parkway Intersection (Intersection 38) under Cumulative (2030) Conditions. This new signalized intersection would operate at LOS D during the p.m. peak traffic hour with project traffic under cumulative (2030) conditions. **NCP, PP, RIM, CD, RHD:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Land	**NCP, PP, RIM, CD, RHD:** LTS
3A.15-4i: Unacceptable LOS at the Grant Line Road/White Rock Road Intersection (Sacramento County Intersection 3) under Cumulative (2030) Conditions. This signalized intersection would degrade to an unacceptable LOS F during the a.m. peak traffic hours under cumulative (2030) conditions.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-4i: Participate in Fair Share Funding of Improvements to Reduce Impacts on the Grant Line Road/White Rock Road Intersection (Sacramento County Intersection 3). To ensure that the Grant Line Road/White Rock Road intersection operates at an acceptable LOS E or better this intersection should be replaced by some type of grade separated intersection or interchange. Improvements to this intersection are identified in the Sacramento County's Proposed General Plan. Implementation of these improvements would assist in reducing traffic impacts on this intersection by providing acceptable operation. Intersection improvements must be implemented by Sacramento County. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to the Grant Line Road/White Rock Road Intersection (Sacramento County Intersection 3). Implementation: Sacramento County Department of Transportation. Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built. Enforcement: Sacramento County Department of Transportation. ***Significance after Mitigation: significant and unavoidable***		

NP (No Action/No Project) NCP (No USACE Permit) PP (Proposed Project) RIM (Resource Impact Minimization)
CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

B (Beneficial) NI (No impact) LTS (Less than significant) PS (Potentially significant) S (Significant) SU (Significant and unavoidable)

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.15-4j: Unacceptable LOS on Grant Line Road between White Rock Road and Kiefer Boulevard (Sacramento County Roadway Segments 5-7) under Cumulative (2030) Conditions. Operating conditions of these deficient roadway segments would deteriorate and the V/C ratio would increase by more than 0.05 with project traffic under cumulative (2030) conditions.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-4j: Participate in Fair Share Funding of Improvements to Reduce Impacts on Grant Line Road between White Rock Road and Kiefer Boulevard (Sacramento County Roadway Segments 5-7). To improve operation on Grant Line Road between White Rock Road and Kiefer Boulevard, this roadway segment must be widened to six lanes. This improvement is proposed in the Sacramento County and the City of Rancho Cordova General Plans; however, it is not in the 2035 MTP. Improvements to this roadway segment must be implemented by Sacramento County and the City of Rancho Cordova. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to Grant Line Road between White Rock Road and Kiefer Boulevard (Sacramento County Roadway Segments 5-7). The identified improvement would more than offset the impacts specifically related to the Folsom South of U.S. 50 project on this roadway segment. Implementation: Sacramento County Department of Transportation. Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built. Enforcement: Sacramento County Department of Transportation. ***Significance after Mitigation: less than significant***		
3A.15-4k: Unacceptable LOS on Grant Line Road between Kiefer Boulevard and Jackson Highway (Sacramento County Roadway Segment 8) under Cumulative (2030) Conditions. Operating conditions of this deficient roadway segment would degrade by increasing the V/C by 0.05 with increased traffic under cumulative (2030) conditions.	Land	**NCP, PP, CD, RHD:** significant **RIM:** LTS
NCP, PP, CD, RHD: Mitigation Measure 3A.15-4k: Participate in Fair Share Funding of Improvements to Reduce Impacts on Grant Line Road between Kiefer Boulevard and Jackson Highway (Sacramento County Roadway Segment 8). To improve operation on Grant Line Road between Kiefer Boulevard Jackson Highway, this roadway segment could be widened to six lanes. This improvement is proposed in the Sacramento County and the City of Rancho Cordova General Plans; however, it is not in the 2035 MTP. Improvements to this roadway segment must be implemented by Sacramento County and the City of Rancho Cordova. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to Grant Line Road between Kiefer Boulevard and Jackson Highway (Sacramento County Roadway Segment 8). The identified improvement would more than offset the impacts specifically related to the Folsom South of U.S. 50 project on this roadway segment.		

NP (No Action/No Project) NCP (No USACE Permit) PP (Proposed Project) RIM (Resource Impact Minimization)
CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

B (Beneficial) NI (No impact) LTS (Less than significant) PS (Potentially significant) S (Significant) SU (Significant and unavoidable)

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
Implementation: Sacramento County Department of Transportation. Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built. Enforcement: Sacramento County Department of Transportation. **RIM:** No mitigation measures are required. ***Significance after Mitigation: less than significant***		
3A.15-4l: Unacceptable LOS on Hazel Avenue between Curragh Downs Drive and U.S. 50 Westbound Ramps (Sacramento County Roadway Segment s 12-13) under Cumulative (2030) Conditions. Operation of these deficient roadway segments degrade with the V/C ratio increasing by more than 0.05 with project and alternative traffic under cumulative (2030) conditions.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-4l: Participate in Fair Share Funding of Improvements to Reduce Impacts on Hazel Avenue between Curragh Downs Drive and U.S. 50 Westbound Ramps (Sacramento County Roadway Segment s 12-13). To improve operation on Hazel Avenue between Curragh Downs Drive and the U.S. 50 westbound ramps, this roadway segment could be widened to eight lanes. This improvement is inconsistent with Sacramento County's general plan because the county's policy requires a maximum roadway cross section of six lanes. Analysis shown later indicates that improvements at the impacted intersection in this segment can be mitigated (see Mitigation Measure 3A.15-4q). Improvements to impacted intersections on this segment will improve operations on this roadway segment and, therefore; mitigate this segment impact. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to Hazel Avenue between Curragh Downs Drive and U.S. 50 Westbound Ramps (Sacramento County Roadway Segments 12-13). Implementation: Sacramento County Department of Transportation. Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built. Enforcement: Sacramento County Department of Transportation. ***Significance after Mitigation: significant and unavoidable***		

NP (No Action/No Project) NCP (No USACE Permit) PP (Proposed Project) RIM (Resource Impact Minimization)
CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

B (Beneficial) NI (No impact) LTS (Less than significant) PS (Potentially significant) S (Significant) SU (Significant and unavoidable)

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.15-4m: Unacceptable LOS on White Rock Road between Grant Line Road and Prairie City Road (Sacramento County Roadway Segment 22) under Cumulative (2030) Conditions. Operation of this roadway segment would degrade this LOS F segment by increasing the V/C ratio by more than 0.05 with project and alternative traffic under cumulative (2030) conditions.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-4m: Participate in Fair Share Funding of Improvements to Reduce Impacts on White Rock Road between Grant Line Road and Prairie City Road (Sacramento County Roadway Segment 22). To improve operation on White Rock Road between Grant Line Road and Prairie City Road, this roadway segment must be widened to six lanes. This improvement is included in the 2035 MTP but is not included in the Sacramento County General Plan. Improvements to this roadway segment must be implemented by Sacramento County. The identified improvement would more than offset the impacts specifically related to the Folsom South of U.S. 50 project on this roadway segment. However, because of other development in the region that would substantially increase traffic levels, this roadway segment would continue to operate at an unacceptable LOS F even with the capacity improvements identified to mitigate Folsom South of U.S. 50 impacts. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to White Rock Road between Grant Line Road and Prairie City Road (Sacramento County Roadway Segment 22). Implementation: Sacramento County Department of Transportation. Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built. Enforcement: Sacramento County Department of Transportation. ***Significance after Mitigation: significant and unavoidable***		
3A.15-4n: Unacceptable LOS on White Rock Road between Empire Ranch Road and Carson Crossing Road (Sacramento County Roadway Segment 28) under Cumulative (2030) Conditions. Operating conditions on this roadway segment would deteriorate from an acceptable LOS D to an unacceptable LOS F with the Centralized Development , Reduced Hillside Development alternative under cumulative (2030) conditions, and deteriorate from an acceptable LOS D to an unacceptable LOS E with the Propose Project, No Federal Action and Resource Impact Minimization alternatives under cumulative (2030) conditions.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-4n: Participate in Fair Share Funding of Improvements to Reduce Impacts on White Rock Road between Empire Ranch Road and Carson Crossing Road (Sacramento County Roadway Segment 28). To improve operation on White Rock Road between Empire Ranch Road and Carson Crossing Road, this roadway segment must be widened to six lanes. Improvements to this roadway segment must be implemented by Sacramento County. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a		

NP (No Action/No Project) NCP (No USACE Permit) PP (Proposed Project) RIM (Resource Impact Minimization)
CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

B (Beneficial) NI (No impact) LTS (Less than significant) PS (Potentially significant) S (Significant) SU (Significant and unavoidable)

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
program established by that agency to reduce the impacts to White Rock Road between Empire Ranch Road and Carson Crossing Road (Sacramento County Roadway Segment 28). Implementation: Sacramento County Department of Transportation. Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built. Enforcement: Sacramento County Department of Transportation. ***Significance after Mitigation: significant and unavoidable***		
3A.15-4o: Unacceptable LOS at the White Rock Road/Carson Crossing Road Intersection (El Dorado County 1) under Cumulative (2030) Conditions. This signalized intersection would degrade to an unacceptable LOS F during the a.m. peak traffic hour under cumulative (2030) conditions.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-4o: Participate in Fair Share Funding of Improvements to Reduce Impacts on the White Rock Road/Carson Crossing Road Intersection (El Dorado County 1). To ensure that the White Rock Road/Carson Crossing Road intersection operates at an acceptable LOS, the eastbound right turn lane must be converted into a separate free right turn lane, or double right. Improvements to this intersection must be implemented by El Dorado County. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to the White Rock Road/Carson Crossing Road Intersection (El Dorado County 1). Implementation: El Dorado County Department of Public Works. Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built. Enforcement: El Dorado County Department of Public Works. ***Significance after Mitigation: significant and unavoidable***		
3A.15-4p: Unacceptable LOS at the Hazel Avenue/U.S. 50 Westbound Ramps Intersection (Caltrans Intersection 1) under Cumulative (2030) Conditions. This signalized intersection would degrade from an unacceptable LOS F during the a.m. and p.m. peak traffic hours with an increase in the delay at this intersection during the a.m. and p.m. peak traffic hours by more than 5 seconds under cumulative (2030) conditions.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-4p: Participate in Fair Share Funding of Improvements to Reduce Impacts on the Hazel Avenue/U.S. 50 Westbound Ramps Intersection (Caltrans Intersection 1). To ensure that the Hazel Avenue/U.S. 50 westbound ramps intersection operates at an acceptable LOS, the westbound approach must be reconfigured to consist of one dedicated left turn lane, one shared left- through lane and three dedicated right-		

NP (No Action/No Project) NCP (No USACE Permit) PP (Proposed Project) RIM (Resource Impact Minimization)
CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

B (Beneficial) NI (No impact) LTS (Less than significant) PS (Potentially significant) S (Significant) SU (Significant and unavoidable)

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

turn lanes. Improvements to this intersection must be implemented by Caltrans and Sacramento County. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to the Hazel Avenue/U.S. 50 Westbound Ramps Intersection (Caltrans Intersection 1)

Implementation: California Department of Transportation.

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: California Department of Transportation.

Significance after Mitigation: significant and unavoidable

3A.15-4q: Unacceptable LOS on Eastbound US 50 between Zinfandel Drive and Sunrise Boulevard (Freeway Segment 1) under Cumulative (2030) Conditions. Project traffic would increase on this LOS F freeway segment under cumulative (2030) conditions.

Land

NCP, PP, RIM, CD, RHD: significant

NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-4q: Participate in Fair Share Funding of Improvements to Reduce Impacts on Eastbound US 50 between Zinfandel Drive and Sunrise Boulevard (Freeway Segment 1). To ensure that Eastbound US 50 operates at an acceptable LOS between Zinfandel Drive and Sunrise Boulevard, an additional eastbound lane could be constructed. This improvement is not consistent with the Concept Facility in Caltrans State Route 50 Corridor System Management Plan; therefore, it is not likely to be implemented by Caltrans by 2030.

Construction of the Capitol South East Connector, including widening White Rock Road and Grant Line Road to six lanes with limited access, could divert some traffic from U.S. 50 and partially mitigate the project's impact. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to Eastbound U.S. 50 between Zinfandel Drive and Sunrise Boulevard (Freeway Segment 1).

Implementation: Capitol Southeast Connecter Joint Powers Authority.

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: Capitol Southeast Connecter Joint Powers Authority.

Significance after Mitigation: significant and unavoidable

NP (No Action/No Project) NCP (No USACE Permit) PP (Proposed Project) RIM (Resource Impact Minimization)
CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

B (Beneficial) NI (No impact) LTS (Less than significant) PS (Potentially significant) S (Significant) SU (Significant and unavoidable)

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.15-4r: Unacceptable LOS on Eastbound US 50 between Rancho Cordova Parkway and Hazel Avenue (Freeway Segment 3) under Cumulative (2030) Conditions. Project traffic would increase on this LOS F freeway segment under cumulative (2030) conditions.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-4r: Participate in Fair Share Funding of Improvements to Reduce Impacts on Eastbound US 50 between Rancho Cordova Parkway and Hazel Avenue (Freeway Segment 3). To ensure that Eastbound US 50 operates at an acceptable LOS between Rancho Cordova Parkway and Hazel Avenue, an additional eastbound lane could be constructed. This improvement is not consistent with the Concept Facility in Caltrans State Route 50 Corridor System Management Plan; therefore, it is not likely to be implemented by Caltrans by 2030. Construction of the Capitol South East Connector, including widening White Rock Road and Grant Line Road to six lanes with limited access, could divert some traffic off of U.S. 50 and partially mitigate the project's impact. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to Eastbound U.S. 50 between Rancho Cordova Parkway and Hazel Avenue (Freeway Segment 3). Implementation: Capitol Southeast Connecter Joint Powers Authority. Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built. Enforcement: Capitol Southeast Connecter Joint Powers Authority. ***Significance after Mitigation: significant and unavoidable***		
3A.15-4s: Unacceptable LOS on Eastbound US 50 between Folsom Boulevard and Prairie City Road (Freeway Segment 5) under Cumulative (2030) Conditions. This freeway segment would deteriorate from LOS E to LOS F during the a.m. and p.m. peak traffic hours with project and build alternative traffic under cumulative (2030) conditions.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-4s: Participate in Fair Share Funding of Improvements to Reduce Impacts on Eastbound US 50 between Folsom Boulevard and Prairie City Road (Freeway Segment 5). To ensure that Eastbound US 50 operates at an acceptable LOS between Folsom Boulevard and Prairie City Road, the eastbound auxiliary lane should be converted to a mixed flow lane that extends to and drops at the Oak Avenue Parkway off ramp (see mitigation measure 3A.15-4t). Improvements to this freeway segment must be implemented by Caltrans. This improvement is not consistent with the Concept Facility in Caltrans State Route 50 Corridor System Management Plan; therefore, it is not likely to be implemented by Caltrans by 2030. Construction of the Capitol South East Connector, including widening White Rock Road and Grant Line Road to six lanes with limited access, could divert some traffic off of U.S. 50 and partially mitigate the project's impact. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism		

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CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

paid for by applicant, to reduce the impacts to Eastbound U.S. 50 between Folsom Boulevard and Prairie City Road (Freeway Segment 5).

Implementation: Capitol Southeast Connecter Joint Powers Authority.

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: Capitol Southeast Connecter Joint Powers Authority.

Significance after Mitigation: significant and unavoidable

3A.15-7t: Unacceptable LOS on Eastbound US 50 between Prairie City Road and Oak Avenue Parkway (Freeway Segment 6) under Cumulative (2030) Conditions. This freeway segment would degrade to an unacceptable LOS F during the a.m. peak traffic hour with project and build alternative traffic, and this deficient freeway segment (LOS F) would experience higher volumes during the p.m. peak traffic hour with the addition of traffic under cumulative (2030) conditions.

Land

NCP, PP, RIM, CD, RHD: significant

NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-4t: Participate in Fair Share Funding of Improvements to Reduce Impacts on Eastbound US 50 between Prairie City Road and Oak Avenue Parkway (Freeway Segment 6). To ensure that Eastbound US 50 operates at an acceptable LOS between Prairie City Road and Oak Avenue Parkway, the northbound Prairie City Road slip on ramp should merge with the eastbound auxiliary lane that extends to and drops at the Oak Avenue Parkway off ramp (see Mitigation Measures 3A.15-4u, v and w), and the southbound Prairie City Road flyover on ramp should be braided over the Oak Avenue Parkway off ramp and start an extended full auxiliary lane to the East Bidwell Street – Scott Road off ramp. Improvements to this freeway segment must be implemented by Caltrans. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to Eastbound U.S. 50 between Prairie City Road and Oak Avenue Parkway (Freeway Segment 6).

Implementation: Capitol Southeast Connecter Joint Powers Authority.

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: Capitol Southeast Connecter Joint Powers Authority.

Significance after Mitigation: significant and unavoidable

NP (No Action/No Project) NCP (No USACE Permit) PP (Proposed Project) RIM (Resource Impact Minimization)
CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

B (Beneficial) NI (No impact) LTS (Less than significant) PS (Potentially significant) S (Significant) SU (Significant and unavoidable)

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.15-4u: Unacceptable LOS at the U.S. 50 Eastbound / Prairie City Road Slip Ramp Merge (Freeway Merge 6). Project and alternative traffic would increase at this LOS F freeway merge during the a.m. and p.m. peak traffic hours with project and build alternative traffic under cumulative (2030) conditions.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-4u: Participate in Fair Share Funding of Improvements to Reduce Impacts on the U.S. 50 Eastbound / Prairie City Road Slip Ramp Merge (Freeway Merge 6). To ensure that Eastbound US 50 operates at an acceptable LOS, the northbound Prairie City Road slip on ramp should start the eastbound auxiliary lane that extends to and drops at the Oak Avenue Parkway off ramp (see mitigation measure 3A.15-4u, w and x), and the southbound Prairie City Road flyover on ramp should be braided over the Oak Avenue Parkway off ramp and start an extended full auxiliary lane to the East Bidwell Street – Scott Road off ramp. Improvements to this freeway segment must be implemented by Caltrans. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Eastbound / Prairie City Road slip ramp merge (Freeway Merge 6). Implementation: California Department of Transportation. Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built. Enforcement: California Department of Transportation. ***Significance after Mitigation: significant and unavoidable***		
3A.15-4v: Unacceptable LOS at the U.S. 50 Eastbound / Prairie City Road Flyover On Ramp to Oak Avenue Parkway Off Ramp Weave (Freeway Weave 7). Project and alternative traffic would increase at this LOS F freeway weave during the a.m. and p.m. peak traffic hours with project and build alternative traffic under cumulative (2030) conditions.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-4v: Participate in Fair Share Funding of Improvements to Reduce Impacts on the U.S. 50 Eastbound / Prairie City Road Flyover On Ramp to Oak Avenue Parkway Off Ramp Weave (Freeway Weave 7). To ensure that Eastbound US 50 operates at an acceptable LOS, the northbound Prairie City Road slip on ramp should start the eastbound auxiliary lane that extends to and drops at the Oak Avenue Parkway off ramp (see mitigation measure 3A.15-4u, v and x), and the southbound Prairie City Road flyover on ramp should be braided over the Oak Avenue Parkway off ramp and start an extended full auxiliary lane to the East Bidwell Street – Scott Road off ramp. Improvements to this freeway segment must be implemented by Caltrans. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Eastbound / Prairie City Road Flyover On Ramp to Oak Avenue Parkway Off Ramp Weave (Freeway Weave 7). Implementation: Capitol Southeast Connecter Joint Powers Authority. Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which		

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CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
project phase the improvement should be built. Enforcement: Capitol Southeast Connecter Joint Powers Authority. ***Significance after Mitigation: significant and unavoidable***		
3A.15-4w: Unacceptable LOS at the U.S. 50 Eastbound / Oak Avenue Parkway Loop Ramp Merge (Freeway Merge 8). Project and alternative traffic would increase at this LOS F freeway merge during the a.m. and p.m. peak traffic hours with project traffic under cumulative (2030) conditions.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-4w: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Eastbound / Oak Avenue Parkway Loop Ramp Merge (Freeway Merge 8). To ensure that Eastbound US 50 operates at an acceptable LOS, the southbound Oak Avenue Parkway loop on ramp should merge with the eastbound auxiliary lane that starts at the southbound Prairie City Road braided flyover on ramp and ends at the East Bidwell Street – Scott Road off ramp (see mitigation measure 3A.15-4u, v and w). Improvements to this freeway segment must be implemented by Caltrans. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to U.S. 50 Eastbound / Oak Avenue Parkway Loop Ramp Merge (Freeway Merge 8). Implementation: Capitol Southeast Connecter Joint Powers Authority. Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built. Enforcement: Capitol Southeast Connecter Joint Powers Authority. ***Significance after Mitigation: significant and unavoidable***		
3A.15-4x: Unacceptable LOS at the U.S. 50 Westbound / Empire Ranch Road Loop Ramp Merge (Freeway Merge 27). This freeway merge would degrade to an unacceptable LOS F during the a.m. and p.m. peak traffic hours with the project and build alternative traffic under cumulative (2030) conditions.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-4x: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Westbound / Empire Ranch Road Loop Ramp Merge (Freeway Merge 27). To ensure that Westbound US 50 operates at an acceptable LOS, the northbound Empire Ranch Road loop on ramp should start the westbound auxiliary lane that ends at the East Bidwell Street – Scott Road off ramp. The slip on ramp from southbound Empire Ranch Road slip ramp would merge into this extended auxiliary lane. Improvements to this freeway segment must be implemented by Caltrans. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Westbound / Empire Ranch Road loop ramp merge (Freeway Merge 27). Implementation: Capitol Southeast Connecter Joint Powers Authority. Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which		

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CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
project phase the improvement should be built. Enforcement: Capitol Southeast Connecter Joint Powers Authority. ***Significance after Mitigation: significant and unavoidable***		
3A.15-4y: Unacceptable LOS at the U.S. 50 Westbound / Prairie City Road Loop Ramp Merge (Freeway Merge 35). Project and alternative traffic would increase at this LOS F freeway merge during the a.m. and p.m. peak traffic hours with project and build alternative traffic under cumulative (2030) conditions.	Land	**NCP, PP, RIM, CD, RHD:** significant
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.15-4y: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Westbound / Prairie City Road Loop Ramp Merge (Freeway Merge 35). To ensure that Westbound US 50 operates at an acceptable LOS, the northbound Prairie City Road loop on ramp should start the westbound auxiliary lane that continues beyond the Folsom Boulevard off ramp. The slip on ramp from southbound Prairie City Road slip ramp would merge into this extended auxiliary lane. Improvements to this freeway segment must be implemented by Caltrans. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Westbound / Prairie City Road Loop Ramp Merge (Freeway Merge 35). Implementation: California Department of Transportation. Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be build. Enforcement: California Department of Transportation. ***Significance after Mitigation: significant and unavoidable***		
3B.15 TRAFFIC AND TRANSPORTATION - WATER		
3B.15-1: Temporary and Short-Term Reduction in Roadway Capacity during Construction. Off-site Water Facility Alternatives construction could result in temporary reductions in roadway capacities, which could be substantial in relation to existing volume-to-capacity ratios on local roadways and congestion at intersections.	Water	**NCP, PA, 1, 1A:** direct & indirect PS (*construction*) direct significant (*heavy trucks*) **NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** direct PS, no indirect
NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A: Mitigation Measure 3B.15-1a: Prepare Traffic Control Plan. Prior to construction, the City shall prepare a Traffic Control Plan for roadways and intersections affected by Off-site Water Facilities-related construction. The Traffic Control Plan shall designate haul routes and comply with requirements in the encroachment permits issued by the City of Rancho Cordova, Sacramento County, and Caltrans. The Traffic Control Plan to be prepared by the construction contractor(s) shall, at minimum, include the following measures: ▸ Maintaining the maximum amount of travel lane capacity during non-construction periods, possible, and advanced notice to drivers through the provision of construction signage.		

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CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance

Mitigation

- Maintaining alternate one-way traffic flow past the lay down area and site access when feasible.
- Heavy trucks and other construction transport vehicles shall avoid the busiest commute hours (7 a.m. to 8 a.m. and 5 p.m. to 6 p.m. on weekdays).
- The City shall provide a minimum 72-hour advance notice of access restrictions for residents, businesses, and local emergency response agencies. This shall include the identification of alternative routes and detours to enable for the avoidance of the immediate construction zone.
- The City, in cooperation with its contractor(s), shall provide a phone number and community contact for inquiries about the schedule of the Off-site Water Facilities throughout the construction period. This information will be posted in a local newspaper, via the City's web site, or at City Hall and will be updated on a monthly basis.
- To the extent practical depending the alignment of the selected Off-site Water Facility Alternative, the City shall maximize opportunities for coordinated construction and installation of the conveyance pipeline with other planned roadway improvement projects.

Implementation: City of Folsom Utilities Department

Timing: Prior to and during construction of all Off-site Water Facilities

Enforcement:
1. For structural improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department.
2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department.
3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.

Mitigation Measure 3B.15-1b: Assess Pre-Off-site Water Facilities Roadway Conditions.

Prior to construction, the City's construction contractor(s) shall be responsible for assessing current road conditions for Off-site Water Facilities-related haul routes including the local access roads and develop post construction road restoration requirements. As part of the encroachment permitting process, an agreement shall be entered into with applicable jurisdictions prior to construction that details post construction road restoration requirements. Staff with the City of Rancho Cordova and Sacramento County shall review the post construction restoration standards for each of the affected roadways. The City shall perform roadway repairs or rehabilitation as necessary such that post construction requirements are met.

Implementation: City of Folsom Utilities Department

Timing: Prior to and during construction of all Off-site Water Facilities

Enforcement:
1. For structural improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department.
2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department.
3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.

Significance after Mitigation: less than significant

NP (No Action/No Project) NCP (No USACE Permit) PP (Proposed Project) RIM (Resource Impact Minimization)
CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

B (Beneficial) NI (No impact) LTS (Less than significant) PS (Potentially significant) S (Significant) SU (Significant and unavoidable)

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3B.15-2: Exceedance of Established Level of Service Standards for Local Roadways. The implementation of Off-site Water Facility Alternatives could cause traffic conditions to exceed, either individually or cumulatively, a level of service standard established by the County congestion management agency for designated roads or highways. **NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** Implement Mitigation Measure 3B.15-1a. ***Significance after Mitigation: less than significant***	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** direct PS, no indirect Direct & indirect LTS (*traffic-related impacts*)
3B.15-3: Increased Traffic Hazards on Local Roadways. Implementation of the Off-site Water Facility Alternatives could substantially increase hazards on local roadways due to the presence of incompatible uses, such as construction equipment. **NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** Implement Mitigation Measure 3B.15-1a. ***Significance after Mitigation: less than significant***	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** direct PS, no indirect
3B.15-4: Possible Inadequate Emergency Vehicle Access. Construction of the Off-site Water Facilities could result in disruptions to emergency access. **NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** direct LTS, no indirect
3A.16 UTILITIES AND SERVICE SYSTEMS - LAND		
3A.16-1: Increased Demand for On-Site Wastewater Collection and Conveyance Facilities and the Off-Site Force Main. Project implementation would result in increased generation of wastewater. **ON-SITE** **NP:** No mitigation measures are required. **NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.16-1: Submit Proof of Adequate On- and Off-Site Wastewater Conveyance Facilities and Implement On- and Off-Site Infrastructure Service Systems or Ensure That Adequate Financing Is Secured.** Before the approval of the final map and issuance of building permits for all project phases, the project applicant(s) of all project phases shall submit proof to the City of Folsom that an adequate wastewater	Land	**ON-SITE** **NP:** no direct or indirect **NCP, PP, RIM, CD, RHD:** direct PS, indirect impacts evaluated throughout EIR/EIS **OFF-SITE** Direct LTS, indirect impacts evaluated throughout EIR/EIS

NP (No Action/No Project) NCP (No USACE Permit) PP (Proposed Project) RIM (Resource Impact Minimization)
CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

B (Beneficial) NI (No impact) LTS (Less than significant) PS (Potentially significant) S (Significant) SU (Significant and unavoidable)

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
conveyance system either has been constructed or is ensured through payment of the City's facilities augmentation fee as described under the Folsom Municipal Code Title 3, Chapter 3.40, "Facilities Augmentation Fee – Folsom South Area Facilities Plan," or other sureties to the City's satisfaction. Both on-site wastewater conveyance infrastructure and off-site force main sufficient to provide adequate service to the project shall be in place for the amount of development identified in the tentative map before approval of the final map and issuance of building permits for all project phases, or their financing shall be ensured to the satisfaction of the City. Implementation: The project applicant(s) of all project phases. Timing: Before approval of final maps and issuance of building permits for any project phases. Enforcement: City of Folsom Community Development Department and City of Folsom Public Works Department. **OFF-SITE** No mitigation measures are required. ***Significance after Mitigation: less than significant***		
3A.16-2: Increased Demand for SRCSD Off-Site Wastewater Collection and Conveyance Facilities. The wastewater generated within the 3,313-acre SRCSD service area would require off-site collection facilities to the Folsom East Interceptor. **ON-SITE** **NP:** No mitigation measures are required. **NCP, PP, RIM, CD, RHD:** No mitigation measures are required. **OFF-SITE** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Land	**ON-SITE** **NP:** no direct or indirect **NCP, PP, RIM, CD, RHD:** direct LTS, no indirect **OFF-SITE** No direct or indirect
3A.16-3: Increased Demand for SRWTP Wastewater Treatment Plant Facilities. Project implementation would result in increased generation of wastewater. Collected wastewater flows from the 3,313-acre SRCSD portion of the SPA would ultimately be transported to the SRWTP for treatment and disposal. **ON-SITE** **NP:** No mitigation measures are required.	Land	**ON-SITE** **NP:** no direct or indirect **NCP, PP, RIM, CD, RHD:** direct PS, indirect SU **OFF-SITE** Direct LTS & indirect impacts evaluated throughout EIR/EIS

NP (No Action/No Project) NCP (No USACE Permit) PP (Proposed Project) RIM (Resource Impact Minimization)
CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

B (Beneficial) NI (No impact) LTS (Less than significant) PS (Potentially significant) S (Significant) SU (Significant and unavoidable)

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.16-3: Demonstrate Adequate SRWTP Wastewater Treatment Capacity. The project applicant(s) of all project phases shall demonstrate adequate capacity at the SRWTP for new wastewater flows generated by the project. This shall involve preparing a tentative map–level study and paying connection and capacity fees as identified by SRCSD. Approval of the final map and issuance of building permits for all project phases shall not be granted until the City verifies adequate SRWTP capacity is available for the amount of development identified in the tentative map.

Implementation: The project applicant(s) of all project phases.

Timing: Before approval of final maps and issuance of building permits for any project phases.

Enforcement: City of Folsom Community Development Department and City of Folsom Public Works Department.

OFF-SITE

No mitigation measures are required.

Significance after Mitigation: significant and unavoidable

3A.16-4: Increased Demand for EID Off-Site Wastewater Collection and Conveyance Facilities. The wastewater generated within the 189-acre EID service area would require off-site wastewater collection and conveyance facilities to the EID facility.	Land	**ON-SITE** **NP:** no direct or indirect **NCP, PP, RIM, CD, RHD:** direct & indirect PS **OFF-SITE** No direct or indirect

ON-SITE

NP: No mitigation measures are required.

NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.16-4: Submit Proof of Adequate EID Off-Site Wastewater Conveyance Facilities and Implement EID Off-Site Infrastructure Service Systems or Ensure That Adequate Financing Is Secured. Before the approval of the final map and issuance of building permits for all project phases, the project applicant(s) of all project phases shall obtain proof from EID that an adequate wastewater conveyance system either has been constructed or is ensured through the use of bonds or other sureties. The project applicants of all project phases shall submit this proof to the City of Folsom. EID off-site wastewater conveyance infrastructure sufficient to provide adequate service to project shall be in place for the amount of development identified in the tentative map before approval of the final map and issuance of building permits for all project phases, or their financing shall be ensured to the satisfaction of the City.

Implementation: The project applicant(s) of all project phases.

Timing: Before approval of final maps and issuance of building permits for any project phase.

Enforcement: City of Folsom Community Development Department and City of Folsom Public Works Department.

OFF-SITE

No mitigation measures are required.

Significance after Mitigation: potentially significant and unavoidable

NP (No Action/No Project) NCP (No USACE Permit) PP (Proposed Project) RIM (Resource Impact Minimization)
CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.16-5: Increased Demand for El Dorado Hills Wastewater Treatment Plant Facilities. Project implementation would result in increased generation of wastewater. Collected wastewater flows from the 189-acre EID portion of the SPA would ultimately be transported to the El Dorado Hills WWTP for treatment and disposal.	Land	**ON-SITE** **NP:** no direct or indirect **NCP, PP, RIM, CD, RHD:** direct & indirect PS **OFF-SITE** No direct or indirect
ON-SITE **NP:** No mitigation measures are required. **PP: Mitigation Measure 3A.16-5: Demonstrate Adequate El Dorado Hills Wastewater Treatment Plant Capacity.** The project applicant(s) of all project phases shall demonstrate adequate capacity at the El Dorado Hills WWTP for new wastewater flows generated by project development. This shall involve preparing a tentative map–level study and paying connection and capacity fees as identified by EID. Approval of the final map and issuance of building permits for all project phases shall not be granted until the City verifies adequate El Dorado Hills WWTP capacity is available for the amount of development identified in the tentative map. Implementation: The project applicant(s) of all project phases. Timing: Before approval of final maps and issuance of building permits for any project phases involving the El Dorado Hills WWTP. Enforcement: City of Folsom Community Development Department and City of Folsom Public Works Department. **RIM, CD, RHD, NF:** Implement Mitigation Measure 3A.16-6. **OFF-SITE** No mitigation measures are required. ***Significance after Mitigation: potentially significant and unavoidable***		
3A.16-6: Short-Term Generation of Solid Waste during Project Construction. Project construction would generate short-term construction-related debris and waste.	Land	**ON-SITE** **NP:** direct LTS, no indirect **NCP, PP, RIM, CD, RHD:** direct LTS, no indirect **OFF-SITE** No direct or indirect
NP: No mitigation measures are required. **NCP, PP, RIM, CD, RHD:** No mitigation measures are required. ***Significance after Mitigation: less than significant***		

NP (No Action/No Project) NCP (No USACE Permit) PP (Proposed Project) RIM (Resource Impact Minimization)
CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

B (Beneficial) NI (No impact) LTS (Less than significant) PS (Potentially significant) S (Significant) SU (Significant and unavoidable)

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.16-7: Increased Long-Term Generation of Solid Waste. Project implementation would increase long-term solid-waste generation. **NP, NCP, PP, RIM, CD, RHD:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Land	**ON-SITE** **NP:** direct LTS, no indirect **NCP, PP, RIM, CD, RHD:** direct LTS, no indirect **OFF-SITE** No direct or indirect
3A.16-8: Increased Demand for Electricity and Infrastructure. Project implementation would increase the demand for electricity and electrical infrastructure. **NP, NCP, PP, RIM, CD, RHD:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Land	**ON-SITE** **NP:** direct LTS, no indirect **NCP, PP, RIM, CD, RHD:** direct LTS, indirect impacts evaluated throughout EIR/EIS **OFF-SITE** No direct or indirect
3A.16-9: Increased Demand for Natural Gas and Infrastructure. Project implementation would increase the demand for natural gas and infrastructure and would include the extension of existing natural gas pipelines. **NP, NCP, PP, RIM, CD, RHD:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Land	**ON-SITE** **NP:** direct LTS, no indirect **NCP, PP, RIM, CD, RHD:** direct LTS, indirect impacts evaluated throughout EIR/EIS **OFF-SITE** No direct or indirect

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.16-10: Increased Demand for Telecommunications Service and Infrastructure. Project implementation would increase the demand for telecommunications service and infrastructure and would include the extension of existing telecommunication lines. **NP, NCP, PP, RIM, CD, RHD:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Land	**ON-SITE** **NP:** direct LTS, no indirect **NCP, PP, RIM, CD, RHD:** direct LTS, indirect impacts evaluated throughout EIR/EIS **OFF-SITE** No direct or indirect
3A.16-11: Increased Demand for Cable Television and Communications Service and Infrastructure. Project implementation would increase the demand for cable television service and infrastructure and would include the extension of existing cable television lines. **NP, NCP, PP, RIM, CD, RHD:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Land	**ON-SITE** **NP:** direct LTS, no indirect **NCP, PP, RIM, CD, RHD:** direct LTS, indirect impacts evaluated throughout EIR/EIS **OFF-SITE** No direct or indirect
3A.16-12: Increased Energy Demand. Project implementation would increase energy consumption during construction and operation. **NP, NCP, PP, RIM, CD, RHD:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Land	**ON-SITE** **NP:** direct LTS, no indirect **NCP, PP, RIM, CD, RHD:** direct LTS, indirect uncertain **OFF-SITE** direct LTS, no indirect

NP (No Action/No Project) NCP (No USACE Permit) PP (Proposed Project) RIM (Resource Impact Minimization)
CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3B.16 UTILITIES AND SERVICE SYSTEMS - WATER		
3B.16-1: Generation of Wastewater. The operation of the Off-site Water Facility Alternatives would generate wastewater that would require off-site conveyance and treatment. **NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** direct & indirect LTS
3B.16-2: Changes in Operation of the Central Valley Project Water Supply Entitlement. The operation of the Off-site Water Facility Alternatives would not infringe upon the water rights of other legal users of water. **NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** direct LTS & no indirect
3B.16-3: Potential Disruption to Existing Utilities and Infrastructure. Construction of the Off-site Water Facilities has the potential to disrupt existing public and private utilities and infrastructure.	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** direct PS & no indirect
NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A: Mitigation Measure 3B.16-3a: Minimize Utility Conflicts by Implementing an Underground Services Alert. Underground utilities and service connections shall be identified prior to commencing any excavation work through the implementation of an Underground Services Alert (USA). The exact utility locations will be determined by hand-excavated test pits dug at locations determined and approved by the construction manager (also referred to as "pot-holing"). Temporary disruption of service may be required to allow for construction. No service on such lines would be disrupted until prior approval is received from the construction manager and the service provider. Implementation: City of Folsom Utilities Department Timing: Prior to construction of all Off-site Water Facilities Enforcement: Public and Private Utilities, where applicable, including: Sacramento County Sanitation District, Pacific Gas and Electric, Sacramento Municipal Utility District, City of Folsom Public Works Department, Sacramento County Department of Water Resources, Sacramento County Water Agency, City of Rancho Cordova Public Works Department, Sacramento County Roads and Airports, Golden State Water Company, and Aerojet Corporation. **Mitigation Measure 3B.16-3b: Coordinate with Utility Providers and Implement Appropriate Installation Methods to Minimize Potential Utility Service Disruptions.** Prior to installation, the City shall consult with SCWA, SRCSD, CSD-1, and PG&E to determine proper installation methods and final design criteria to minimize the potential for disruptions to existing and planned utilities. Implementation: City of Folsom Utilities Department		

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CD (Centralized Development) RHD (Reduced Hillside Development) PA (Preferred Off-site Water Facility Alternative)

B (Beneficial) NI (No impact) LTS (Less than significant) PS (Potentially significant) S (Significant) SU (Significant and unavoidable)

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
Timing: Prior to construction of all Off-site Water Facilities Enforcement: Public and Private Utilities, where applicable, including: Sacramento County Sanitation District, Pacific Gas and Electric, Sacramento Municipal Utility District, City of Folsom Public Works Department, Sacramento County Department of Water Resources, Sacramento County Water Agency, City of Rancho Cordova Public Works Department, Sacramento County Roads and Airports, Golden State Water Company, and Aerojet Corporation. ***Significance after Mitigation: less than significant***		
3B.16-4: Increased Generation of Solid Waste. Construction and operation of the Off-site Water Facilities would generate solid waste, which could impact the City's ability to comply with solid waste diversion requirements of the state.	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** direct LTS & no indirect
NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A: No mitigation measures are required. ***Significance after Mitigation: less than significant***		
3B.16-5: Potential Inefficient Energy Consumption. Construction and operation of the Off-site Water Facilities could result in the inefficient consumption of energy thereby adversely affecting current and future energy conservation efforts.	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** direct PS
NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A: Implement Mitigation Measures 3B.4-1a and 3B.4-1b. ***Significance after Mitigation: less than significant***		
3B.17 GROUNDWATER - WATER		
3B.17-1: Exceedance of Water Quality Standards and Requirements for Groundwater. The Off-site Water Facilities could generate discharges to or contribute to the depletion of groundwater resources thereby potentially directly and indirectly violating water quality standards or waste discharge requirements.	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** direct PS & no indirect
NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A: Mitigation Measure 3B.17-1a: Implement Construction Dewatering Best Management Practices. During construction at site locations containing high groundwater, if groundwater from dewatering activities cannot be contained within the construction area (e.g. pipeline corridor, WTP), it shall be pumped to an authorized onsite land area, existing detention facilities, or Baker tanks or equivalent with sufficient capacity to control the volume of groundwater. Tanks shall be equipped with either a gel coagulant, a filter system, or other containment to remove sediment. The Off-site Water Facilities Stormwater Pollution Prevention Plan (SWPPP) shall include BMPs, as appropriate, to retain, treat, and dispose of groundwater from dewatering activities. Measures shall include, but not limited to, the following: ▸ temporarily retain pumped groundwater, as appropriate, to reduce turbidity and concentrations of suspended sediments before discharge to surface waterways; ▸ convey pumped groundwater to a suitable land disposal area capable of percolating flows; and/or		

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
▸ incorporate other applicable measures from the Caltrans Storm Water Quality Handbook, Section 7: Dewatering Operations (2004). Implementation: City of Folsom Utilities Department Timing: Prior to and during construction Enforcement: 1. California Department of Fish and Game or Regional Water Quality Control Board 2. City of Folsom Community Development Department. 3. Sacramento County Planning Department or City of Rancho Cordova Planning Department for improvements within their respective jurisdictions. **Mitigation Measure 3B.17-1b: Implement a Dewatering Discharge Monitoring Program.** A groundwater discharge monitoring program shall be implemented to ensure that receiving water quality does not exceed levels that would impact aquatic resources and agricultural use. If monitoring reveals that water quality would impact these beneficial uses, discharges to surface waterways shall be reduced or diluted to acceptable levels, or terminated. If discharges are reduced or terminated, groundwater shall be disposed through land application. Groundwater collected during dewatering shall be tested for contamination prior to disposal and comply with Central Valley RWQCB requirements. Implementation: City of Folsom Utilities Department Timing: Prior to and during construction Enforcement: 1. California Department of Fish and Game or Regional Water Quality Control Board 2. City of Folsom Community Development Department. 3. Sacramento County Planning Department or City of Rancho Cordova Planning Department for improvements within their respective jurisdictions. ***Significance after Mitigation: less than significant***		
3B.17-2: Depletion of Groundwater Supplies Through Pumping. The Off-site Water Facilities is unlikely to substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater levels. **NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** direct LTS & no indirect

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3B.17-3: Alteration of Surface Water Hydrology through Substantial Groundwater Pumping. Substantial groundwater pumping from the Excelsior Well Field required by Off-site Water Facilities operations could alter existing surface hydrology. **NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** No mitigation measures are required. ***Significance after Mitigation: less than significant***	Water	**NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, & 4A:** direct LTS & no indirect
3A.18 WATER SUPPLY - LAND		
3A.18-1: Increased Demand for Water Supplies. Project water demands would require the acquisition of surface water entitlements from the Natomas Central Mutual Water Company to provide a reliable water supply.	Land	**ON-SITE** **NP:** no direct or indirect **NCP, PP, RIM, CD, RHD:** direct PS **OFF-SITE** Direct LTS, indirect impacts evaluated throughout EIR/EIS

NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.18-1: Submit Proof of Surface Water Supply Availability.

a. Prior to approval of any small-lot tentative subdivision map subject to Government Code Section 66473.7 (SB 221), the City shall comply with that statute. Prior to approval of any small-lot tentative subdivision map for a proposed residential project not subject to that statute, the City need not comply with Section 66473.7, or formally consult with any public water system that would provide water to the affected area; nevertheless, the City shall make a factual showing or impose conditions similar to those required by Section 66473.7 to ensure an adequate water supply for development authorized by the map.

b. Prior to recordation of each final subdivision map, or prior to City approval of any similar project-specific discretionary approval or entitlement required for nonresidential uses, the project applicant(s) of that project phase or activity shall demonstrate the availability of a reliable and sufficient water supply from a public water system for the amount of development that would be authorized by the final subdivision map or project-specific discretionary nonresidential approval or entitlement. Such a demonstration shall consist of information showing that both existing sources are available or needed supplies and improvements will be in place prior to occupancy.

Implementation: The project applicant(s) of all project phases.

Timing: Before approval of final maps and issuance of building permits for any project phases.

Enforcement: City of Folsom Community Development Department and City of Folsom Public Works Department.

Significance after Mitigation: less than significant

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
3A.18-2: Increased Demand for Off-Site Water Conveyance and Treatment Facilities. Project implementation would result in increased demand for off-site water treatment facilities to deliver water to customers on the project site.	Land	**ON-SITE** **NP:** no direct or indirect **NCP, PP, RIM, CD, RHD:** direct PS, indirect impacts evaluated throughout EIR/EIS **OFF-SITE** Direct LTS, indirect impacts evaluated throughout EIR/EIS
NCP, PP, RIM, CD, RHD: Mitigation Measure 3A.18-2a: Submit Proof of Adequate Off-Site Water Conveyance Facilities and Implement Off-Site Infrastructure Service System or Ensure That Adequate Financing Is Secured. Before the approval of the final map and issuance of building permits for all project phases, the project applicant(s) of all project phases shall submit proof to the City of Folsom that an adequate off-site water conveyance system either has been constructed or is ensured or other sureties to the City's satisfaction. The off-site water conveyance infrastructure sufficient to provide adequate service to the project shall be in place for the amount of development identified in the tentative map before approval of the final map and issuance of building permits for all project phases, or their financing shall be ensured to the satisfaction of the City. Implementation: The project applicant(s) of all project phases. Timing: Before approval of final maps and issuance of building permits for any project phases. Enforcement: City of Folsom Community Development Department and City of Folsom Public Works Department. **Mitigation Measure 3A.18-2b: Demonstrate Adequate Off-Site Water Treatment Capacity (if the Off-Site Water Treatment Plant Option is Selected).** If an off-site water treatment plant (WTP) alternative is selected (as opposed to the on-site WTP alternative), the project applicant(s) of all project phases shall demonstrate adequate capacity at the off-site WTP. This shall involve preparing a tentative map–level study and paying connection and capacity fees as determined by the City. Approval of the final project map shall not be granted until the City verifies adequate water treatment capacity either is available or is certain to be available when needed for the amount of development identified in the tentative map before approval of the final map and issuance of building permits for all project phases. Implementation: The project applicant(s) of all project phases. Timing: Before approval of final maps and issuance of building permits for any project phases. Enforcement: City of Folsom Community Development Department and City of Folsom Public Works Department. ***Significance after Mitigation: less than significant***		

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
CUMULATIVE - LAND		
Land Use Compatibility with High-Volume Arterial Roadways. When quarry truck trips are added to modeled roadway segments before the year 2030, traffic volumes within 400 feet of sensitive receptors that would be constructed in the SPA could result in exposure of those receptors to high levels of toxic air contaminants (see Table 4-4). Therefore, this direct impact would be potentially significant. No indirect impacts would occur.	Land	

Cumulative Mitigation Measure AIR-1-Land: Implement Measures to Reduce Exposure of Sensitive Receptors to Operational Emissions of Toxic Air Contaminants from Quarry Truck Traffic.

The City of Folsom does not have direct jurisdiction over the Teichert, DeSilva Gates, or Walltown quarry project applicants as these projects are located within the unincorporated portion of the County of Sacramento. The City's authority to control the activities of the quarry trucks includes restrictions or actions that would be applicable within the City's jurisdictional boundaries. For example, the City could designate truck routes through the City consistent with California Vehicle Code section 21101(c), including truck routes in the Folsom South of U.S. 50 project area, so as to prohibit or limit quarry trucks' use of City roads adjacent to areas where projected truck traffic volumes would otherwise result in exposure of sensitive receptors to operational emissions of toxic air contaminants from quarry truck traffic and/or traffic safety hazards. If this approach is selected by the City, then prior to the approval of the first tentative subdivision map or any other discretionary project approval that would place sensitive receptors along any roads the quarry trucks could use to access U.S. 50, the City's traffic department and consultants shall analyze and propose to the City Council for approval designated truck routes from the quarries through City jurisdiction to access U.S. 50 that would allow a level of truck traffic that would avoid any potentially significant impact on sensitive receptors from toxic air contaminant emissions within the Folsom South of U.S. 50 project area, as well as any other existing or planned uses that would contain sensitive receptors, so as to ensure that the risk of cancer to sensitive receptors is no more than 296 in one million (or such different threshold of significance recommended by SMAQMD or ARB at the time, if any) as may be determined by a Health Risk Assessment (HRA) paid for by the applicant.

As an alternative to designating truck routes, the following measures could be voluntarily implemented by the quarry project applicant(s) (Teichert, DeSilva Gates, and Granite [Walltown]) to reduce exposure of sensitive receptors to TACs generated by quarry truck traffic and are encouraged:

- The quarry project applicant(s) should meet with the City of Folsom to discuss mitigation strategies, implementation, and cost.
- A site-specific, project-level screening analysis and/or Health Risk Assessment (HRA) should be conducted by the City of Folsom and funded by the quarry truck applicant(s) for all proposed sensitive receptors (e.g., residences, schools) in the SPA that would be located along the sides of roadway segments that are identified in Table 4-4 as being potentially significant under any of the analyzed scenarios. Each project-level analysis shall be performed according to the standards set forth by SMAQMD for the purpose of disclosure to the public and decision makers. The project-level analysis shall account for the location of the receptors relative to the roadway, their distance from the roadway, the projected future traffic volume for the year 2030 (including the proportion of diesel trucks), and emission rates representative of the vehicle fleet for the year when the sensitive land uses would first become operational and/or occupied. If the incremental increase in cancer risk determined by in the HRA exceeds 296 in one million (or a different threshold of significance recommended by SMAQMD or ARB at the time, if any), then project design mitigation should be employed, which may include the following:

Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance

Mitigation

- Increase the setback distance between the roadway and affected receptor. If this mitigation measure is determined by the City of Folsom to be necessary, based on the results of the HRA, the quarry truck applicant(s) should pay the Folsom South of 50 Specific Plan project applicant(s) and the City of Folsom a fee that shall serve as compensation for lost development profit and lost City tax revenues, all as determined by the parties. Said mitigation fee shall be determined in consultation with the quarry project applicant(s), the Folsom South of 50 Specific Plan project applicant(s), and the City of Folsom. No quarry trucks shall be allowed to pass on any roadway segment immediately adjacent to or within the SPA until said mitigation fees are paid.
- Implement tiered tree planting of fine-needle species, such as redwood, along the near side of the roadway segments and, if feasible, along the roadway 500 feet in both directions of the initial planting (e.g., 500 feet north and south of a roadway that runs east-west) to enhance the dispersion and filtration of mobile-source TACs associated with the adjacent roadway. These trees should be planted at a density such that a solid visual buffer is achieved after the trees reach maturity, which breaks the line of sight between U.S. 50 and the proposed homes. These trees should be planted before occupation of any affected sensitive land uses. This measure encourages the planting of these trees in advance of the construction of potentially affected receptors to allow the trees to become established and progress toward maturity. The life of these trees should be maintained through the duration of the quarry projects. The planting, cost, and ongoing maintenance of these trees should be funded by the quarry project applicant(s).
- To improve the indoor air quality at affected receptors, implement the following measures before the occupancy of the affected residences and schools:
  - equip all affected residences and school buildings developed in the SPA with High Efficiency Particle Arresting (HEPA) filter systems at all mechanical air intake points to the interior rooms;
  - use the heating, ventilation, and air conditioning (HVAC) systems to maintain all residential units under positive pressure at all times;
  - locate air intake systems for HVAC as far away from roadway air pollution sources as possible; and
  - Develop and implement an ongoing education and maintenance plan about the filtration systems associated with HVAC for residences and schools.

To the extent this indoor air quality mitigation would not already be implemented as part of the Folsom South of 50 Specific Plan project development, this mitigation should be paid for by the quarry project applicant(s) before any quarry trucks are allowed to pass on any roadway that is within 400 feet of any residence or school within the SPA.

Implementation: The project applicant(s) of the Folsom South of 50 Specific Plan project.

Timing: Prior to approval of first tentative map or discretionary approval within SPA that would place sensitive receptors along roadways that quarry trucks would reasonably use to access U.S. Highway 50.

Enforcement: City of Folsom Community Development Department.

Significance after Mitigation: less than significant

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		
CUMULATIVE - NOISE		
Compatibility of Sensitive Land Uses with the Ambient Noise Environment. The 60-dB L_{dn}/CNEL noise contours for adjacent roadways (i.e., U.S. 50, White Rock Road, and Prairie City Road) with the inclusion of projected quarry truck trips completely encompass the SPA. Even considering that a typical 6-foot sound wall would reduce noise levels from approximately 5-6 dB and for each additional foot of wall another 1 dB (Caltrans 1998), and incorporating the maximum setback distance feasible, noise levels would still exceed applicable standards at those sensitive uses proposed as part of the project. Thus, the incremental contribution of the "Land" portion of the project to this significant cumulative impact would be cumulatively considerable.	Land	

Cumulative Mitigation Measure Noise-1-Land: Implement Measures to Reduce Exposure of Sensitive Receptors to Increased Traffic Noise Levels from Quarry Truck Traffic.

The City of Folsom does not have direct jurisdiction over the Teichert, DeSilva Gates, or Walltown quarry project applicants as these projects are located within the unincorporated portion of the County of Sacramento. The City's authority to control the activities of the quarry trucks includes restrictions or actions that would be applicable within the City's jurisdictional boundaries. For example, the City could designate truck routes through the City consistent with California Vehicle Code section 21101(c), including truck routes in the Folsom South of U.S. 50 project area, so as to prohibit or limit quarry trucks' use of City roads adjacent to areas where projected truck traffic volumes would otherwise result in exposure of sensitive receptors to operational noise from quarry truck traffic and/or traffic safety hazards. If this approach is selected by the City, then prior to the approval of the first tentative subdivision map or any other discretionary approval that would place sensitive receptors along any roads the quarry trucks could use to access U.S. 50, the City's traffic department and consultants shall analyze and propose to the City Council for approval designated truck routes from the quarries through City jurisdiction to access U.S. 50 that would allow a level of truck traffic that would avoid any potentially significant impact on sensitive receptors from truck traffic noise within the Folsom South of U.S. 50 project area, as well as any other existing or planned uses that would contain sensitive receptors, so as to ensure that sensitive receptors are not exposed to interior noise levels in excess of 45 dBA, or increases in interior noise levels of 3 dBA or more, whichever is more restrictive.

As an alternative to designating truck routes, the following measures could be voluntarily implemented by the quarry project applicant(s) (Granite [Walltown], Teichert, and DeSilva Gates) to reduce exposure of new sensitive receptors developed in the SPA to increases in traffic noise levels generated by quarry truck traffic, and are encouraged.

- The quarry project applicant(s) should meet with the City of Folsom to discuss mitigation strategies, implementation, and cost.
- A site-specific, project-level screening analysis should be conducted by the City of Folsom and funded by the quarry truck applicant(s) for all proposed sensitive receptors (e.g., residences, schools) in the SPA that would be located along the sides of roadway segments that are identified in Table 4-8 as being potentially significant under any of the analyzed scenarios. The analysis should be conducted using an approved three dimensional traffic noise modeling program (i.e., TNM or SoundPlan). Each project-level analysis should be performed according to the standards set forth by the City of Folsom for the purpose

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Table ES-1
Summary of Impacts and Mitigation Measures

Impact	Land/Water/GPA	Significance
Mitigation		

of disclosure to the public and decision makers. The project-level analysis should account for the location of the receptors relative to the roadway, their distance from the roadway, and the projected future traffic volume for the year 2030 (including the percentage of heavy trucks). If the incremental increase in traffic noise levels are determined to exceed the threshold of significance recommended by the City of Folsom, then design mitigation should be employed, which may include the following:

- Model the benefits of soundwalls (berm/wall combination) along the quarry truck hauling roadways and affected receptors not to exceed a total height of eight feet (two-foot berm and six-foot concrete mason wall). If this mitigation measure is determined by the City of Folsom to be inadequate, additional three dimensional traffic noise modeling should be conducted with the inclusion of rubberized asphalt at the expense of the quarry truck applicant(s). No quarry trucks should be allowed to pass on any roadway segment immediately adjacent to or within the SPA until said mitigation has been agreed upon by the City of Folsom and fees for construction of said mitigation are paid by the quarry truck applicant(s).
- Implement the installation of rubberized asphalt (quiet pavement) on roadway segments adjacent to sensitive receptors that carry quarry trucks if soundwalls do not provide adequate reduction of traffic noise levels. The inclusion of rubberized asphalt would provide an additional 3 to 5 dB of traffic noise reduction. The cost of construction using rubberized asphalt should be borne by the quarry truck applicant(s). Said mitigation fee should be determined in consultation with the quarry project applicant(s), the Folsom South of 50 Specific Plan project applicant(s), and the City of Folsom. No quarry trucks should be allowed to pass on any roadway segment immediately adjacent to or within the SPA until said mitigation fees are paid.
- To improve the indoor noise levels at affected receptors, implement the following measures before the occupancy of the affected residences and schools:
  - Conduct an interior noise analysis once detailed construction plans of residences adjacent to affected roadways are available to determine the required window package at second and third floor receptors to achieve the interior noise level standard of 45 dB L_{dn} without quarry trucks.
  - Determine the interior quarry truck traffic noise level increases at second and third floor receptors adjacent to affected roadways compared to no quarry truck conditions. Window package upgrades are expected to be necessary due to the traffic noise level increases caused by quarry trucks along affected roadways. Quarry truck applicant(s) should pay for the cost of window package upgrades (increased sound transmission class rated windows) required to achieve the interior noise level standard of 45 dB L_{dn} with the inclusion of quarry truck traffic.

Implementation: The project applicant(s) of the Folsom South of 50 Specific Plan project.

Timing: Prior to approval of first tentative map or discretionary approval within SPA that would place sensitive receptors along roadways that quarry trucks would reasonably use to access U.S. Highway 50.

Enforcement: City of Folsom Community Development Department.

Significance after Mitigation: less than significant

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1 INTRODUCTION AND STATEMENT OF PURPOSE AND NEED

This document is a joint environmental impact report/environmental impact statement (EIR/EIS) prepared for the Folsom South of Highway 50 Specific Plan project (the "Proposed Project" for purposes of the California Environmental Quality Act [CEQA] and the "Proposed Action" for purposes of the National Environmental Policy Act [NEPA]). This EIR/EIS has been prepared by both the City of Folsom (City), as lead agency under CEQA, and the U.S. Army Corps of Engineers (USACE), Sacramento District, as Federal lead agency under NEPA. The EIR/EIS is a joint document intended to comply with both CEQA and NEPA. See California Code of Regulations (CCR), Title 14, Division 6, Chapter 3 (State CEQA Guidelines), Section 15222 ("Preparation of Joint Documents"); and Code of Federal Regulations (CFR), Title 40, Sections 1502.25, 1506.2, and 1506.4 (authority for combining federal and state environmental documents). See also 33 CFR Part 230 (USACE NEPA regulations) and 33 CFR Part 325, Appendix B ("NEPA Implementation Procedures for the [USACE] Regulatory Program").

In its initial form, an EIR/EIS is composed primarily of a draft document known as a draft EIR/EIS (DEIR/DEIS), and the lead agencies' written responses to public and public-agency comments on the draft document. This DEIR/DEIS evaluates the potential adverse impacts on the human and natural environment resulting from implementation of the proposed Folsom South of Highway 50 Specific Plan project (proposed project). In this document, "Proposed Project" refers to the Proposed Project Alternative, and "project" refers to one or all of the project alternatives. The DEIR/DEIS proposes mitigation measures and alternatives that may reduce or avoid the significance of such adverse impacts. Following public review of the DEIR/DEIS, a final EIR/EIS (FEIR/FEIS) will be prepared, in which the joint lead agencies will provide responses to comments relating to the analysis provided in the DEIR/DEIS.

This EIR/EIS has been prepared to evaluate the environmental impacts associated with implementing a specific plan. A specific plan is a legislative development plan prepared in accordance with California planning statutes found in Government Code Section 65450 et seq. and the City's Municipal Code Chapter 17.37. The goal of the specific plan is to establish a development framework for land use, resource protection, circulation, public utilities and services, design, and implementation. The project includes adoption of the specific plan itself and implementation of the associated development proposal. This DEIR/DEIS has been prepared under the direction of the City and USACE and in accordance with the requirements of CEQA and NEPA identified above.

This introductory chapter of the DEIR/DEIS provides information on the following:

- a brief synopsis of the land use portion of the project requiring environmental analysis (the "Land" project description follows in Chapter 2, "Alternatives");
- a brief synopsis of the off-site water supply and conveyance portion of the project requiring environmental analysis (the "Water" project description follows in Chapter 2, "Alternatives");
- history and planning context of the project;
- project purpose and need and project objectives for the "Land" and "Water" portions of the project;
- type, purpose, and intended uses of the DEIR/DEIS;
- scope and focus of the DEIR/DEIS;
- agency roles and responsibilities and required permits and approvals;
- organization of the DEIR/DEIS;
- documents relied on in the DEIR/DEIS; and
- standard terminology and acronyms.

1.1 PROJECT REQUIRING ENVIRONMENTAL ANALYSIS

The project requiring environmental analysis includes two components; a land use component, and an analysis of the off-site water supply facilities required to support the proposed land uses. Because the project purpose, objectives, and alternatives are different for the "Land" and "Water" portions of the project, they are presented separately in this EIR/EIS.

1.1.1 LAND

The project applicant(s) of the "Land" portion of the project—the South Folsom Property Owners Group—are requesting annexation into the City of Folsom, and approval of various discretionary entitlements in support of a specific plan for a mixed-use development and supporting on- and off-site roadway and infrastructure improvements (project). The specific plan covers an area in eastern Sacramento County, south of U.S. 50, and adjacent to the existing Folsom city limits. The specific plan supports a combination of employment-generating uses, retail and supporting services, recreational uses, and a broad range of residential uses and associated infrastructure and roads on approximately 3,510-acres that is located entirely within the City's sphere of influence. The "Specific Plan Area," or SPA, described throughout this EIR/EIS includes the entire area proposed for annexation, including U.S. 50 highway right-of-way and interchange areas, for a total of approximately 3,584 acres. The project site is located south of U.S. 50, north of White Rock Road, east of Prairie City Road (a small area extends west of Prairie City Road at the southwest corner of the project site), and west of the Sacramento/El Dorado County line (see Exhibits 2-1 and 2-2 in Chapter 2, "Alternatives").

The Proposed Project Alternative includes 10,210 residential units at various densities on approximately 1,477 acres; approximately 363 acres are designated for commercial and industrial use, including a regional shopping center; public/quasi-public uses; elementary, middle, and high schools on approximately 179 acres; approximately 122 acres of community and neighborhood parks; stormwater detention basins; approximately 1,053 acres of open-space areas and open-space preserves; and major roads with landscaping.

Several off-site infrastructure facilities (intersection expansions to allow access to and from U.S. 50 and the SPA, an overpass of U.S. 50, two roadway connections and sewer pipelines from the Folsom Heights property into El Dorado Hills, a sewer force main connection to the existing City system, a detention basin, and water pipelines and facilities) are proposed to serve project development and are addressed in this DEIR/DEIS.

1.1.2 WATER

Based on current water demand assumptions and implementation of reasonable conservation measures in years when water supplies could be subjected to dry-year reductions of up to 25%, the SPA would require not more than 5,600 acre-feet[1] of water per year (AFY). To provide a reliable water supply for the project, the City is proposing the permanent assignment of not more than 8,000 AFY[2] of Central Valley Project (CVP) contract water from the Natomas Central Mutual Water Company (NCMWC), diverting this water supply from the Sacramento River at the Freeport Regional Water Project (Freeport Project), and conveying this water to the SPA through new potable water infrastructure.

In addition, the project would include the City purchasing from Sacramento County Water Agency (SCWA) a portion of its dedicated capacity within the Freeport Project, which would serve as the point of diversion (POD) on the Sacramento River and partial conveyance pathway for not more than 5,600 AFY purchased from NCMWC. The City proposes to add the Freeport POD to the assigned CVP water to facilitate the diversion of these supplies at the existing Freeport Project diversion. The City proposes to pump and convey the assigned NCMWC CVP water supply through the Freeport Project diversion facility and conveyance pipeline to the point where the SCWA and the East Bay Municipal Utilities District (EBMUD) pipeline splits (or bifurcation point). The City would then construct new water supply conveyance infrastructure from the bifurcation point to the SPA.

Ten conveyance alternatives are analyzed in this EIR/EIS at an equal level of detail, as required under NEPA. These ten conveyance alternatives are described in more detail in Chapter 2, "Alternatives." Overall, each of the ten "Water" action alternatives would involve the following actions in conjunction with the City taking assignment for up to 8,000 AFY of CVP surface water from NCMWC:

[1] An acre-foot of water contains 325,851 gallons; one million gallons is about 3 acre-feet.
[2] NCMWC's CVP water contract is subject to a dry-year provision whereby total deliveries can be reduced by up to 25%.

- rescheduling the existing CVP July and August delivery schedules to a year-round municipal and industrial (M&I) schedule;

- entering into an agreement with SCWA to convey the water acquired by the City from NCMWC through the Freeport Project, to facilitate the integration of the Offsite Water Facilities with existing Freeport Project diversion and water conveyance facilities; and

- constructing conveyance, pump, storage, and treatment facilities, including booster pump station(s), water treatment and storage facilities, and conveyance facilities.

Consistent with the requirements of CEQA and NEPA, the City is evaluating several conveyance alternatives in this EIR/EIS to enable the delivery of not more than 6,000 AFY of CVP water assigned by NCMWC to the SPA. Each alternative includes optional route alignments and/or operational features (e.g., water treatment plants [WTP] and associated storage facilities) to cover the range of feasible alternatives available to the City.

1.1.3 PROJECT GEOGRAPHIES

The project undergoing environmental analysis in this EIR/EIS includes "Land" and "Water" components. Different portions of the project would occur in and would affect different geographical areas. The following geographic area descriptions are used in this EIR/EIS:

- **Specific Plan Area –** This refers to the area which would be annexed by the City of Folsom as part of the project. Most "On-site" analyses in the "Land" portion of the EIR/EIS address conditions in the SPA. The Specific Plan actually defines the future land uses for a slightly smaller area, excluding the U.S. Highway 50 right-of-way.

- **Off-site Improvements –** This refers to the location of certain off-site improvements required to support the proposed land use changes, including a proposed detention basin west of Prairie City Road, roadway and interchange improvements along U.S. 50 (at Prairie City Road, Oak Avenue, Rowberry Drive, Scott Road, and Empire Ranch Road); a sewer line extension across U.S. 50 to an existing pump station along Iron Point Road; and sewer and roadway extensions into El Dorado Hills.

- **"Water" Study Area –** This refers to the regional area studied for the various water supply facilities and operations required under the alternatives in the "Water" portion of the EIR/EIS. The "Water" Study Area encompasses areas in east-central portions of Sacramento County where new potable water supply facilities would be constructed under a variety of alternative configurations, the Freeport Project facilities, the NCMWC service area, and the portions of the lower Sacramento River.

- **General Plan Amendment Area –** This refers to the area within the current City of Folsom where the density ranges of general plan land use designations would be changed by the project.

Please refer to Exhibit 2.1 for an illustration of these areas and their relationship to one another.

1.2 PROJECT HISTORY AND PLANNING CONTEXT

In 2001, the Sacramento Local Agency Formation Commission (LAFCo) designated the undeveloped land south of U.S. Highway 50 between Prairie City Road, White Rock Road, and the El Dorado County line as part of the City's sphere of influence. The City entered into a Memorandum of Understanding (MOU) with Sacramento County prior to approval of the SPA application by Sacramento LAFCo. The intent of the MOU is to serve as a guide for sound regional long-range planning efforts relative to the annexation of the SPA. The MOU outlines a comprehensive planning process for the project site, including public participation with various stakeholders and the general public. It also addresses a number of issues including water supply, transportation, air quality, schools, and open space that were later incorporated into language found in Measure W and subsequently the City Charter

(described in more detail below). The MOU led to LAFCo Resolution 1196, approving the City's sphere of influence amendment.

LAFCo Resolution 1196 requires that the planning process for the project site include:

- **City General Plan Revisions.** Revise and update the City's general plan in accordance with California State law.

- **City General Plan Housing Element.** Obtain a certification of substantial compliance from the California Department of Housing and Community Development consistent with California Government Code section 65585(d) or (h). The City shall establish in its approved Housing Element that it has or will meet its regional share housing needs for all income levels for the second and third Housing Element revisions, as defined in California Government Code section 65588.

- **Land Use Designations.** Adopt appropriate land use designations for all property within the adopted Sphere of Influence area.

- **Pre-zoning.** Pre-zone the property consistent with California Government Code Section 56375 and the Folsom General Plan.

- **Comprehensive Planning.** Develop comprehensive planning of the project site that demonstrates well planned, orderly development that avoids the premature conversion of open space.

- **Master Service Agreement.** In any application to annex the property, the City is to submit a Master Services Element that identifies a program for implementation and financing for major infrastructure and services components needed to support the proposed distribution, location, extent, and intensity of proposed land uses. The Master Services Element must identify a water supply source and the process for securing sufficient water supplies to serve the annexed area.

- **Local Roadway Improvements.** Prepare a plan for necessary improvements to each jurisdiction's roadway network to accommodate increased traffic from the project site in cooperation with Sacramento and El Dorado Counties. This plan must include a list of improvements, responsible jurisdiction, phasing plan, and clearly defined financing mechanism. Implementation of this plan must result in service levels on local roadways consistent with each jurisdiction's general plan.

- **Regional Roadway Improvements.** The City, in cooperation with Caltrans, Sacramento County, El Dorado County, the El Dorado County Transportation Commission, and the Sacramento Area Council of Governments (SACOG), must identify traffic and transportation measures that are needed to mitigate potential impacts on regional transportation facilities from proposed development within the project site. The City must also identify a funding mechanism to construct the traffic and transportation measures necessary to fully mitigate impacts from the project site, and a timeline for the construction of improvements. As soon as reasonably possible, these improvements should be programmed into the Metropolitan Transportation Plan and Metropolitan Transportation Improvement Program.

- **Transit Master Plan.** Prepare a Transit Master Plan consistent with the City's General Plan. The master plan must identify bus transit routes, bus turnouts, pedestrian shelters, bus transfer stations, alignments for rail service, and the location of rail service stations.

- **Bikeway Master Plan.** Prepare a Bikeway Master Plan consistent with the City's General Plan. The master plan must identify bikeway and pedestrian facilities on the project site consistent with the goals and policies of the City's general plan and incorporate bikeway designs for Prairie City Road and White Rock Road to be equivalent, or better, than those in the Sacramento City/County Bikeway Master Plan.

- **Drainage Master Plan.** Conduct hydraulic and hydrologic modeling of that portion of Alder Creek which transverses the project site. A Drainage Master Plan must be prepared and address flood hazards, identify flood protection measures, and document no net increase in downstream floodwater surface elevations.

- **Habitat Mitigation Strategy.** Document of the City's multi-species habitat mitigation strategy (Habitat Conservation Plan [HCP]) for the project site. The strategy must address mitigation of impacts on habitat and biological resources that meets Federal and State regulatory requirements. The City may fulfill these requirements through participation in South Sacramento County HCP process.

- **Surface and Groundwater Contamination.** Document that on-site surface contamination has been remediated to Federal and State regulatory standards, and that groundwater contamination has been remediated or is being remediated effectively prior to annexation of any property owned by Aerojet General Corporation.

- **Water Supply.** Demonstrate that the City has a sufficient water supply to serve existing customers, future customers within the existing service area, and all proposed uses within the project site in compliance with the terms and conditions of the Water Forum Agreement. This demonstration must be sufficient for LAFCo to determine water availability per California Government Code section 56668(k).

- **Wastewater Facilities.** Demonstrate the timely availability of wastewater transmission and treatment capacity to serve existing customers, future customers within the existing service area, and all proposed uses within the project site.

- **Special Districts.** Meet and confer with the El Dorado Irrigation District (EID), the Sacramento Metropolitan Fire District, and any other special districts regarding impacts on these districts, including fiscal and operational impacts and loss of property tax revenue. With respect to EID, the City must not request any detachment from the EID service area.

- **School Mitigation.** Incorporate feasible school mitigation requirements into development agreements.

- **Mitigation Monitoring.** Comply with the mitigation measures identified in environmental review for expansion of sphere of influence boundary and adopted pursuant to CEQA by LAFCo Resolution LAFC 1193, including:

    - Establish necessary roadway improvements and financing mechanisms;
    - Implement requirements to reduce air quality emissions by 35%;
    - Prepare an Air Quality Plan;
    - Complete tree surveys and implement tree protection measures;
    - Complete biological surveys and adopt avoidance and mitigation policies;
    - Minimize incompatibility impacts on historic landscapes;
    - Implement hazardous materials plans;
    - Investigate and remediate railroad right-of-way, mining, and radio/transfer sites;
    - Define the Alder Creek 100-year floodplain; and
    - Identify secure sufficient water supplies.

In November 2004, following a series of visioning workshops, the City's Measure W (City Ordinance No. 1022) passed with support from 69% of the City voters. With the passage of Measure W, the City Charter was amended to require the Folsom City Council to take certain actions prior to LAFCo approval of annexation. These actions are related to each of the issue areas described below:

- **Water Supply.** Identify and secure the sources of water supply to serve the SPA without reducing the existing water supply currently serving users to the north of U.S. 50, and at no cost to existing City residents.

- **Transportation.** Adopt an Infrastructure Funding and Phasing Plan for the construction of roadways and transportation improvements that are necessary to reduce traffic impacts resulting from development of the SPA. The timing of the construction of the transportation improvements shall be tied to the anticipated rate of growth and associated traffic impacts. Existing City residents shall not be required to pay fees for the construction of any new transportation improvements required to serve the SPA.

- **Open Space.** Maintain 30% of the SPA as natural open space to preserve oak woodlands and sensitive habitat areas. Natural open space cannot include active park sites, residential yard areas, golf courses, parking lots, or their associated landscaping.

- **Schools.** Submit a plan to the Folsom Cordova Unified School District for the funding and construction of all necessary school facilities for the SPA so that City residents north of U.S. 50 are not required to pay for the construction of new school facilities serving the SPA and existing schools are not overcrowded by development of the SPA.

- **Development Plan.** Adopt a General Plan Amendment to serve as the blueprint for development within the SPA. The General Plan Amendment will only be adopted after the completion and certification of an environmental impact report.

- **Public Notice.** Every registered voter in the City must be mailed a notice of time, place, and date of the public meetings and hearings before the Planning Commission and City Council. The notice must include a summary of the SPA proposal with the full proposal and associated environmental review available for public review at the City Clerk's office, at all Folsom public libraries, and on the City's Web site.

- **Implementation.** All existing City plans, policies, ordinances, and other legislative acts must be amended as necessary, as soon as possible, and in the time and manner required by state law, including CEQA, to ensure consistency between the Charter Amendment and those plans, policies, and other provisions.

In 2004, the City launched a visioning process to seek community input about the future plans for the City's sphere of influence area. Approximately 200 residents of the City and nearby El Dorado County attended a series of meetings facilitated by a professional planning consultant. At those meetings, the participants addressed a range of issues including land use, open space, transportation, and financing. Their recommendations resulted in a series of five possible development scenarios, which were reviewed by the Folsom City Council at its January 25, 2005 meeting. Since that time, the land use plan for the SPA has continued to undergo refinements, and has evolved into the Proposed Project Alternative shown in Exhibit 2-3 in Chapter 2, "Alternatives." The Proposed Project Alternative, along with four alternative land use development plans and a No Project Alternative (development under the existing Sacramento County land use and zoning designations), are evaluated in an equal level of detail, as required under NEPA in this EIR/EIS.

1.3 PROJECT PURPOSE, NEED, AND OBJECTIVES

The Proposed Project Alternative has been formulated to achieve the purpose, objectives, and needs summarized below. State CEQA Guidelines CCR Section 15124(b) requires that the project description contain a clear statement of the project objectives, including the underlying purpose of the project. NEPA regulations (40 CFR 1502.13) require that an EIS contain a statement of the purpose and need that "briefly specif[ies] the underlying purpose and need to which the agency is responding in proposing the alternatives, including the proposed action." The statement of objectives is important under CEQA in helping the City (State lead agency under CEQA), and the statement of purpose and need is important under NEPA in helping USACE (Federal lead agency under NEPA), to develop a reasonable range of alternatives to the Proposed Project Alternative for evaluation in the EIR/EIS.

1.3.1 PROJECT PURPOSE AND NEED

The City and USACE each view the project purpose from the purview of their responsibilities. The City is interested in the orderly development of lands within its planning boundaries/sphere of influence and ensuring that that the City has adequate water supplies for trust development. USACE's interest extends to its permit authority with respect to regulation of waters of the U.S., including wetlands.

PROJECT PURPOSE AND NEED: CITY OF FOLSOM CONSIDERATIONS

The purpose of the Folsom South of Highway 50 Specific Plan project is to provide a mixed-use, master-planned community within an area south of U.S. 50 that would be annexed to the City of Folsom, and also to secure a reliable water supply consistent with the requirements of Measure W and objectives of the Water Forum Agreement and the necessary off-site conveyance infrastructure to facilitate the planned development of the SP. In accordance with local and regional plans, including the City's General Plan and SACOG Blueprint and Smart Growth Principles, the project would expand the City's current sphere of influence south of U.S. 50 in a manner that would foster orderly urban development and discourage leapfrog development and urban sprawl. The project would provide both jobs and housing and would generate a positive fiscal impact for the City.

PROJECT PURPOSE AND NEED: U.S. ARMY CORPS OF ENGINEERS

The project purpose, as considered by USACE, is to construct a large scale, mixed-use development, with associated infrastructure, within eastern Sacramento County.

1.3.2 PROJECT NEEDS AND OBJECTIVES

LAND

Outlined below are the main project needs and objectives defined by the project applicant(s) for the Proposed Project. These objectives are specific to the "Land" portion of the project, and are important for the selection and consideration of CEQA alternatives.

1. Be consistent with the City of Folsom's General Plan and implement SACOG Smart Growth Principles.

2. Expand the City's boundaries based on the ultimate boundaries of development that the City can reasonably control and service, and do so in a manner that would foster orderly urban development and discourage leapfrog development and urban sprawl.

3. Annex those parcels of land adjacent to the City limit and within the City's Sphere of Influence whose development could have significant visual, traffic, public service, and environmental impacts on the City so that the City may influence the ultimate development of those parcels.

4. Provide a large-scale mixed-use and mixed-density residential housing development within the City of Folsom, south of U.S. 50.

5. Develop several distinct neighborhoods within the project site, connected by a substantial open space area and recreational trail network.

6. Provide neighborhood- and regional-serving retail areas within the project site.

7. Provide a mix of housing types within the project site to diversify the City's housing stock.

8. Provide a combined high school/middle school and the appropriate elementary schools on-site sufficient to meet the needs of the project.

9. Provide the appropriate number and size of on-site community and neighborhood parks sufficient to meet the needs of the project.

10. Generate positive fiscal impacts for the City through development within the project site.

WATER

The project objectives for the "Water" portion of the project include the following:

1. Secure a sufficient and reliable water supply consistent with the requirements of Measure W and objectives of the Water Forum Agreement to support planned development within the SPA, which the City estimates to be 5,600 acre-feet per year.

2. Construct the necessary water supply delivery and treatment infrastructure to ensure the safe and reliable delivery of up to 5,600 acre-feet per year to the SPA.

1.4 INTENDED USES AND TYPE OF ENVIRONMENTAL IMPACT REPORT/ ENVIRONMENTAL IMPACT STATEMENT

1.4.1 CALIFORNIA ENVIRONMENTAL QUALITY ACT

According to the State CEQA Guidelines (14 CCR Section 15064[f][1]), preparation of an EIR is required whenever a project may result in a significant environmental impact. An EIR is an informational document used to inform public agency decision makers and the general public of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project that could feasibly attain most of the basic objectives of the project while substantially lessening or avoiding any of the significant environmental impacts. Public agencies are required to consider the information presented in the EIR when determining whether to approve a project.

CEQA requires that state and local government agencies consider the environmental effects of projects over which they have discretionary authority before taking action on those projects (California Public Resources Code [California PRC] Section 21000 et seq.). CEQA also requires that each public agency avoid or mitigate to less-than-significant levels, wherever feasible, the significant environmental effects of projects it approves or implements. If a project would result in significant and unavoidable environmental impacts that cannot be feasibly mitigated to less-than-significant levels, the project can still be approved, but the lead agency's decision makers must issue a "statement of overriding considerations" explaining in writing the specific economic, social, or other considerations that they believe make those significant effects acceptable.

1.4.2 NATIONAL ENVIRONMENTAL POLICY ACT

NEPA provides an interdisciplinary framework for Federal agencies to develop information that will help them to take environmental factors into account in their decisionmaking (42 United States Code [USC] 4321, 40 CFR 1500.1). According to NEPA, an EIS is required whenever a proposed major Federal action (e.g., a proposal for legislation or an activity financed, assisted, conducted, or approved by a Federal agency) would result in significant effects on the quality of the human environment.

Much of the development contemplated by the proposed specific plan is dependent upon Federal action because such development would require Federal permits for one or more of the following activities: (i) discharges of fill material into waters of the U.S., (ii) activities affecting plant or animal species protected by the Federal Endangered Species Act (ESA) (16 USC 1531 et seq.), (iii) activities affecting cultural resources that are listed or are eligible for listing in the National Register of Historic Place (NRHP) for compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA) (16 USC 470). The "Water" portion of the project requires the Federal Bureau of Reclamation's (Reclamation's) approval of an assignment of a CVP water

supply from NCMWC to the City. An EIS is an informational document used by Federal agencies in making decisions. An EIS is intended to provide full and open disclosure of environmental consequences prior to agency action; an interdisciplinary approach to project evaluation; objective consideration of all reasonable alternatives; application of measures to avoid or reduce adverse impacts; and an avenue for public and agency participation in decision-making (40 CFR 1502.1). NEPA defines mitigation as avoiding, minimizing, rectifying, reducing, or compensating for significant effects of the proposed action (40 CFR 1508.20).

NEPA requires that a lead agency "include (in an EIS) appropriate mitigation measures not already included in the proposed action or alternatives" (40 CFR 1502.14[f]). An EIS shall also include discussions of "means to mitigate adverse environmental impacts (if not fully covered under Section 1502.14[f])." In preparing a record of decision under 40 CFR 1505.2, a lead agency is required to "[s]tate *whether* all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why they were not. A monitoring and enforcement program shall be adopted and summarized where applicable for *any* mitigation." (Italics added.)

Individual project development phases may require further environmental analysis and additional agency approvals when tentative maps or other future discretionary applications are submitted after adoption of the specific plan, particularly if site-specific issues peculiar to certain parcels were not addressed at the broader program level of analysis found in this EIR/EIS. See Section 1.4.3 below and Section 2.3.1 in Chapter 2, "Alternatives."

1.4.3 PROGRAM ENVIRONMENTAL IMPACT REPORT/ENVIRONMENTAL IMPACT STATEMENT

This EIR/EIS includes a program-level, or "first-tier," analysis for the project, consistent with California PRC Sections 21083.3, 21093, and 21094; Title 14 CCR Sections 15152 and 15168; and 40 CFR 1500.4(i), 1502.4(b), and 1502.20, among others. A program EIR addresses a series of related actions characterized as one large project.

This program-level or "programmatic" analysis evaluates the requested actions as they relate to the proposed land use designations for the overall specific plan (refer to Chapter 2, "Alternatives," for further detail on the overall project).

The program-level analysis considers the broad environmental effects of the overall specific plan. This program EIR/EIS also identifies performance standards (e.g., setbacks, measures to protect biological and other sensitive resources) and mitigation measures that would apply to all subsequent, future project development phases under the specific plan (as conditions of approval). These performance standards will be incorporated into the Folsom Specific Plan to avoid or reduce impacts to the degree feasible. In addition, the program-level analysis addresses the cumulative impacts of development of the project and analyzes a reasonable range of alternative land use maps at an equal level of detail. A No Project Alternative is also analyzed as required by CEQA and NEPA (same as the No Action Alternative), as well as a No Federal Action (no USACE Department of the Army Clean Water Act [CWA] Section 404 permit) Alternative as required by USACE NEPA regulations.

In addition to the programmatic analysis described above, this EIR/EIS also includes an additional detailed level of analysis of specific topic areas that is beyond the program level. Those issues that contain this additional level of detailed analysis are: Aesthetics; Cultural Resources; Environmental Justice; Geology, Soils, Minerals, and Paleontological Resources; Hazards and Hazardous Materials; and Land Use Planning and Agricultural Resources. Where this additional detailed analysis has been conducted, a statement that impacts under the additional level of detailed analysis would be same as those under the program level analysis is included at the beginning of each topic area.

CALIFORNIA ENVIRONMENTAL QUALITY ACT COMPLIANCE FOR SUBSEQUENT PROJECT DEVELOPMENT PHASES

Development of the SPA is expected to occur in multiple phases (See Section 2.3.1, "Project Phasing" in Chapter 2, "Alternatives"). To move forward with a specific phase, the project applicant(s) intend to submit a tentative subdivision map/improvement plan for each project development phase. At that time, the City will require compliance with the Folsom Specific Plan performance standards and mitigation measures set forth in this EIR/EIS and incorporated into the Folsom Specific Plan for each tentative subdivision map/improvement plan as conditions of approval. Those future phases may require further environmental review. CEQA includes a number of different but complementary means for streamlining environmental review consistent with an approved general plan, specific plan, or zoning action. More than one of these provisions might apply to future entitlements within the adopted SPA. (See California PRC Section 21083.3 [streamlined review for projects consistent with general plans, community plans, or zoning actions for which an EIR was prepared]; 14 CCR Section 15183 [same]; California PRC Sections 21093 and 21094 [tiering]; 14 CCR Section 15152 [same]; California Government Code Section 65457 [CEQA exemption for residential projects within a specific plan for which an EIR was prepared]; and 14 CCR Section 15182 [same].) The extent of environmental review, if any, for future development entitlements will depend on a number of factors, including the streamlining provision of CEQA that seems most applicable to a particular proposed entitlement; consistency of the proposed development with the adopted specific plan; and the extent to which the programmatic analysis, performance standards, and mitigation measures have anticipated and accounted for the site-specific impacts of the requested entitlements.

1.5 SCOPE AND FOCUS OF THE ENVIRONMENTAL IMPACT REPORT/ ENVIRONMENTAL IMPACT STATEMENT

Pursuant to CEQA, the State CEQA Guidelines, and NEPA, the discussion of potential effects on the environment in this EIR/EIS is focused on those impacts that the City and USACE have determined may be potentially significant.

On September 12, 2008, the City issued a notice of preparation (NOP) (Appendix B) to inform agencies and the general public that a joint EIR/EIS was being prepared, and invited comments on the scope and content of the document and participation at a public scoping meeting. The NOP was published in the State Clearinghouse and was mailed to approximately 15 state agencies. It was also posted on the City's website. The NOP was circulated for 45 days as mandated by CEQA. The public-comment period for the NOP closed on October 27, 2008.

On September 12, 2008, USACE issued a notice of intent (NOI) (Appendix B) to inform agencies and the general public that a joint EIR/EIS was being prepared and invited comments on the scope and content of the document. At that time USACE announced that it had developed a public-involvement program allowing opportunities for public participation and involvement in the NEPA process. The NOI also provided information on the date and time of the public scoping meeting. The NOI was published in the *Federal Register*, Vol. 73, No. 178, on September 12, 2008. There is no mandated time limit to receive written comments in response to the NOI under NEPA.

The City and USACE jointly held a public scoping meeting to solicit input from the community and public agencies to be considered in project design, alternatives selection, and on the scope and content of the EIR/EIS. The meeting was held on September 25, 2008 at 5:00 p.m. at the Folsom Public Library in Folsom, California. Fourteen people, including individuals and representatives from the public and private sectors, attended the meeting.

Appendix B of this EIR/EIS contains a table listing the substantive comments received on the NOP/NOI. Copies of the comment letters follow the table in Appendix B.

This EIR/EIS includes an evaluation of 17 environmental issue areas and other CEQA- and NEPA-mandated issues (e.g., cumulative impacts, growth-inducing impacts) for the "Land" analysis. The 17 environmental issue areas for the "Land" analysis are as follows:

- aesthetics;
- air quality;
- biological resources;
- climate change;
- cultural resources;
- environmental justice (required under NEPA);
- geology, soils, minerals, and paleontological resources;
- hazards and hazardous materials;
- hydrology and water quality;
- land use planning and agricultural resources;
- noise;
- parks and recreation;
- population, employment, and housing (socioeconomics under NEPA);
- public services;
- traffic and transportation;
- water supply; and
- utilities and service systems.

For several topic areas under the "Land" portion of the analysis, significant and potentially significant impacts would be reduced to a less-than-significant level after implementation of mitigation measures required in this EIR/EIS. These topic areas include cultural resources; environmental justice; hazards and hazardous materials; hydrology and water quality; parks and recreation; population, employment, and housing; and public services.

For the "Water" analysis, 15 environmental issue areas were analyzed. The environmental issue areas for the "Water" analysis are as follows:

- aesthetics;
- air quality;
- biological resources;
- climate change;
- cultural resources;
- environmental justice (required under NEPA);
- geology, soils, and paleontological resources;
- groundwater;
- hazards and hazardous materials;
- hydrology and water quality;
- land use planning and agricultural resources;
- noise;
- parks and recreation;
- traffic and transportation; and
- utilities and service systems.

For several topic areas under the "Water" portion of the analysis, significant and potentially significant impacts would be reduced to a less-than-significant level after implementation of mitigation measures required in this EIR/EIS. These topic areas include biological resources; cultural resources; environmental justice; geology, soils, and paleontological resources; hazards and hazardous materials; hydrology and water quality; land use and agricultural resources; noise; parks and recreation; traffic and transportation; and utilities and service systems. CEQA and NEPA allow a lead agency to limit a discussion of the environmental effects in an EIR/EIS when the effects are not considered potentially significant. For the "Land" and "Water" analyses, there were topic areas that were not expected to have any significant project-specific or cumulative impacts when compared to existing conditions, and for which no further analysis was conducted for this EIR/EIS, as discussed further in Chapter 2, "alternatives." Chapter 3, "Affected Environment, Environmental Consequences, and Mitigation Measures," provides a brief explanation as to the City's reasoning for not carrying these resource topics forward into the environmental analysis of the "Land" and "Water" portions of the project.

1.6 AGENCY ROLES AND RESPONSIBILITIES

USACE will use this EIS/EIR in exercising its regulatory authority under Section 404 of the Clean Water Act. It also may be used as an informational document by Federal cooperating agencies, such as Reclamation, that could have permitting or approval authority for aspects of the project.

This EIS/EIR will be used by the City of Folsom and CEQA responsible and trustee agencies to ensure that they have met the requirements of CEQA before deciding whether to approve or permit project elements over which they have jurisdiction. It may also be used by other state and local agencies, which may have an interest in resources that could be affected by the project, or that have jurisdiction over portions of the project.

1.6.1 LEAD AGENCIES

The City of Folsom is the State lead agency for the project under CEQA, and USACE, Sacramento District, is the Federal lead agency under NEPA. The City has the principal responsibility for approving and carrying out the project and for ensuring that the requirements of CEQA have been met. USACE has the principal responsibility for making Clean Water Act Section 404 permit decisions and ensuring that the requirements of NEPA have been met. The EIR/EIS may also be used by other Federal, state, regional, and local agencies, which may have an interest in resources that could be affected by the project, or that have jurisdiction over portions of the project.

The following are the entitlements requested from the City for the project:

- certification of the EIR/EIS and Mitigation Monitoring and Reporting Program,
- amendment of the Folsom General Plan,
- amendment of the Folsom Zoning Ordinance,
- adoption of the Folsom Specific Plan,
- adoption of a Public Facilities Financing Plan,
- approval of large-lot tentative maps,
- application to LAFCo for annexation of the project site to the City of Folsom, and
- possible approval of development agreements between the City and project applicant(s).

The project applicant(s) are requesting these approvals to accommodate proposed development on lands they control (i.e., lands owned). However, some approvals would apply to all lands in the SPA. It is anticipated that the City will also rely on this EIR/EIS for approval of other future discretionary entitlements and permits (e.g., small-lot tentative subdivision maps, design review approvals, use permits). The City will rely on this document to the degree that it adequately addresses the impacts of future development on the site (i.e., for specific issue areas where more detailed analysis was conducted). The City is the project proponent and lead agency for implementation of the water supplies and off-site water facilities necessary to satisfy the water demands of the SPA. The City will rely on this document to the degree that it adequately addresses the impacts of the specific manner in which those supplies and facilities are implemented. Depending on the final locations of specific facilities, the City may need to conduct supplemental environmental analysis of the specific issues presented.

The Proposed Action represents a Federal action because it would require one or more of the following Federal permits and authorizations:

- Department of the Army permit under Section 404 of the CWA for discharges of dredge or fill material into waters of the U.S.,

- ESA Section 7 consultation leading to issuance of a Biological Opinion and possible incidental-take statement for activities affecting endangered species,

- NHPA Section 106 consultation leading to the preparation of a Programmatic Agreement and/or Memorandum of Agreement (MOA) for activities affecting a cultural resource listed in or eligible for listing in the NRHP, and

- Reclamation approval of the assignment of NCMWC's entitlement of up to 8,000 AFY of CVP surface water to the City.

1.6.2 TRUSTEE, RESPONSIBLE, AND COOPERATING AGENCIES

Under CEQA, a trustee agency is a state agency that has jurisdiction by law over natural resources that are held in trust for the people of the State of California. One trustee agency, the California Department of Fish and Game, meets that definition with respect to resources potentially affected by the project.

Under CEQA, a responsible agency is an agency other than the lead agency that has legal responsibility for carrying out or approving a project or elements of a project (California PRC Section 21069).

Under NEPA, a cooperating agency is any Federal agency other than the lead agency that has jurisdiction by law or special expertise with respect to any environmental impact involved in an action requiring an EIS. Reclamation is serving as a cooperating agency under NEPA because it would use this EIS/EIR in determining whether to approve the assignment of 8,000 AFY of water to the City of Folsom.

Responsible and cooperating agencies are encouraged to actively participate in the CEQA and NEPA processes of the lead agencies, review the CEQA and NEPA documents of the lead agencies, and use the documents when making decisions on the project. In 2008, USACE sent letters to various Federal, state, and regional agencies requesting their participation as a Federal cooperating agency under NEPA. At the time of this writing, only Reclamation has responded to USACE requesting to serve as a Federal cooperating agency.

Several agencies other than the City and USACE have jurisdiction over the implementation of the elements of the project, as identified below.

FEDERAL AGENCIES

- U.S. Department of the Interior, Bureau of Reclamation (Cooperating Agency)
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service
- National Marine Fisheries Service

STATE TRUSTEE AND RESPONSIBLE AGENCIES

- California Air Resources Board
- California Department of Education
- California Department of Fish and Game
- California Department of Health Services
- California Department of Toxic Substances Control
- California Department of Transportation
- State Water Resources Control Board
- Central Valley Regional Water Quality Control Board
- Native American Heritage Commission
- State Historic Preservation Officer

REGIONAL AND LOCAL RESPONSIBLE AGENCIES

- Natomas Central Mutual Water Company
- Folsom Cordova Unified School District
- County of Sacramento
- Sacramento Local Agency Formation Commission
- El Dorado Irrigation District
- El Dorado Hills Fire Department

- County of El Dorado
- Sacramento Metropolitan Fire District
- Sacramento County Water Agency
- City of Rancho Cordova
- Sacramento County Municipal Services Agency

1.6.3 REGULATORY REQUIREMENTS, PERMITS, AUTHORIZATIONS, AND APPROVALS FOR "LAND" AND "WATER"

The following list identifies permits and other approval actions and authorizations needed from Federal, state, regional, and local agencies for which this EIR/EIS may be used during these agencies' decision-making processes. The following may be under the purview of regulatory agencies other than the lead agencies.

FEDERAL ACTIONS/PERMITS

- **U.S. Army Corps of Engineers:** Department of the Army permit under Section 404 of the CWA for discharges of dredge or fill material into waters of the U.S. Consultation for impacts on cultural resources pursuant to Section 106 of the National Historic Preservation Act. Consultation for impacts on Federally listed species pursuant to Section 7 of the ESA.

- **U.S. Bureau of Reclamation:** approval of Assignment of 8,000 AFY from NCMWC to City of Folsom, Water Service Contract Amendment for Change in Water Supply Delivery Schedule from Agriculture to M&I, and approval of an Encroachment Permit for Folsom South Canal Crossing.

- **U.S. Environmental Protection Agency:** reviewing the EIS, filing, and noticing; concurrence with Section 404 CWA permit.

- **U.S. Fish and Wildlife Service:** ESA consultation and issuance of incidental-take authorization for the take of Federally listed endangered and threatened species.

- **National Marine Fisheries Service:** ESA consultation and issuance of incidental-take authorization for the take of Federally listed endangered and threatened species.

STATE ACTIONS/PERMITS

- **California Department of Education:** approval of new school sites for which state funding is sought.

- **California Department of Fish and Game, Sacramento Valley—Central Sierra Region:** California Endangered Species Act (CESA) consultation and issuance of take authorization (if needed) (California Fish and Game Code Section 2081), streambed alteration agreement (California Fish and Game Code Section 1602), and protection of raptors (California Fish and Game Code Section 3503.5).

- **California Department of Transportation:** encroachment permits.

- **Central Valley Regional Water Quality Control Board (Region 5):** National Pollutant Discharge Elimination System (NPDES) construction stormwater permit (NOI to proceed under General Construction Permit) for disturbance of more than 1 acre; discharge permit for stormwater; general order for dewatering; and Section 401 CWA certification or waste discharge requirements; Clean Water Act, Section 401 Water Quality Certification; NPDES permit coverage for hydrostatic testing of pipeline (coverage expected under General Order for Low Threat Discharges to Surface Water)

- **State Historic Preservation Officer (SHPO):** approval of a Programmatic Agreement and/or MOU for Section 106 compliance with the National Historic Preservation Act.

- **California Department of Public Health:** approval of an amendment to the City's Public Water System Permit.

REGIONAL AND LOCAL ACTIONS/PERMITS

- **Sacramento Local Agency Formation Commission:** approval of annexation to the City of Folsom.
- **Sacramento Metropolitan Air Quality Management District:** authority to construct (for devices that emit air pollutants), health risk assessment, and Air Quality Management Plan consistency determination.
- **Sacramento County Water Agency:** approval for dedicated capacity in SCWA's Freeport Project Pipeline Facility,
- **Sacramento County:** approval of roadway encroachment permit for pipeline construction, tree removal permit (if needed), rezoning, use permit, and parcel map application for new WTP, approval of grading permit.
- **City of Rancho Cordova:** roadway encroachment permit for pipeline construction, tree removal permit (if needed), rezoning, use permit, and parcel map application for new Folsom Boulevard WTP.

1.7 PUBLIC PARTICIPATION AND ADDITIONAL STEPS IN THE CALIFORNIA ENVIRONMENTAL QUALITY ACT/NATIONAL ENVIRONMENTAL POLICY ACT REVIEW PROCESS

This DEIR/DEIS is being distributed to interested agencies, stakeholder organizations, and individuals. This distribution ensures that interested parties have an opportunity to express their views regarding the environmental effects of the project, and to ensure that information pertinent to permits and approvals is provided to decision makers for the lead agencies, NEPA cooperating agencies, and CEQA responsible and trustee agencies. This document is available for review by the public during normal business hours at Folsom City Hall, 50 Natoma Street, Folsom, CA 95630. The DEIR is being distributed for a 45-day period that will end on August 16. The DEIS is being distributed for a 60-day review period that will end on September 7, 2010.

Under CEQA, written comments on the DEIR must be postmarked no later than August 16, 2010. The review period under NEPA will end on September 7, 2010; however, the USACE will continue to accept comments on the DEIS until the ROD is issued. Comments should be sent to the following addresses:

Gail Furness de Pardo
City of Folsom
50 Natoma Street
Folsom, CA 95630
E-mail: gdepardo@folsom.ca.us

Lisa Gibson
U.S. Army Corps of Engineers, Sacramento District, Regulatory Branch
1325 J Street, Room 1480
Sacramento, CA 95814-2922
E-mail: Lisa.M.Gibson2@usace.army.mil

If comments are provided via e-mail, please include the project title in the subject line, attach comments in MS Word format, and include the commenter's U.S. Postal Service mailing address.

A joint public meeting/hearing on the DEIR/DEIS will be conducted by the City and USACE on August 2, 2010 from 5 p.m. to 7 p.m. at the Folsom Community Center, at 52 Natoma Street in Folsom. The City of Folsom Planning Commission will also conduct a public hearing on the DEIR and draft specific plan at its regular meeting

on Wednesday, August 4, 2010 at 6:30 p.m. in the City Council Chambers at 50 Natoma Street. It is not necessary to provide testimony during the public meeting/hearing; comments on the DEIR/DEIS will be accepted throughout the meeting/hearing and will be recorded at the public comment table. Written comments may also be submitted throughout the comment period as described above.

Once all comments have been assembled and reviewed, responses will be prepared to address significant environmental issues that have been raised in the comments. The responses will be included in a FEIR/FEIS.

1.8 ORGANIZATION OF THIS ENVIRONMENTAL IMPACT REPORT/ENVIRONMENTAL IMPACT STATEMENT

The content and format of this EIR/EIS are designed to meet the requirements of CEQA, the State CEQA Guidelines, the requirements of NEPA, the NEPA regulations issued by the Council on Environmental Quality (CEQ), and USACE NEPA regulations, as well as Appendix B to those regulations (NEPA implementation). The EIR/EIS is organized into the following chapters so that the reader can easily obtain information about the project and its specific environmental issues.

- The **cover sheet** identifies lead and any cooperating agencies, contact information for the lead agency contact person, the title of the project and its location, a brief description of the project, a brief abstract, and comment submission information.

- The **Executive Summary** presents an overview of the project and alternatives and associated environmental impacts/consequences; a listing of environmental impacts/consequences and mitigation measures; and impact conclusions regarding growth inducement, irreversible environmental changes, and known areas of controversy and issues to be resolved.

- **Chapter 1, "Introduction and Statement of Purpose and Need,"** explains the CEQA and NEPA processes; lists the lead, cooperating, responsible, and trustee agencies that may have discretionary authority over the project; specifies the underlying project purpose, need, and objectives to which the lead agencies are responding in considering the Proposed Project and project alternatives (both the "Land" and "Water" components); outlines the organization of the document; and provides information on public participation.

- **Chapter 2, "Alternatives,"** presents the Proposed Project Alternative and the alternatives to the Proposed Project for the "Land" portion of the project, and the Preferred Off-site Water Facilities Alternative and other alternatives for the "Water" portion of the project. This chapter contains the project description and describes the project characteristics and components, supporting on- and off-site infrastructure and roadway improvements, and required entitlements for each land use alternative. This chapter also describes the proposed Folsom Specific Plan and identifies the performance standards that will be incorporated into the specific plan and to which subsequent, tentative maps and improvement plans would be required to adhere to when submitted. This chapter provides a description of each alternative in comparison with the Proposed Project Alternative, and describes alternatives considered but eliminated from further consideration.

- **Chapter 3, "Affected Environment, Environmental Consequences, and Mitigation Measures,"** is divided into "A" and "B" sections which describe the setting, impacts and mitigation measures for the "Land" and "Water" portions of the project, respectively. The introduction to Chapter 3 explains the approach to the affected environment (i.e., environmental setting), presents the assumptions used in the environmental analysis, and provides definitions of the types of environmental effects. Each of the remaining sections in Chapter 3 is devoted to a particular issue area and describes the baseline, or existing conditions, and the regulatory setting, then provides an analysis of impacts at an equal level of detail for all project alternatives and mitigation measures that would avoid or eliminate significant impacts or reduce them to a less-than-significant level, where feasible and available.

- **Chapter 4, "Other Statutory Requirements," includes the list of cumulative projects/con**text for the assessment of cumulative impacts, growth-inducing effects, irreversible or irretrievable commitment of

resources, relationship between short-term uses of the environment and maintenance and enhancement of long-term productivity, and unavoidable adverse environmental effects of the Proposed Project and alternatives under consideration ("Land" and "Water").

- **Chapter 5, "References and Organizations and Persons Consulted,"** provides a bibliography of sources cited in the EIR/EIS and identifies the names and affiliations of persons who provided information used in preparing the document and provides information about public involvement.

- **Chapter 6, "Report Preparers,"** lists individuals who were involved in preparing this EIR/EIS.

- **Chapter 7, "Index,"** contains the NEPA-required index for easy reference of to**pics and issues.**

- **Technical appendices conta**in the background information that supports the EIR/EIS.

1.9 DOCUMENTS INCORPORATED BY REFERENCE

This EIR/EIS incorporates by reference several previously prepared environmental documents and technical reports. The documents are identified below along with a brief discussion as to how they relate to the Off-site Water Facilities.

- **Freeport Regional Water Project EIR/EIS – (State Clearinghouse [SCH] No. 20020321320.** SCWA and EBMUD prepared an EIR/EIS in 2002 for the implementation of the Freeport Regional Water Project (Freeport Project), which included the construction and operation of a water supply project to meet regional water supply needs. The main objectives of the Freeport Project were to: (1) support acquisition of additional surface water entitlements for SCWA to promote efficient conjunctive use of groundwater in its Zone 40 service area, (2) construct facilities to enable delivery of existing and anticipated surface water entitlements to SCWA's Zone 40 and EBMUD's respective service areas, and (3) improve EBMUD system reliability and operational flexibility during droughts, catastrophic events, and scheduled major maintenance at Pardee Dam Reservoir.

  This EIR/EIS incorporates by reference the previously certified EIR/EIS and supplemental permit documentation prepared for the Freeport Project. That previously certified EIR/EIS analyzes the potential physical environmental effects of constructing and operating the Freeport Project, which is currently nearing completion. The Freeport Project major facilities include: an intake structure/pumping plant on the Sacramento River near Freeport; a raw water pipeline in Sacramento and San Joaquin counties; and SCWA's Vineyard Surface Water Treatment Plant (Vineyard SWTP) in central Sacramento County. SCWA's use of the Freeport Project is also considered in Reclamation's Operations Criteria and Plan for the Long-Term Operation of the CVP/State Water Project (SWP) (Reclamation 2008) and the supporting Biological Opinion (BO) issued by the U.S. Fish and Wildlife Service (USFWS) (USFWS 2009)

  This EIR/EIS incorporates by reference the Freeport Project EIR/EIS analysis of these water conveyance and intake facilities and does not revisit issues associated with the construction or operation of the existing Freeport Project facilities. A description of the potential Offsite Water Facility Alternatives the City is proposing to integrate into the existing Freeport Project is provided in Chapter 2, "Alternatives" of this EIR/EIS. The complete Freeport Project EIR/EIS may be downloaded from: http://www.freeportproject.org/nodes/project/environmental.php.

- **Zone 40 Water Supply Master Plan EIR (SCH No. 2002122068) and Zone 40 Water System Infrastructure Plan.** SCWA prepared an EIR for the 2002 Zone 40 Water Supply Master Plan, which identifies future water demands within the Zone 40 Service Area and the water supply facilities necessary to accommodate projected demand. The Water Supply Master Plan provides policy direction at a programmatic level with the associated EIR broadly evaluating the construction and operation of new surface, groundwater, and recycled water supply facilities required for production, treatment, storage, and conveyance to areas within Zone 40. This EIR/EIS incorporates by reference the analysis of groundwater impacts resulting from

the implementation of the Zone 40 Water Supply Master Plan along with the potential indirect impacts to the Cosumnes River.

SCWA's Water System Infrastructure Plan provides more project level detail required for the implementation of SCWA's preferred alternative and fills in the gaps of associated smaller infrastructure requirements. This includes describing facility construction and phasing, including operational requirements from existing conditions through ultimate build-out of the Zone 40 water system.

These two documents are available for download at:
http://www.msa.saccounty.net/waterresources/files/Files.asp.

- **White Rock Road Widening Project, Phases A, B, and C, EIR – (SCH No. 2007122088).** This EIR was prepared for the White Rock Road Widening Project to analyze and the potential environmental effects of widening the existing roadway and related improvements between Rancho Cordova and the Sacramento/El Dorado County line. Several of the Offsite Water Facility conveyance alignments follow the future planned alignment for White Rock Road, northeast of its intersection with Grant Line Road. This EIR/EIS acknowledges the potential that the Offsite Water Facility could be constructed concurrently with the White Rock Road widening project for this section of the corresponding conveyance alternatives. The complete widening project EIR may be downloaded from: http://www.dera.saccounty.net/.

- **Easton Project EIR – (SCH No. 2005062128).** The Easton Project, approved by the County of Sacramento, includes the build out of two communities, Glenborough at Easton and Easton Place, on approximately 1,390 acres stretching from Hazel Avenue on the west to Prairie City Road on the east. These communities would consist of a range of mixed commercial/office, a transit-oriented village, and open space and park uses. Alternative alignments of the offsite water facility considered in this EIR/EIS would follow the Easton Valley Parkway alignment, which is proposed as the main thoroughfare through Easton Project. This EIR/EIS acknowledges the potential that the Offsite Water Facility could be constructed concurrently with the construction of Easton Valley Parkway for this section of the corresponding conveyance alternative. The complete Easton Project EIR may be downloaded from: http://www.dera.saccounty.net/.

- **Zone 40 Central Surface and Groundwater Treatment Plant, Pipelines and Corporation Yard Negative Declaration – (SCH No 2004092050).** SCWA prepared this environmental document to assess the environmental effects of constructing the 78-acre Vineyard SWTP, an associated corporation yard, groundwater treatment facilities, and a treated water pipeline along portions of Florin and Excelsior Roads to serve SCWA's Northern Service Area. This treated water pipeline is commonly referred to as the Northern Service Area pipeline and is integrated into Offsite Water Facility Alternative 2B. Construction of these combined facilities was scheduled to begin in 2007 and ended in mid-2010. Offsite Water Facility alternatives evaluated in this EIR/EIS include the potential connection to facilities analyzed in this environmental document. The Zone 40 document may be reviewed at SCWA's main office during normal business hours.

- **Sacramento County General Plan Update Draft EIR – (SCH No. 2007082086).** Sacramento County is currently in the process of updating its General Plan and released a draft EIR for the General Plan Update in August of 2009. Major changes contemplated in the General Plan Update include four growth strategies: infill development, buildout of planned communities, revitalization of commercial corridors and, new growth areas. In conjunction with the new growth areas identified, the County is also proposing to expand the Urban Policy Area (UPA), which identifies specific areas within the unincorporated County where growth will occur.

- According to the draft EIR, the total anticipated increase in water demand between the No Project Scenario and the General Plan Update is 31,633 AFY, but does not factor in future demands from the Cities of Elk Grove, Rancho Cordova, and Folsom. Based on this increase in projected water use, the draft EIR concludes that additional water supplies would be needed and, if these demands were supplied entirely by groundwater, this would result in an exceedance of the Central Sacramento Groundwater Basin's sustainable yield of 273,000 AFY. This EIR/EIS assumes that these new demands would be met solely by groundwater under future cumulative conditions and incorporates by the reference the supporting analysis of potential

groundwater impacts along with the required mitigation. This document may be downloaded from: http://www.dera.saccounty.net/PublicNotices/SQLView/ProjectDetails/tabid/71/Default.aspx?ProjectID=31418.

1.10 STANDARD TERMINOLOGY, ACRONYMS, AND ABBREVIATIONS

1.10.1 STANDARD TERMINOLOGY

The following standard terminology is used in this EIR/EIS to refer to elements of the project (both "Land" and "Water" components):

- **Specific plan** refers to the Folsom Specific Plan.
- **Project** refers to the Folsom South of U.S. 50 project, including the combined project site, the area upon which the related off-site improvements are to be located, the area of the General Plan Amendment, and the Off-Site Water Facilities Study Area. Use of "project" can refer to one or all of the alternatives.
- **Proposed Project** refers specifically to the Proposed Project Alternative for the "Land" analysis.
- **Preferred Alternative** refers specifically to the Preferred Off-Site Water Facility Alternative for the "Water" analysis.

1.10.2 ACRONYMS AND ABBREVIATIONS

The following acronyms and abbreviations are used in this EIR/EIS.

Table 1-1
Acronyms and Other Abbreviations

Term	Definition
°F	degrees Fahrenheit
µg/L	micrograms per liter
2020 Master Plan	*Sacramento Regional Wastewater Treatment Plant 2020 Master Plan*
2020 Master Plant EIR	*Sacramento Regional Wastewater Treatment Plant 2020 Master Plan Final Environmental Impact Report*
AB	Assembly Bill
AC	Asbestos Cement
ACM	asbestos-containing material
ADA	Americans with Disabilities Act
ADT	Average daily traffic
AEP	annual exceedance probability
AFY	Acre-feet per year
ALERT	Automated Local Evaluation in Real Time
Alquist-Priolo Act	Alquist-Priolo Earthquake Fault Zoning Act
ALUP	Airport Land Use Plan
APE	area of potential effects

Table 1-1
Acronyms and Other Abbreviations

Term	Definition
APN	Assessor Parcel Number
ARB	California Air Resources Board
Area 40	Aerojet Superfund site
AST	Above-ground Storage Tank
ATCM	Asbestos Airborne Toxic Control Measure
ATV	all-terrain vehicle
AWWA	American Water Works Association
B. sphaericus	*Bacillus sphaericus*
B. P.	Before Present
BACT	Best Available Control Technology
Basin Plan	water-quality control plan
BAT	best available technology
BCT	best conventional pollutant technology
BMO	Basin Management Objective
BMP	best management practice
BSC	California Building Standards Commission
Bti	*Bacillus thuringiensis israelensis*
CCR	California Code of Regulations
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
Cal/EPA	California Environmental Protection Agency
Cal/OSHA	State of California Occupational Safety and Health Administration's
Cal-Am	Cal-American Water Company
California PRC	California Public Resources Code
CALFED	California Bay-Delta Authority
CALSIMII	California Simulation Model II
Caltrans	California Department of Transportation
CAP	Clean Air Plan
CARB	California Air Resources Board
CAWP	Central Amador Water Project
CBC	California Building Standards Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CD	Centralized Development

Table 1-1
Acronyms and Other Abbreviations

Term	Definition
CDE	California Department of Education
CDFG	California Department of Fish and Game
CDMG	California Division of Mines and Geology
CDP	census designated place
CDPH	California Department of Public Health
CEC	California Energy Commission
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
Cfs	cubic feet per second
CGS	California Geological Survey
CHP	California Highway Patrol
CIP	capital improvement program
City	City of Folsom
City General Plan	*City of Folsom General Plan*
CIWMA	California Integrated Waste Management Act
CIWMB	California Integrated Waste Management Board
CLOMR	Conditional Letters of Map Revision
CMU	Concrete Masonry Unit
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	Carbon Dioxide
COC	Constituents of Concern
County	Sacramento County
CPP	Cosumnes Power Plant
CRHR	California Register of Historical Resources
CSC	California Species of Special Concern
CSCGMP	Central Sacramento County Groundwater Management Plan
CSD-1	County Sanitation District No. 1
CSMP	Corridor System Management Plan
CTR	California Toxics Rule
CVFPB	Central Valley Flood Protection Board

Table 1-1
Acronyms and Other Abbreviations

Term	Definition
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
CWA	Federal Clean Water Act
dBA	A-weighted Decibel
DBE	Design Basis Earthquake
DBH	diameter at breast height
DBP	disinfection by-products
DDT	dichloro diphenyl trichloroethane
DEIR	draft environmental impact report
DEIS	draft environmental impact statement
Delta	Sacramento–San Joaquin Delta
DFG	California Department of Fish and Game
DHS	California Department of Health Services
DKS	DKS Associates
DOC	California Department of Conservation
DOF	California Department of Finance
DPC	Delta Protection Commission
DPM	Diesel particulate matter
DPROS	Department of Regional Parks, Recreation and Open Space
DSOD	Division of Safety of Dams
DTSC	California Department of Toxic Substances Control
du/ac	dwelling units per acre
DWR	California Department of Water Resources
DWSAP	Drinking Water Supply Assessment Program
EA	environmental assessment
EBMUD	East Bay Municipal Utility District
ECORP	ECORP Consulting, Inc.
EDC	endocrine disrupting compound
EDCAQMD	El Dorado County Air Quality Management District
EDU	equivalent dwelling unit
EID	El Dorado Irrigation District
EIR	environmental impact report
EIS	environmental impact statement
ELF	extremely low frequency

Table 1-1
Acronyms and Other Abbreviations

Term	Definition
EMF	electromagnetic field
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ERNS	Emergency Response Notification System
ESA	Federal Endangered Species Act
ESWTR	Enhanced Surface Water Treatment Rule
EWA	Environmental Water Account
FCC	Federal Communications Commission
FCUSD	Folsom Cordova Unified School District
FEIR	final environmental impact report
FEIS	final environmental impact statement
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FIS	Flood Insurance Study
FMMP	Farmland Mapping and Monitoring Program
FOE	Finding of Effect
FONSI	findings of no significant impact
FR	Federal Register
FRA	USDOT Federal Railroad Administration
FRWA	Freeport Regional Water Authority
FS	Feasibility Study
FSC	Folsom South Canal
g	gravity
G	gauss
GenCorp	Aerojet General Corporation
GET	Groundwater Extraction and Treatment
GHG	Greenhouse Gases
GIS	Geographic Information Systems
GO	General Obligation
Gpd	gallons per day
Gpm	gallons per minute
GSWC	Golden State Water Company
H2S	Hydrogen Sulfate

Table 1-1
Acronyms and Other Abbreviations

Term	Definition
HA	Hydrologic Area
HAA	Haloacetic Acids
HABS	Historic American Building Survey
HAER	Historic American Engineering Record
HAP	Hazardous Air Pollutant
HCD	California Department of Housing and Community Development
HCM	Highway Capacity Manual
HCP	Habitat Conservation Plan
HMMP	Hazardous Materials Management Plan
HMP	Hydromodification Management Plan
HOV	High Occupancy Vehicle
HP	horsepower
HPTP	historic property treatment plan
Hz	hertz
I-80	Interstate 80
ICBO	International Conference of Building Officials
IPCC	International Panel on Climate Change
IRWMP	Integrate Regional Water Management Plan
ISO	Insurance Services Office
ITA	Indian Trust Assets
IWS	Initial Water Supply
kV	kilovolt
kWh	Kilowatt hour
LAFCo	Local Agency Formation Commission
LAR	lower American River
lb/day	pounds per day
LEDPA	Least Environmentally Damaging Practicable Alternative
L_{eq}	Equivalent Sound Level
LID	Low Impact Development
LIM	Land Inventory and Monitoring
LOMR	Letters of Map Revision
LOS	level of service
LRT	light-rail transit

Table 1-1
Acronyms and Other Abbreviations

Term	Definition
LUST	Leaking Underground Storage Tanks
M&I	Municipal and Industrial
MAF	Million Acre Feet
Master Plan	City of Folsom Parks and Recreation Master Plan
MBTA	Migratory Bird Treaty Act
MCL	Maximum Contaminant Level
MEI	Maximally Exposed Individual
MEP	maximum extent practicable
MF	Micro-Filtration
mG	milligauss
MG	million gallons
Mgd	million gallons per day
MHMP	Sacramento County Multi-Hazard Mitigation Plan
MLD	Most Likely Descendant
MMP	mitigation and monitoring plan
MMRP	Mitigation Monitoring and Reporting Program
motocross	MX
MOU	Memorandum of Understanding
MOU	Memorandum of Understanding
MRP	monitoring and reporting program
MRZ	Mineral Resource Zone
MS4	Municipal Separate Storm Sewer System
msl	mean sea level
MTCO2e/yr	Metric Tons of Carbon Dioxide Equivalent per Year
MTP	Metropolitan Transportation Plan
MTP2035	Metropolitan Transportation Plan for 2035
MUN	Municipal and domestic supply
MVA	megavolt amperes
MW	megawatt
MWh	Megawatt hour
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NAICS	North American Industry Classification System
NCIC	North Central Information Center

Table 1-1
Acronyms and Other Abbreviations

Term	Definition
NCMWC	Natomas Central Mutual Water Company
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NCWA	Northern California Water Agency
NDMA	n-nitrosodimethylamine
NEHRP	National Earthquake Hazards Reduction Program
NEHRPA	National Earthquake Hazards Reduction Program Act
NEPA	National Environmental Policy Act
NESHAP	National Emission Standard for Hazardous Air Pollutants
NFA	No Federal Action
NHC	Northwest Hydraulics Consultants
NHPA	National Historic Preservation Act
NIEHS	National Institute of Environmental Health Sciences
NIH	National Institute of Health
NMFS	National Marine Fisheries Service
NO_3	Nitrate
NOA	naturally occurring asbestos
NOI	notice of intent
NOP	notice of preparation
NO_X	oxides of nitrogen
NP	No Project
NPDES	National Pollutant Discharge Elimination System
NPL	National Priority List
NPS	National Park Service
NRC	Nuclear Regulatory Commission
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NRPA	National Recreation and Park Association
NSA	Northern Service Area
NTR	National Toxics Rule
NTU	Neotrophic Unit
O&M plan	operations and management plan
OCAP	Operations Criteria and Plan
OEHHA	California Office of Environmental Health Hazard Assessment
OES	Governor's Office of Emergency Services
OHV	Off-Highway Vehicle

Table 1-1
Acronyms and Other Abbreviations

Term	Definition
OHV Park	State Vehicular Recreation Area
OPR	Office of Planning and Research
OSHA	U.S. Department of Labor, Occupational Safety and Health Administration
OU	Operable Unit
PA	programmatic agreement
PAH	Polycyclic aromatic hydrocarbon
Parkway	American River Parkway
pc/mi/ln	passenger cars per mile per lane
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
pCi/l	pico-curies per liter
PG&E	Pacific Gas & Electric Company
PGA	Peak Ground Acceleration
PHG	Public Health Goal
PM_{10}	Respirable Particulate Matter with an aerodynamic diameter of less than 10 microns
Porter-Cologne Act	Porter-Cologne Water Quality Control Act of 1969
PP	Proposed Project
ppb	parts per billion
PPCP	Pharmaceuticals and Personal Care Products
ppm	parts per million
PSR	Project Study Report
RCRA	Resource Conservation and Recovery Act
RD	Reclamation District
REC	recognized environmental condition
Reclamation	U.S. Bureau of Reclamation
RHNA	Regional Housing Needs Allocation
RHNP	Regional Housing Needs Plan
RI	Remedial Investigations
RIM	Resource Impact Minimization
ROD	record of decision
ROG	reactive organic gases
ROW	right-of-way
RT	Sacramento Regional Transit
RWD	reports of waste discharge

Table 1-1
Acronyms and Other Abbreviations

Term	Definition
RWQCB	Regional Water Quality Control Board
RWSP	Replacement Water Supply Project
SACOG	Sacramento Area Council of Governments
SASD	Sacramento Area Sewer District
SB	Senate Bill
SCADA	Supervisory Control and Data Acquisition
SCS	Soil Conservation Service
SCWA	Sacramento County Water Agency
SDWA	Safe Water Drinking Act
SFID	School Facilities Improvement District
SFPD	School Facilities Planning Division
SGA	Sacramento Groundwater Authority
SHPO	state historic preservation officer
SIP	State Implementation Plan
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMARA	Surface Mining and Reclamation Act
SMFD	Sacramento Metropolitan Fire District
SMFD	Sacramento Metropolitan Fire Department
SMUD	Sacramento Municipal Utilities District
SPRR	Southern Pacific Railroad
SQIP	Stormwater Quality Improvement Plan
SR	State Route
SRA	State Recreation Area
SRCSD	Sacramento Regional County Sanitation District
SRWP	Sacramento River Watershed Program
SRWTP	Sacramento Regional Wastewater Treatment Plant
SSQP	Stormwater Quality Partnership
State CEQA Guidelines	California Environmental Quality Act Guidelines
SVAB	Sacramento Valley Air Basin
SVRA	State Vehicular Recreation Area
SWMP	Storm Water Management Plan
SWP	State Water Project
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
SWTP	Surface Water Treatment Plant

Table 1-1
Acronyms and Other Abbreviations

Term	Definition
TAC	toxic air contaminant
TCE	trichloroethylene
TDS	Total Dissolved Solids
THM	Trihalomethane
TIA	transportation impact analysis
TMDL	total maximum daily load
TOC	Total Organic Carbon
TSMP	Toxic Substances Monitoring Program
TSS	Total Suspended Solids
U.S. 50	U.S. Highway 50
UBC	Uniform Building Code
UCD	University of California at Davis
UCMP	University of California Museum of Paleontology
UIC	Underground Injection Control Program
UPA	Urban Policy Area
URBEMIS	Urban Emissions Model
USA	Underground Service Alert
USACE	U.S. Army Corps of Engineers
USB	Urban Service Boundary
USC	United States Code
USDA	U. S. Department of Agriculture
USDOT	U.S. Department of Transportation
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	Underground Storage Tank
UV	Ultra-violet light
V/C	Volume-to-capacity
VOC	volatile organic compound
vphpl	vehicles per hour per lane
WDR	waste discharge requirement
WFA	Water Forum Agreement

Table 1-1 Acronyms and Other Abbreviations	
Term	Definition
WSMP	Water Supply Master Plan
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant

2 ALTERNATIVES

2.1 INTRODUCTION

This chapter describes the Proposed Project and a range of reasonable alternatives to the Proposed Project Alternative consistent with the requirements of California Code of Regulations (CCR) Sections 15124 and 15126.6 and 40 Code of Federal Regulations (CFR) 1502.14.

The project includes several components which affect different geographic areas. These components are described in more detail below:

- The "Land" component addresses proposed land use changes in the City of Folsom's sphere of influence area. The land use component includes two geographical areas:
    - the "Folsom Specific Plan Area" (SPA), which refers to the sphere of influence area where land use decisions would be governed by the proposed Folsom Plan Area Specific Plan, and
    - the "Off-site Improvements," which refer to various areas outside of the sphere of influence area where utility or roadway improvements would be constructed to support the proposed land use changes.
- The "Water" component addresses the facilities required to provide and convey a water supply to the proposed development. The "Water" Study Area is used to describe the areas which could be affected by the proposed "Water" components.
- A General Plan Amendment would be required as part of the project. This General Plan Amendment is described in more detail in Section 2.17, but would include increases in permitted General Plan densities in some areas of the existing City of Folsom. These areas are described as the "General Plan Amendment Area." A discussion of the environmental effects of the General Plan Amendment is included in Section 3A.10, "Land Use and Agricultural Resources – Land."

Exhibit 2-1 illustrates the various geographic areas and descriptors which will be used throughout this EIR/EIS. Discussion of the Proposed Project and alternatives under consideration is divided into two sections, for "Land" and "Water," because the alternatives for "Water" are different from those for "Land."

The five "Land" alternatives evaluated at an equal level of detail in this draft document, known as a draft environmental impact report/draft environmental impact statement (draft EIR/EIS), are as follows:

- No Project Alternative
- No USACE Permit Alternative
- Proposed Project (Applicants' Proposed Alternative)
- Resource Impact Minimization Alternative
- Centralized Development Alternative
- Reduced Hillside Development Alternative

The "Water" project components are evaluated in eleven separate Off-site Water Facility Alternatives at an equal level of detail in this draft EIR/EIS and include:

- No USACE Permit Off-site Water Facility Alternative – Raw Water Conveyance – Grant Line Road Alignment and On-site WTP
- Proposed Off-site Water Facility Alternative – Raw Water Conveyance – Grant Line Road Alignment and On-site WTP

- Off-site Water Facility Alternative 1 – Raw Water Conveyance – Grant Line Road Alignment and White Rock WTP
- Off-site Water Facility Alternative 1A – Raw Water Conveyance – Grant Line Road Route Variation Alignment and White Rock WTP
- Off-site Water Facility Alternative 2 – Treated Water Conveyance – Douglas Road Alignment and Vineyard Surface Water Treatment Plant (SWTP)
- Off-site Water Facility Alternative 2A – Treated Water Conveyance – Douglas Road Route Variation Alignment and Vineyard SWTP
- Off-site Water Facility Alternative 2B – Treated Water Conveyance – North Douglas Tanks Variation Alignment and Vineyard SWTP
- Off-site Water Facility Alternative 3 – Raw Water Conveyance – Douglas Road Alignment and White Rock WTP
- Off-site Water Facility Alternative 3A – Raw Water Conveyance – Douglas Road Route Variation Alignment and White Rock WTP
- Off-site Water Facility Alternative 4 – Raw Water Conveyance to Folsom Boulevard Alignment and Folsom Boulevard WTP
- Off-site Water Facility Alternative 4A – Raw Water Conveyance to Folsom Boulevard – Route Variation Alignment and Folsom Boulevard WTP

These alternatives were developed by the City of Folsom (City) and the U.S. Army Corps of Engineers (USACE), Sacramento District, after review of scoping comments received on the notice of preparation (NOP) and notice of intent (NOI) and voiced at scoping meetings. The alternatives are based on the project purpose, alternatives screening criteria (described below), and results of the draft Section 404(b)(1) alternatives analysis (Appendix L). As requested by USACE, this document also evaluates a No USACE Permit Alternative. These alternatives represent a reasonable range of alternatives to the Proposed Project, consistent with California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) requirements. The Proposed Project and alternatives under consideration (with the exception of the No Project Alternative required by CEQA) have each been formulated to feasibly accomplish most of the basic objectives of the project as discussed in Chapter 1, "Introduction and Statement of Purpose and Need," of this EIR/EIS, and could avoid or substantially lessen one or more of the significant effects.

A summary comparison of these alternatives, as well as identification of the "environmentally superior alternative," required under CEQA is provided in Section 2.9 of this chapter.

2.2 CEQA/NEPA REQUIREMENTS FOR PROJECT DESCRIPTION AND EVALUATION OF ALTERNATIVES

2.2.1 CEQA REQUIREMENTS

PROJECT DESCRIPTION

The guiding principles for the content of a project description in an EIR are provided by the State CEQA Guidelines (14 CCR Section 15124). Section 15124 states that "[t]he description of the project shall contain the

following information, but should not supply extensive detail beyond that needed for evaluation and review of the environmental impact." The contents of a project description shall include:

- the precise location and boundaries of the Proposed Project Alternative, preferably on a detailed topographic map, along with the general location of the project on a regional map;
- a statement of the objectives sought by the Proposed Project Alternative, including the underlying purpose of the project, designed to assist the lead agency in the formulation of alternatives and preparation of findings or a statement of overriding considerations, if necessary;
- a general description of the project's technical, economic, and environmental characteristics, considering the principal engineering proposals if any and supporting public service facilities; and
- a statement briefly describing the intended uses of the EIR, including (to the extent the information is known to the lead agency) a list of the agencies that are expected to use the EIR in their decision-making, a list of permits and other approvals required to implement the project, and a list of related environmental review and consultation requirements required by federal, state, or local laws, regulations, or policies.

This section, while combined with the alternatives analysis required by CEQA and NEPA, also fulfills all of the requirements of CEQA for a project description by describing the Proposed Project Alternative (applicant's proposed alternative).

FOCUS OF THE EIR ALTERNATIVES ANALYSIS

The guiding principles for the selection of alternatives for analysis in an EIR are provided by the State CEQA Guidelines (14 CCR Section 15126.6). CCR Section 15126.6 states that the alternatives analysis must:

- describe a range of reasonable alternatives to the project that could feasibly attain most of the basic objectives of the project but would substantially lessen or avoid any of the significant effects of the project;
- focus on alternatives capable of avoiding or substantially lessening any of the significant environmental impacts of the Proposed Project Alternative, even if they may be more costly or could otherwise impede some of the project's objectives; and
- evaluate the comparative merits of the alternatives.

The focus, definition, and number of alternatives evaluated in this EIR/EIS are governed by the "rule of reason" in accordance with CCR Section 15126.6 of the State CEQA Guidelines. That is, the range of alternatives presented in the EIR/EIS is limited to potentially feasible alternatives that will foster infirmed decisionmaking and public participation. An EIR need not, however, consider every conceivable alternative to the project.

In addition to the guiding principles for selection of alternatives set forth above, the State CEQA Guidelines require that an EIR evaluate a "No Project Alternative," to provide the decision makers and the public with an overview of what could reasonably be expected to occur if the proposed Folsom South of U.S. Highway 50 Specific Plan project were not approved and implemented (see Section 2.4 below). The State CEQA Guidelines also require that an EIR identify alternatives that were considered for evaluation but eliminated from further consideration (see Section 2.9–2.11 below), and that the EIR identify the "environmentally superior alternative." Consideration of the other CEQA-mandated requirements is provided in Chapters 3 and 4 of this EIR/EIS.

SCREENING CRITERIA

Consistent with the requirements of CEQA, the City used the CEQA project objectives identified in Chapter 1, "Introduction and Statement of Purpose and Need," as criteria to screen the alternatives that should be considered

in this EIR/EIS and to determine whether the alternatives would avoid or substantially lessen any of the significant environmental impacts of the project.

2.2.2 NEPA REQUIREMENTS

FOCUS OF THE EIS ALTERNATIVES ANALYSIS

The NEPA Council on Environmental Quality (CEQ) Regulations (40 CFR 1502.14) require that an EIS include:

- an exploration and objective evaluation of reasonable alternatives;
- identification of the alternatives considered but eliminated from detailed study, along with a brief discussion of the reasons that these alternatives were eliminated;
- substantial treatment of each alternative considered in detail, including the Proposed Action (Proposed Project), to allow reviewers to evaluate the comparative merits of the proposed action (i.e., proposed project) and alternatives;
- include any reasonable alternative not within the lead agency's jurisdiction;
- consideration of the No Action Alternative;
- identification of the agency's preferred alternative, if any; and
- appropriate mitigation measures not already included in the proposed action or alternatives.

Additionally, USACE NEPA regulations require identification and consideration of a No Department of the Army Section 404 of the Clean Water Act (CWA) permit alternative, which is referred to in the EIR/EIS as the No USACE Permit Alternative.

Alternatives to the Proposed Project Alternative that were considered and evaluated in this EIR/EIS are described below. Consideration of the other NEPA-mandated requirements is provided in Chapters 3 and 4 of this EIR/EIS.

Unlike CEQA, which permits the evaluation of alternatives to occur in less detail than is provided for the Proposed Project Alternative, NEPA requires the analysis of alternatives to occur at a substantially similar level of detail as that devoted to the proposed action. The NEPA Regulations (40 CFR 1502.14) require agencies to rigorously explore and objectively evaluate all reasonable alternatives and to devote substantial treatment to each alternative considered, including the Proposed Project Alternative.

SCREENING CRITERIA

The following screening criteria are in compliance with the U.S. Environmental Protection Agency (EPA) Section 404(b)(1) Guidelines (40 CFR, 2301 et seq.), which are the substantive criteria used by USACE in evaluating discharges of fill material into waters of the U.S. under Section 404 of the CWA. The guidelines require that the following four criteria be satisfied for USACE to make a decision that a proposed discharge is in compliance:

- The discharge must be the Least Environmentally Damaging Practicable Alternative (LEDPA).
- The discharge must not violate any water quality standard or toxic effluent standard, or jeopardize the continued existence of a threatened or endangered species.
- The discharge must not result in a significant degradation of the waters of the U.S.

- Appropriate and practicable steps must be taken that will minimize potential adverse impacts of the discharge on the aquatic ecosystem.

Before USACE can issue a permit, it must find that the requirements of the Section 404(b)(1) Guidelines have been satisfied. The key criterion and the focus of the alternatives analysis is the requirement that the discharge be the LEDPA. USACE considers practicable alternatives to include, but not to be limited to:

- on-site activities that do not include a discharge into waters of the U.S. or ocean waters; and
- discharges of dredged or fill material at other locations in waters of the U.S. or ocean waters.

Criteria which are used to determine whether there are practicable alternatives include the availability of areas that are not presently owned by the applicant that could be reasonably obtained, used, expanded, or managed to fulfill the basic purpose of the proposed activity (after considering cost, existing technology, and logistics) and whether an alternate project location that does not require access or proximity to or siting within the special aquatic site in question to fulfill its basic purpose (i.e., that is not water dependent) is available. Practicable alternatives that do not involve special aquatic sites are presumed to be available unless clearly demonstrated otherwise. Where the activity associated with a discharge is proposed for a special aquatic site (as defined under Section 404(b)(1) Guidelines) does not require access, proximity or siting within the special aquatic site to fulfill its basic purpose all practicable alternatives to the proposed discharge that do not involve a discharge into a special aquatic site are presumed to have less adverse impacts on the aquatic ecosystem, unless clearly demonstrated.

The key provisions in the language are "practicability" and "overall project purpose." An alternative is considered to be practicable if it is available to the applicant and capable of being accomplished by the applicant after consideration of costs, existing technology, and logistics, in light of the overall project purpose. As stated in Chapter 1, "Introduction and Statement of Purpose and Need," USACE has determined that the overall purpose of the project is to provide a large-scale mixed-use community with associated infrastructure, within the Urban Services Boundary in eastern Sacramento County If a practicable alternative is identified that would have less adverse impacts on the aquatic ecosystem and would not have other significant adverse environmental consequences, then USACE would be unable to issue a permit for the Proposed Project.

2.3 "LAND" PORTION OF THE PROJECT

Section 2.3 describes those facilities that would be developed as part of the "Land" portion of the project under the various alternatives considered and evaluated in this EIR/EIS. (Facilities that would be developed as part of the "Water" portion of the project are described later in this chapter in Sections 2.4 through 2.8.)

2.3.1 PROPOSED PROJECT ALTERNATIVE

INTRODUCTION

This section describes the Proposed Project Alternative for the "Land" portion of the project. The Proposed Project Alternatives for both the "Land" and "Water" portions of the project have been formulated to achieve the project purpose, objectives, and needs of the project, as discussed in Chapter 1, "Introduction and Statement of Purpose and Need," of this EIR/EIS.

The South Folsom Property Owners Group–the project applicant(s), are seeking adoption by the City of the proposed *Folsom Plan Area Specific Plan* (specific plan), hereinafter referred to as the "Folsom South of U.S. 50 Specific Plan project" or the "Proposed Project" and associated entitlements discussed in greater detail below. The Folsom South of 50 Specific Plan project would be a mixed-use development on approximately 3,510 acres in the Folsom sphere of influence, immediately south of the Folsom city limits. The total area that would be annexed into the City would be 3,584 acres, and also includes portions of the U.S. Highway 50 (U.S. 50) right-of-way. The area to be annexed into the City is referred to through this EIR/EIS as the SPA. A copy of the draft

Folsom Plan Area Specific Plan is available for review at the City of Folsom offices located at 50 Natoma Street, Folsom, CA 95630 and is also attached to this EIR/EIS as Appendix N. The project applicant(s) are also seeking authorization and permit(s) from USACE to place dredged or fill material into waters of the U.S.

PROGRAM LEVEL ANALYSIS AND ADDITIONAL DETAILED ANALYSIS

As discussed in Chapter 1 (Section 1.4.3), this EIR/EIS includes a program-level, or "first-tier," analysis for the project and considers the broad environmental effects of adoption and implementation of the Folsom Specific Plan. The specific plan and the EIR/EIS include performance standards and mitigation measures that would apply to all subsequent, future project development phases under the specific plan (as conditions of approval) in the SPA. For information on project phasing, please refer to Section 2.3.1.

In addition to the programmatic analysis described above, this EIR/EIS also includes an additional detailed analysis of certain specific issue areas for the Proposed Project Alternative. Where such an analysis has been conducted, a statement is provided at the start of each issue area in the 3A "Land" sections that impacts would be the same under the additional level of detailed analysis as they would under the programmatic level of analysis.

The extent of environmental review, if any, for future development entitlements will depend on a number of factors as described in Chapter 1 (Section 1.4.3).

This section refers to the "project" as the "Proposed Project" since it encompasses the Proposed Project Alternative.

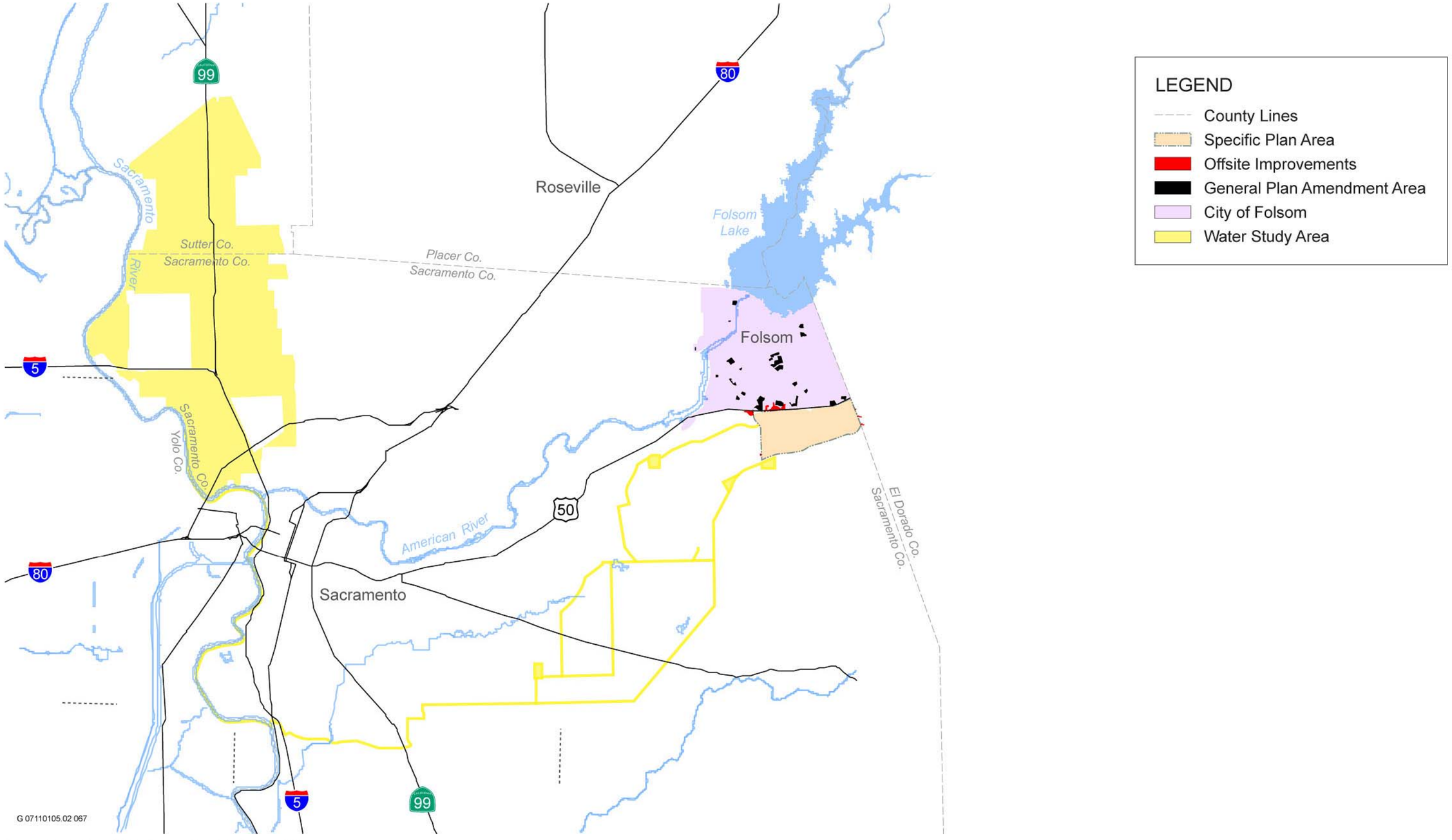
REGIONAL LOCATION

The SPA is generally located in eastern Sacramento County, south of U.S. 50, immediately south of the Folsom city limits (Exhibits 2-1 and 2-2). The SPA lies south of U.S. 50, north of White Rock Road, east of Prairie City Road (a small area extends west of Prairie City Road at the southwest corner of the SPA), and west of the Sacramento/El Dorado County line.

The City of Folsom and the SPA are in the Sierra Nevada foothills, at the eastern edge of the alluvial Sacramento Valley. The Sierra Nevada province is characterized by steep-sided hills and narrow, rocky stream channels. This province consists of Pliocene and older deposits that have been uplifted as a result of plate tectonics, granitic intrusion, and volcanic activity. Subsequent glaciation and additional volcanic activity are factors that led to the east-west orientation of stream channels. The Sacramento Valley is a nearly flat alluvial plain that extends almost 180 miles from the Sacramento–San Joaquin Delta on the south to Redding on the north, and approximately 50 miles from the Sierra Nevada foothills on the east to the Coast Range on the west. Climate in the Folsom area is characterized by warm, dry summers with an almost complete absence of rain, and mild winters with relatively light rains.

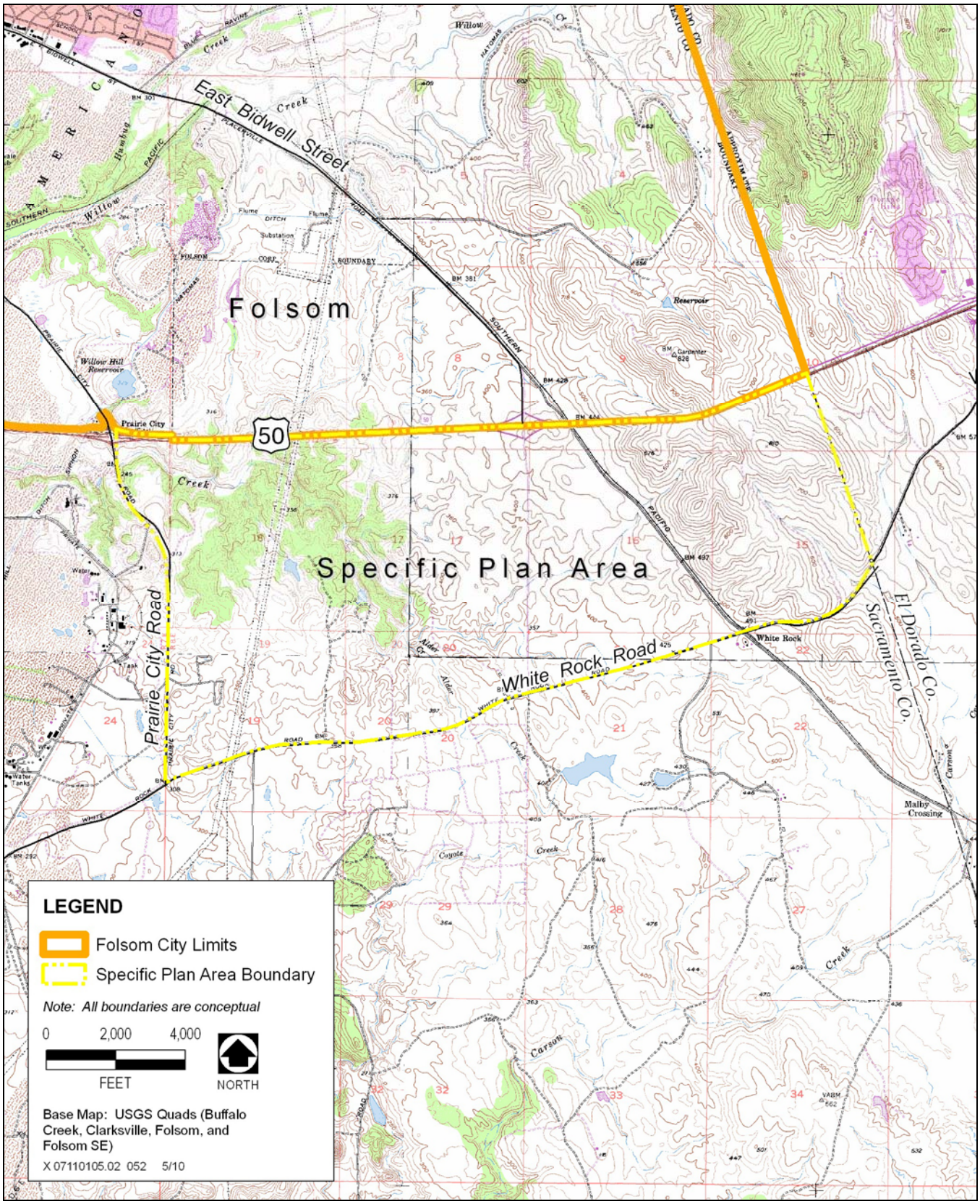
A large portion of the SPA is currently being used as pastureland for cattle grazing. Surrounding land uses include facilities owned by Aerojet General Corporation and associated buffer lands to the west; U.S. 50 with urbanized development within the existing Folsom city limits to the north; residential development to the east; and agricultural and grazing land uses to the south.

Access to the SPA would be provided via the existing White Rock Road, Prairie City Road, and Scott Road. Both Prairie City Road and Scott Road provide existing access to the site from U.S. 50, which is limited-access. Proposed roadways which would serve the SPA include Oak Avenue and Empire Ranch Road (both of which have proposed interchanges with U.S. 50), and the proposed Easton Valley Parkway, which would provide an east-west connection to the SPA.



Source: Adapted from CSAA, Bay and Mountain Section 1999

Regional Location Map and Project Components **Exhibit 2-1**



Source: Sacramento Area Council of Governments 2006

Project Site Location Map **Exhibit 2-2**

REQUESTED ENTITLEMENTS

The following entitlements are requested from the City and USACE for the Proposed Project Alternative. Additional approvals, permits, and authorizations are listed in Chapter 1, "Introduction and Statement of Purpose and Need." The entitlements necessary for the off-site water facilities are discussed in Section 2.13.2 of this EIR/EIS.

City of Folsom

Adoption of the Proposed Project Alternative, as well as action alternatives under consideration, contemplates approval of the following City entitlements:

- certification of the EIR/EIS and Mitigation Monitoring and Reporting Program (MMRP),
- amendment of the Folsom General Plan,
- adoption of the Folsom Plan Area Specific Plan,
- adoption of a Public Facilities Financing Plan,
- potential approval of development agreements between the City and project applicant(s),
- approval of large-lot tentative maps, and
- pre-zoning of the SPA.

Future City entitlement approvals may include, but are not limited to, the following:

- use permits,
- approval of tentative parcel and subdivision maps,
- design review,
- lot line adjustments,
- engineering improvement plans,
- planned development permits,
- grading plans, and
- Development Agreement between the City and future project applicant(s).

Each of these requested entitlements and approvals is described in turn below.

- **Certification of the EIR/EIS and Mitigation Monitoring and Reporting Program.** After preparation of the Final EIR/EIS, the City will consider certification of the EIR/EIS and MMRP. The Final EIR/EIS will respond to significant environmental comments raised during review of the Draft EIR/EIS and will document any project modifications, corrections, or revisions to the environmental impacts or mitigation measures of the Proposed Project Alternative. The MMRP will outline what actions must be taken, as conditions of approval, to comply with the EIR/EIS, and the timing and responsibilities for conducting and monitoring the various mitigation activities.

- **General Plan Amendments and Annexation to the City of Folsom.** The City of Folsom would adopt a General Plan Amendment, with several components. The General Plan Amendment would:

    - define the compatible land uses for the SPA;

    - propose annexation of the entire approximately 3,584-acre SPA into the City of Folsom's territory;

    - modify densities for Single Family, Multi-Family Medium Density, and Multi-Family High Density General Plan land use designations throughout the City of Folsom (See Section 2.17, "General Plan Amendment" for more details);

    - amend the General Plan by adding a Mixed Use land use category; and

- amend the City's transportation Level of Service (LOS) policy for the SPA (this change would not affect the existing city).

Prior to approval of annexation by the Sacramento Local Agency Formation Commission (LAFCo), the project applicant(s) must demonstrate that the Proposed Project Alternative meets the conditions established in the Memorandum of Understanding (MOU) between the City and Sacramento, Sacramento County, and Resolution 1196 of the Sacramento LAFCo Approving the City of Folsom Sphere of Influence Amendment Application. These conditions are listed below.

- Revise and update the City's General Plan in accordance with State law.

- Obtain a certification of substantial compliance from the California Department of Housing and Community Development consistent with California Government Code Section 65585(d) or (h). The City shall establish in its approved Housing Element that it has or will meet its regional share housing needs for all income levels for the second and third Housing Element revisions, as defined in California Government Code Section 65588.

- Adopt appropriate land use designations for all property within the sphere of influence area.

- Prezone the property consistent with California Government Code Section 56375 and the Folsom General Plan.

- Apply comprehensive planning of the SPA.

- Provide a program for implementation and financing for major infrastructure and services components, including identification of the source of water supplies to serve the annexed area.

- Ensure collaborative participation by the public and stakeholders including Sacramento and El Dorado Counties, and the Folsom Cordova Unified School District.

- Prepare a plan for necessary improvements to each jurisdiction's roadway network to accommodate increased traffic from the SPA, in cooperation with Sacramento and El Dorado Counties. This plan must include a list of improvements, phasing plan, and clearly defined financing mechanism. Implementation of this plan must result in service levels on local roadways consistent with each jurisdiction's general plan.

- Identify traffic and transportation measures which are needed to mitigate potential impacts on regional transportation facilities from proposed development within the SPA. The City must also identify a funding mechanism to construct the traffic and transportation measures necessary to fully mitigate impacts from the SPA, and a timeline for the construction of improvements. As soon as reasonably possible, these improvements should be programmed into the Metropolitan Transportation Plan and Metropolitan Transportation Improvement Program.

- Prepare a Transit Master Plan and a Bikeway Master Plan to delineate transit routes and bikeways in the SPA, consistent with the goals and policies of the City's General Plan.

- Preparation of a Drainage Master Plan for the SPA that includes hydrologic modeling along Alder Creek, documenting no net increase in downstream floodwater surface elevations;

- Document the City's multi-species habitat mitigation strategy (Habitat Conservation Plan [HCP]) for the SPA (may be fulfilled through City participation in Southeast Sacramento County HCP process).

- Document that on-site surface contamination has been remediated, and that groundwater contamination has been remediated or is being remediated effectively prior to annexation of any property owned by Aerojet General Corporation.

- Demonstrate that the City has a sufficient water supply to serve existing customers in compliance with the Water Forum agreements, and all proposed uses within the SPA per California Government Code Section 56668(k);

- Demonstrate the timely availability of wastewater transmission and treatment capacity.

- Meet and confer with special districts regarding impacts to operations.

- Where permitted by law, incorporate feasible school mitigation requirements into development agreements.

- Comply with mitigation measures identified in environmental review for expansion of sphere of influence boundary.

- Mitigate for oak woodland and habitat preservation, including 30% preservation of natural open space within the annexed area.

- Demonstrate that services can be provided in compliance with the City's General Plan.

- Establish revenue sharing agreements with Sacramento County establishing the apportionment of future tax revenues in the SPA.

► **Folsom Specific Plan Adoption.** The specific plan is intended to provide a comprehensive land use, policy, and regulatory document to govern all future development in the SPA. The specific plan excludes the area of proposed interchanges with U.S. 50 because no land use designations are proposed in these areas. The goal of the specific plan is to establish a development framework for land use, resource protection, circulation, public utilities and services, design, and implementation. Development of the specific plan (i.e., the Proposed Project Alternative under the CEQA process) and the subsequent entitlement process provides for a sequence of community input and government review to ensure that development occurs in a logical, consistent, and timely manner.

Specific plans are an implementation mechanism for new-growth areas authorized, but not mandated, by California statute (California Government Code Section 65451 et seq.). The content of a specific plan is defined in California Government Code Section 64541(a), which specifies the following in detail:

- the distribution, location, and extent of the uses of the land, including open space, within the area covered by the plan;

- the proposed distribution, location, extent, and intensity of major components of public and private transportation, sewage, water drainage, solid-waste disposal, energy, and other essential facilities proposed to be located within the area covered by the plan and needed to support the land uses described in the plan;

- standards and criteria by which development would proceed, and standards for the conservation, development, and utilization of natural resources, where applicable; and

- a program of implementation measures including regulations, programs, public-works projects, and financing measures necessary to carry out the above-listed criteria.

Under state law, the specific plan implements and must be consistent with the goals, policies, and objectives of the approving local agency's general plan. Here, the project is intended to be consistent with the *Folsom General Plan* (City General Plan), as adopted on October 31, 1988 and amended through September 12, 2008 (the date of the project's NOP). All subsequent entitlements and approvals relating to land or infrastructure in the plan area (i.e., SPA), including but not limited to subdivisions, public-works projects, prezones, rezones, and conditional use permits, are required to be consistent with the specific plan if the specific plan is to be used as the entitling document. Once the specific plan is adopted, the maximum extent of development in the SPA will have been determined and cannot be exceeded. However, development intensity and residential density within individual communities in the SPA may be transferred from lower density areas to higher density areas, with City approval, provided that the maximum limits set forth in the specific plan are not exceeded.

- **Public Facilities Financing Plan.** A Public Facilities Financing Plan has been prepared and included as part of the Folsom Plan Area Specific Plan, and would be adopted by the City Council before the approval of any tentative map within theSPA. The Financing Plan would define the specific mechanisms required to fund capital costs of all infrastructure necessary as a result of specific plan buildout. The Financing Plan would define funding for the maintenance of new infrastructure and public services needed by the future residents and business locating within the SPA.

- **Development Agreement.** The project applicant(s) intend to enter into a Development Agreement or Agreements with the City pursuant to California Government Code Section 65864 et seq. at the time of specific plan adoption. The agreement would set forth many, if not all, of the applicant(s)' obligations to the City and other public agencies with regard to the project, including but not limited to construction, maintenance, and financial responsibilities. The agreement would also set forth the City's other project obligations, including but not limited to processing of subsequent entitlement applications, formation of financing mechanisms (including but not limited to Mello-Roos districts), and the vesting of development entitlements. Pursuant to applicable Government Code provisions, public hearings at both the City Planning Commission and City Council would be held on the proposed Development Agreement before the City Council takes any action. The specific terms and conditions of any such development agreements are subject to negotiation and approval of the parties.

- **Pre-zoning.** The City of Folsom would pre-zone the SPA prior to annexation.

U.S. Army Corps of Engineers

The Proposed Action represents a Federal action because it would require Federal permits and authorizations for one or more of the following activities: issuance of a Section 404 CWA permit for discharges into waters of the U.S.; Section 106 review of impacts to cultural and historical resources, and issuance of a biological opinion and incidental-take statement pursuant to Section 7 of the Federal Endangered Species Act (ESA) for potential take of endangered or threatened species.

Sacramento Local Agency Formation Commission

Implementation of the Proposed Project Alternative or any of the action alternatives requires approval of annexation of the SPA to the City of Folsom by the Sacramento LAFCo.

PROPOSED FOLSOM SOUTH OF 50 SPECIFIC PLAN LAND USES

As described below, the Proposed Project Alternative would include a range of housing types, employment centers, open space, and recreation opportunities, as well as support services such as roadway improvements, support infrastructure, and utilities. Land uses are described below and shown in Table 2-1 and Exhibit 2-3. Exhibit 2-4 illustrates the proposed zoning districts which would be pre-zoned in the SPA.

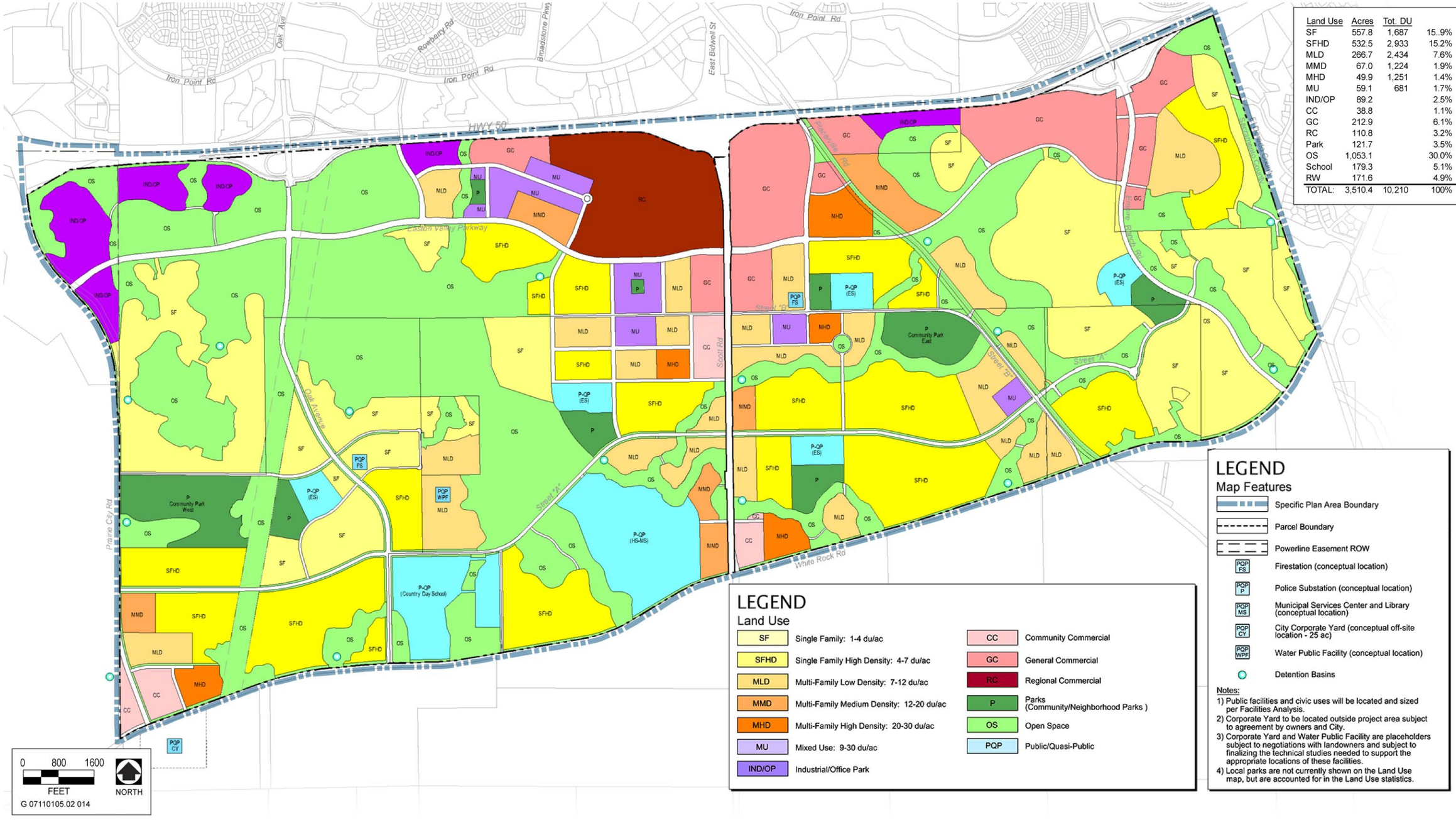
Table 2-1 Acres of Proposed Folsom South of U.S. 50 Specific Plan Project Land Uses		
Land Use	Dwelling Units/Acre	Total Acres
Single Family	1–4	557.8
Single Family High Density	4–7	532.5
Multi-Family Low Density	7–12	266.7
Multi-Family Medium Density	12–20	67.0
Multi-Family High Density	20–30	49.9
Mixed-Use District	9–30	59.1
Office Park		89.2
Community Commercial		38.8
General Commercial		212.9
Regional Commercial		110.8
Parks – Community West		44.5
Parks – Community East		26.1
Parks – Neighborhood		47.6
Parks – Local		3.5
High School-Middle School		79.6
Elementary School		51.0
Country Day School		48.7
Circulation Improvements		171.6
Open Space		1,053.1
Specific Plan Area Total		**3,510.4**
Other Areas Proposed for Annexation		73.6
"**Land" Project Total**		**3,584**
Source: Torrance Planning 2009		

Buildout of the Proposed Project Alternative would be split into four development phases, is anticipated to occur over an approximately 20-year period, and would include the elements described below.

Residential and Mixed-Use

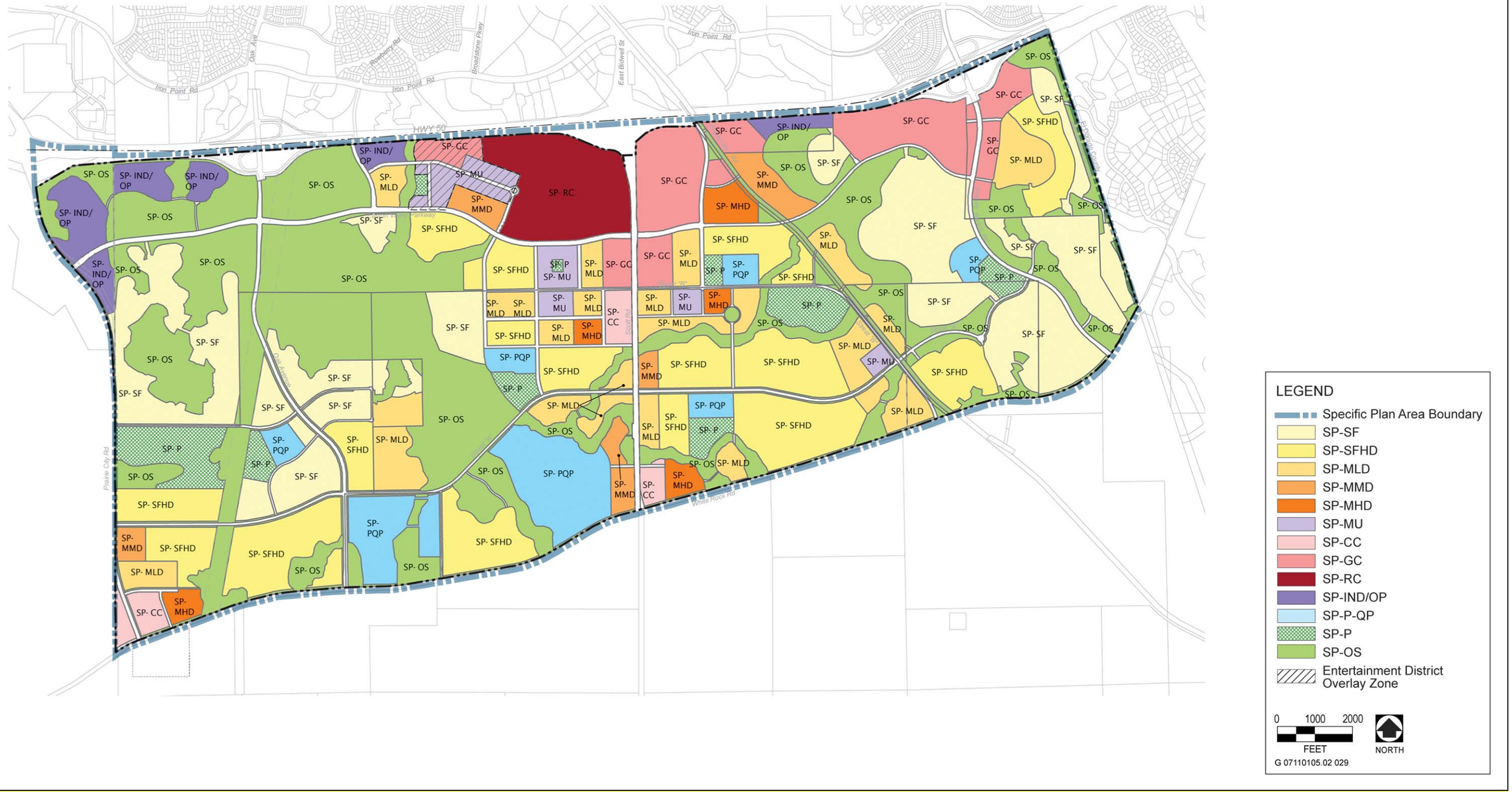
The Proposed Project Alternative provides for the construction of approximately 10,210 dwelling units in five residential land use classifications on 1,477.2 acres. The proposed densities are as follows:

- Single Family, with a permitted density range of 1–4 dwelling units per acre (du/ac) and a desired density of 3 du/ac;
- Single Family High Density, with a permitted density range of 4–7 du/ac and a desired density of 5 du/ac;
- Multi-Family Low Density, with a permitted density range of 7–12 du/ac and a desired density of 9 du/ac;



Source: MacKay & Somps 2009

Folsom South of 50 Conceptual Land Use Plan (Proposed Project Alternative) **Exhibit 2-3**



Source: Torrence Planning 2010

Proposed Zoning Districts **Exhibit 2-4**

- Multi-Family Medium Density, with a permitted density range of 12–20 du/ac and a desired density of 18 du/ac; and

- Multi-Family High Density, with a permitted density range of 20–30 du/ac and a desired density of 25 du/ac.

A total of 1,477.2 acres are proposed for residential development. In addition, 59.1 acres are proposed for a Mixed-Use District, which would include both residential and commercial uses. This district's proposed density range is 9–30 du/ac, with a desired density of 12 du/ac.

Commercial/Industrial

The Proposed Project Alternative includes 451.7 acres of land designated for commercial/industrial use, under the commercial land use classifications of Office Park, Community Commercial, General Commercial, and Regional Commercial (Table 2-1). Three office park areas are proposed along U.S. 50. Community Commercial sites, covering a total of 38.8 acres, are proposed for the intersection of Prairie City and White Rock Roads, and at two locations along Scott Road. 212.9 acres of General Commercial uses are proposed in the central and eastern portion of the SPA along U.S. 50, and on Scott Road in the northern portion of the SPA. A Regional Commercial district (shopping centers) is proposed for 110.8 acres at the southwest corner of Scott Road and U.S. 50.

Parks and Recreation

The Proposed Project Alternative includes a total of 121.7 acres of parks. With 10,210 dwelling units proposed, and a projected population of 24,335 (based on people-per-unit ratios of 2.92 for single-family residences and 1.94 for multi-family residences), this represents 5 acres of parkland per 1,000 residents. Two community parks, totaling 70.6 acres, would provide communitywide recreational facilities serving multiple neighborhoods. An additional 47.6 acres of neighborhood parks are proposed. These parks would be smaller than the community parks, ranging in size between three and ten acres, and would be linked to neighborhoods and services by trails and bicycle facilities. Each of the proposed school sites is located adjacent a proposed neighborhood park in order to provide joint use opportunities. An additional 3.5 acres of local parks would be designated within residential areas as tentative maps are approved. These local parks would serve the recreational needs of the immediately surrounding areas. In addition to the proposed park area, multi-use trails would be appropriate within some open space areas of the SPA, as discussed in "Open Space," below.

Open Space

The Proposed Project Alternative includes 1,053.1 acres of land designated as open space. Measure W, passed by Folsom voters in 2004, amended the Folsom City Charter to require that 30% of the plan area be maintained as natural open space.

Alder Creek, which flows in a northwesterly direction across the western half of the SPA, is entirely encompassed within open space in the plan area. Multi-use trails connect the plan area's proposed residential and commercial areas to services and schools, and provide an alternative to automobile use. The proposed specific plan highlights the importance of visual connections to open space areas; roadways are to be placed along the boundaries of open space areas where possible, with clear visibility at access points to trails.

Stormwater Management

Project implementation would include development of about 3,500 acres of land, most of which has not been previously developed. Drainage watercourses are needed to effectively drain the site, control flooding, and provide recreation and water quality benefits to the proposed development. Exhibit 2-5 shows the proposed pattern of stormwater drainage in the SPA at buildout. A network of conveyance pipes, inlets, manholes, and regulating structures would deliver runoff to the aforementioned system components (Exhibit 2-5).

Alder Creek and several tributaries flow across the SPA, along with several additional intermittent and ephemeral drainage watercourses on-site. The SPA lies within the Lower American and Upper Cosumnes Watersheds. Although most of the SPA has not been mapped for flood risk by the Federal Emergency Management Agency (FEMA), the SPA has been studied by the California Department of Water Resources (DWR) under its Awareness Flood Mapping Program, and the area along Alder Creek has been designated as Awareness Floodplain by DWR. The area along Alder Creek as it flows through the SPA has been designated by the Sacramento County Department of Water Resources as lying within a 100-year (0.01 Annual Exceedance Probability [AEP] floodplain.

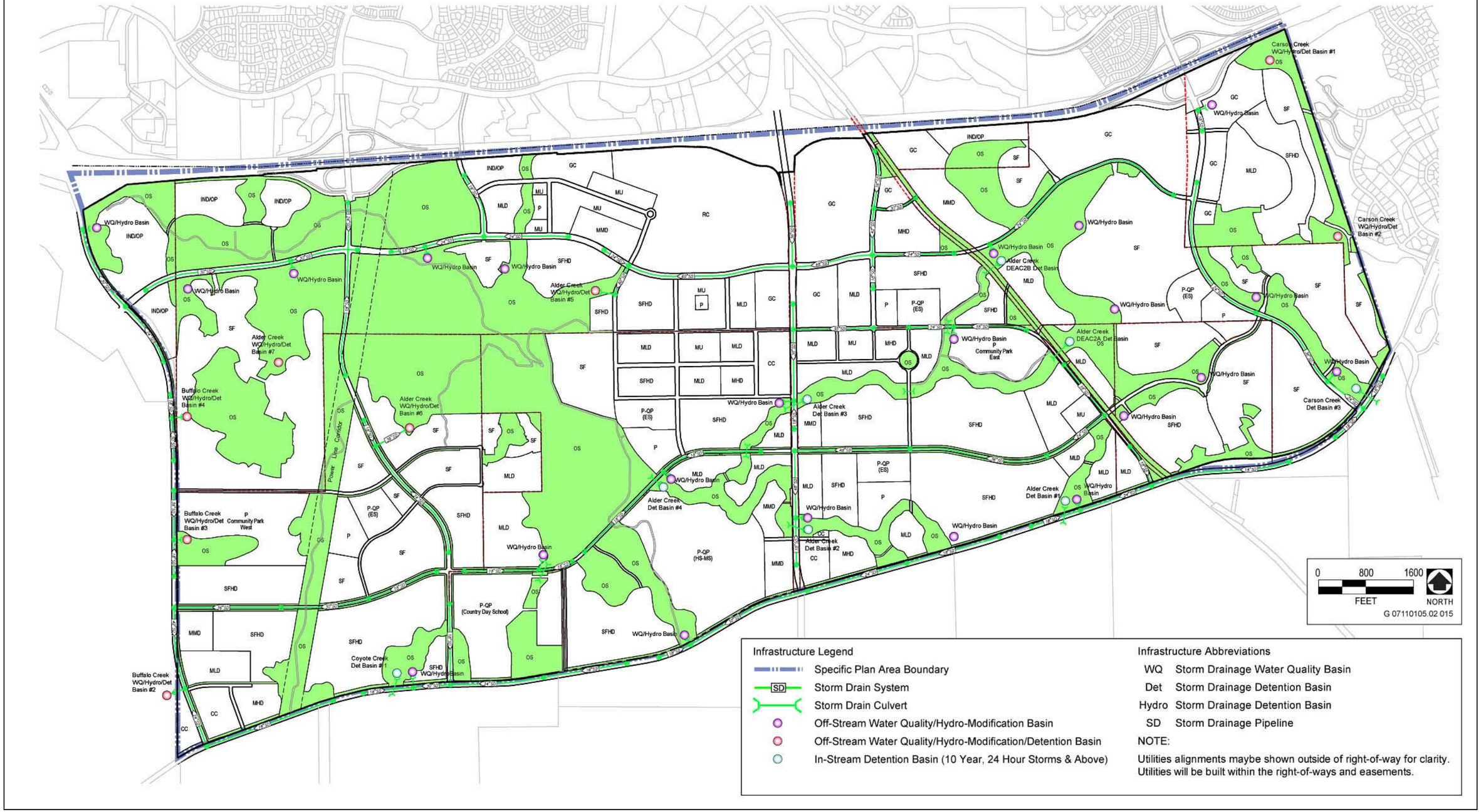
The SPA includes portions of the Alder Creek, Buffalo Creek, Coyote Creek, and Carson Creek Watersheds. Water currently flows off-site via Alder Creek, three outfalls to Buffalo Creek on the western boundary of the SPA, one outfall to Coyote Creek on the southern boundary of the SPA, and three outfalls to Carson Creek on the southern and eastern boundaries of the SPA. Water flows onto the SPA from three off-site developments north of U.S. 50, and from undeveloped properties to the south of the SPA.

Alder Creek originates outside and to the south of the SPA and flows across the SPA in a northwesterly direction. Downstream of the SPA, the Alder Creek and Buffalo Creek Watersheds flow west into areas of undeveloped vernal pool grassland and oak woodland with some scattered industrial development with roadways, utilities, and drainage conveyance systems. The Buffalo Creek and Coyote Creek Watersheds originate in the SPA in the southwest corner. The Coyote Creek Watershed flows south from the SPA into undeveloped grazing lands with vernal pools. The Carson Creek Watershed flows through the eastern portion of the SPA and flows off the site into undeveloped grazing lands to the south and residential development to the east. The Alder Creek Watershed drains into Lake Natoma and the American River. Buffalo Creek is also part of the Lower American River Watershed. Carson Creek and Coyote Creek both ultimately flow into the Cosumnes River.

The Buffalo Creek and Coyote Creek Watersheds consist primarily of gently rolling terrain with slopes ranging from 0% to 15% and ground elevations ranging from approximately 300 to 380 feet above mean sea level in the SPA. The Alder Creek Watershed consists of gently rolling and hilly terrain with slopes from 0% to 30% and ground elevations ranging from 240 feet above mean sea level in the northwest to 770 feet in the northeast. The Carson Creek Watershed consists of hilly terrain with slopes ranging from 5% to 30% and ground elevations from approximately 440 to 800 feet above mean sea level in the eastern portion of the SPA.

A preliminary grading plan has been developed that accommodates needs for on-site stormwater detention, incorporates preferred alignments for roadways, and joins with existing conditions at the project boundaries. A stormwater system consisting of surface swales, catch basins, drainage inlets, underground pipes, and detention basins has been developed for the Proposed Project Alternative. These stormwater facilities would be constructed along the natural drainage courses within the SPA to mimic natural drainage patterns. The stormwater system has been designed to collect and convey 100-year (0.01 AEP) storm events. The proposed drainage and detention facilities would detain flows exiting the site such that 10-year (0.1 AEP) and 100-year (0.01 AEP) flow events would remain at or below existing conditions flows.

The Proposed Project Alternative would employ a Low Impact Development (LID) stormwater management system that would increase infiltration potential, evaporation, and surface storage while reducing excess stormwater runoff. A LID stormwater management system treats stormwater at its source rather than at a centralized collection site or pond. LID systems reduce runoff volume and rate by maximizing infiltration capacity through the use of undisturbed areas, on-site water management facilities, and functional landscaping to capture runoff at its source. Decentralizing stormwater collection can reduce pollutants because as stormwater travels from its source, it can pick up pollutants that can reduce water quality in receiving bodies. By allowing stormwater infiltration at its source, it does not have the opportunity to pick up pollutants as it travels to a centralized and distant collection system. Pollutant reduction is also achieved by minimizing paved surfaces in the SPA. The following elements may be included as part of the Proposed Project Alternative LID system:



Source: RRM Design Group 2008

Conceptual Drainage Plan **Exhibit 2-5**

bioretention facilities, infiltration trenches, dry wells, landscape/buffer strips, and swales (grassed, bio retention, and/or wet). Specific features to be included would be determined between the project applicant(s) and the City.

The majority of the Alder Creek streambed through the SPA would be preserved in the open space land use designation as part of the site development plan, as would many of the other drainage channels and swales. Grading would be required in some of the open-space tract to contain seasonal flows to an active channel and more reliably define the extent of the 100-year (0.01 AEP) floodplain in this area. Construction of several roadway crossings are proposed over Alder Creek, however, and detention basins would be constructed in on-site drainage watercourses. During smaller events, runoff would be conveyed within the creek banks while larger flows would utilize up to the design depth of the detention basins. Sixteen detention and water quality basins are proposed throughout the SPA. These basins are sized to hold both the required detention volume, and an additional water quality volume. Exhibit 2-5 illustrates the locations of detention basins. As shown on Exhibit 2-5, one detention basin is proposed to be located off-site, immediately west of Prairie City Road.

The City's Public Works Department provides stormwater services in Folsom. The SPA is not currently served with stormwater infrastructure. The Proposed Project Alternative would include stormwater infrastructure designed to collect and convey 100-year (0.01 AEP) storm events. The proposed infrastructure includes surface swales, catch basins, drainage inlets, underground pipes, and detention basins. Stormwater runoff would be collected in the proposed system, and discharged into Alder Creek, Buffalo Creek, Carson Creek, and Coyote Creek. Exhibit 2-5 illustrates the conceptual stormwater system for the SPA.

Waters of the U.S., Including Wetland Impacts and Avoidance

A total of 84.94 acres of waters of the U.S. are located within the SPA. Additionally, 1.30 acres of waters were identified on the site that USACE determined to be nonnavigable, isolated, and intrastate waters with no apparent interstate commerce connection. Table 2-2 presents acreage of waters of the U.S., with detail shown for vernal pools, seasonal wetland swales, seasonal wetlands, freshwater marsh, freshwater seeps, ponds, stream channels, intermittent drainage channels, and ditches.

Table 2-2
Waters of the U.S., Including Wetlands in the SPA

Wetland Type	Existing Acres	Acres Filled By Proposed Project Implementation (Direct Impact)	Acres Avoided by Proposed Project Implementation	Acres Fragmented by Proposed Project Implementation (Indirect Impact)
Vernal pool	4.64	2.92	1.72	0.00
Seasonal wetland	4.66	3.87	0.78	0.00
Seasonal swale	25.48	17.63	7.85	0.00
Seep	10.80	4.48	6.33	0.17
Marsh	0.21	0.07	0.14	0.016
Ponds	6.87	1.17	5.71	0.088
Stream channel	17.19	3.38	13.81	0.012
Drainage channel	11.72	4.47	7.25	0.00
Ditch	1.96	1.40	0.55	0.00
Willow Scrub	0.11	0.11	0.00	0.00
Total Waters of the U.S.	**83.64**	**39.50**	**44.14**	0.29
Isolated Waters	1.30	1.25	0.05	0.00
Grand Total	**84.94**	**40.75**	**44.19**	**0.29**

Source: ECORP Consulting, Inc. 2009 and 2010

The Proposed Project Alternative includes 1,050 acres of open space that would contain preserve areas intended to preserve and protect aquatic features, sensitive habitat areas, and cultural resources. Development impacts on wetland habitats and other waters of the U.S. within the preserve areas would be avoided. The boundaries of the preserve areas would be determined during the wetland permitting process. The open space would be distributed throughout the SPA, but concentrated primarily in the western portion of the site where oak woodlands and Alder Creek are present. Most of the stream channels and intermittent drainage channels are included in proposed open space corridors. As shown in Table 2-2, a total of 44.19 acres of waters of the U.S. and wetlands would be preserved in the SPA, including most of Alder Creek.

In addition to the waters of the U.S. that would be avoided, preserved, and protected (described above) in the open space areas, additional acreage of wetland habitat would be created within the open space areas as compensatory mitigation for impacts elsewhere in the SPA.

The open space designation includes oak woodlands, riparian corridors, landscape parkways 30 feet in width or greater, slope areas, and wetland and stream and drainage channel habitats. Buffers of at least 75 feet are included in the open space design to protect preserved habitats from adjacent development. No grading, trails, or improvements would be allowed within the first 25 feet of buffer, but temporary disturbance associated with contour grading, mitigation planting, trails, benches, and other passive recreational amenities may occur in the outer 50 feet of buffer. Allowed uses within designated open space are designed to be consistent with the preservation and enhancement of natural open space and habitat features. These uses include passive outdoor recreation, such as hiking, walking, horseback riding, and bicycling on designated walkways and trails. Trailheads, restroom facilities, educational and interpretive signage, and similar facilities to enhance public enjoyment of the open space would also be allowed, as well as maintenance of stormwater systems and other utilities.

Wetland Preserve Mitigation and Monitoring Plan

A draft mitigation and monitoring plan (MMP) for the wetland preserve and additional mitigation areas has been developed by ECORP Consulting, Inc. (ECORP) on behalf of the project applicant(s) and is attached as Appendix N. An operations and management plan (O&M plan) is also being prepared for the project by ECORP on behalf of the project applicant(s). Both the MMP and the O&M plan would need to be reviewed and approved by USACE before implementation or work in waters of the U.S. The MMP outlines the monitoring methods and success criteria of compensatory wetland and riparian habitat while the O&M plan lists the responsibilities of the Preserve Steward, as well as the tasks required to ensure the long-term viability of the functions and values of the preserve.

Schools

The Proposed Project Alternative also includes approximately 130.6 acres designated for schools, including five elementary school sites, and one middle and high school site. Each elementary school site consists of 10.0 acres, with 79.0 acres for the middle and high school site. In addition to the public school sites, an approximately 50-acre parcel is planned for either a private or public school.

All of the public school sites would be part of the Folsom Cordova Unified School District (FCUSD). The proposed schools, along with adjacent community parks, would be jointly used by FCUSD and the Folsom Parks and Recreation Department. Funding would be provided through state bonds and local bonds and developer fees.

Buildout of the Folsom South of 50 Specific Plan development would generate approximately 4,999 pupils in grades K–12. Of this total, 2,807 pupils would be in grades K–5; 1,017 would be in grades 6–8; and 1,073 would be in grades 9–12 and continuation high school. An additional 102 pupils in grades K–12 would be enrolled in special education programs. FCUSD based these projections on the proposed land use designations and yield rates generated from similar types of development.

The timeline for construction of the proposed schools would coincide with the project applicant(s)' buildout schedule, which is dependent upon market trends for new homes.

Public Utilities and Services

Public services, utilities, and other infrastructure improvements would be needed to support the Proposed Project Alternative as outlined in the proposed specific plan. The project applicant(s) have initiated coordination with the various service providers regarding provision of these services on an as-needed basis. Table 2-3 provides details on the necessary off-site improvements.

Table 2-3
Folsom South of U.S. 50 Specific Plan Off-site Infrastructure Improvements

Improvement	Approved/Existing CEQA Coverage?
Off-site water conveyance	No
Sewer force main connection underground from SPA to interceptor on Iron Point Road North of U.S. 50	No
EID Sewer connections to existing facilities in El Dorado Hills	No
Detention basin (west of Prairie City Road)	No
Prairie City Road improvements	No
White Rock Road improvements	No
Prairie City Road/U.S. 50 Interchange improvements (North of U.S. 50)	Yes
Oak Avenue/U.S. 50 Interchange	No
Rowberry Drive Overcrossing	No
Scott Road/U.S. 50 Interchange improvements (North of U.S. 50)	Yes
Empire Ranch Road/U.S. 50 Interchange improvements (North of U.S. 50)	Yes
Roadway connections from Folsom Heights property into El Dorado Hills	No
Sewer force main connections within roadway connections from Folsom Heights property into El Dorado Hills	No

Sources: MacKay & Somps 2008; data compiled by AECOM in 2009

A municipal services facility is proposed for the SPA. This facility would provide a range of services to residents of the SPA and of the City of Folsom as a whole, including "city hall" type facilities such as meeting rooms and offices, and could also provide space for a branch library facility. Two fire stations are also proposed in the SPA.

Fire and Police Protection

Fire protection services would be provided by the City of Folsom's Fire Department. The majority of the SPA is currently in the jurisdiction of the Sacramento Metro Fire District, but the City would seek detachment from the District in conjunction with its annexation proposal. An approximately 178-acre area in the northeastern portion of the SPA is currently served by the El Dorado Hills Fire Department. The City of Folsom and the El Dorado Hills Fire Department are negotiating whether this area will be transferred to the jurisdiction of the Folsom Fire Department. Two fire stations are included as part of the Proposed Project Alternative. The final size and location of these fire stations will be determined following response time analysis studies, but the conceptual locations for these facilities are near the intersection of Oak Avenue and Street "A," and east of the intersection of Scott Road and Street "B." A fire training facility may be paired with one of the two fire stations; the size and location of these facilities would be determined during the development phase of the project. (See Exhibit 2-3.)

Police protection would be handled by the City's Police Department. The facilities needs for law enforcement and protection would be determined by that department. An on-site police station is conceptually located north of Street "B" and east of Scott Road, with a conceptual police service center in the regional mall. (See Exhibit 2-3.)

On-site Water

The City of Folsom Utilities Department, Water Division would provide water service to the majority of the SPA. In the EID service area (illustrated in Exhibit 2-6), EID would provide water service. No water infrastructure is currently present in the SPA; a conceptual diagram of water distribution infrastructure is presented on Exhibit 2-7. Under the terms of Measure W, adopted by Folsom voters in 2004 and incorporated into the City's Charter as Section 7.08, a new water source for the project area must be identified and provided at no cost to existing Folsom residents, so that the existing water supply currently serving users to the north of U.S. 50 is not reduced. Sections 2.12 through 2.15 below provide a detailed description of the "Water" portion of the project, including information on the source of the water, and off-site conveyance improvements.

The Proposed Project Alternative includes installation of a non-potable water distribution system ("purple pipe" system). This system would be used to route non-potable water to parks and landscaped areas, reducing the use of drinking water for irrigation in the SPA. There currently is no recycled water supply to use within the SPA, but installation of the distribution system would expedite implementation of such a supply when it is available.

The project would conform to the 2007 requirements of Best Management Practices (BMPs) from the California Urban Water Conservation Memorandum of Understanding (or later edition if applicable). These BMPs could include: performing site-specific landscape and interior water surveys; conducting public information campaigns and school education programs; adopting a water waste ordinance; and identifying opportunities for installation of dedicated irrigation meters, monitoring progress through billing, and providing site-specific assistance for accounts 20% over budget. The California Urban Water Conservation BMPs would have a long-term affect on the City's ability to manage water use throughout the SPA. To the extent that the City requires installation of dedicated irrigation meters in the SPA, a monitoring and survey program would provide an opportunity to ensure that landscape water demands are achieving desired water conservation targets. The City's water conservation coordinator would be assigned to manage water conservation programs and City staff will be authorized to enforce the water waste ordinance. Through targeted outreach, the City can encourage continued customer use of highly efficient appliances and irrigation systems, emphasize the need to retain efficient landscape plantings, and minimize otherwise wasteful uses.

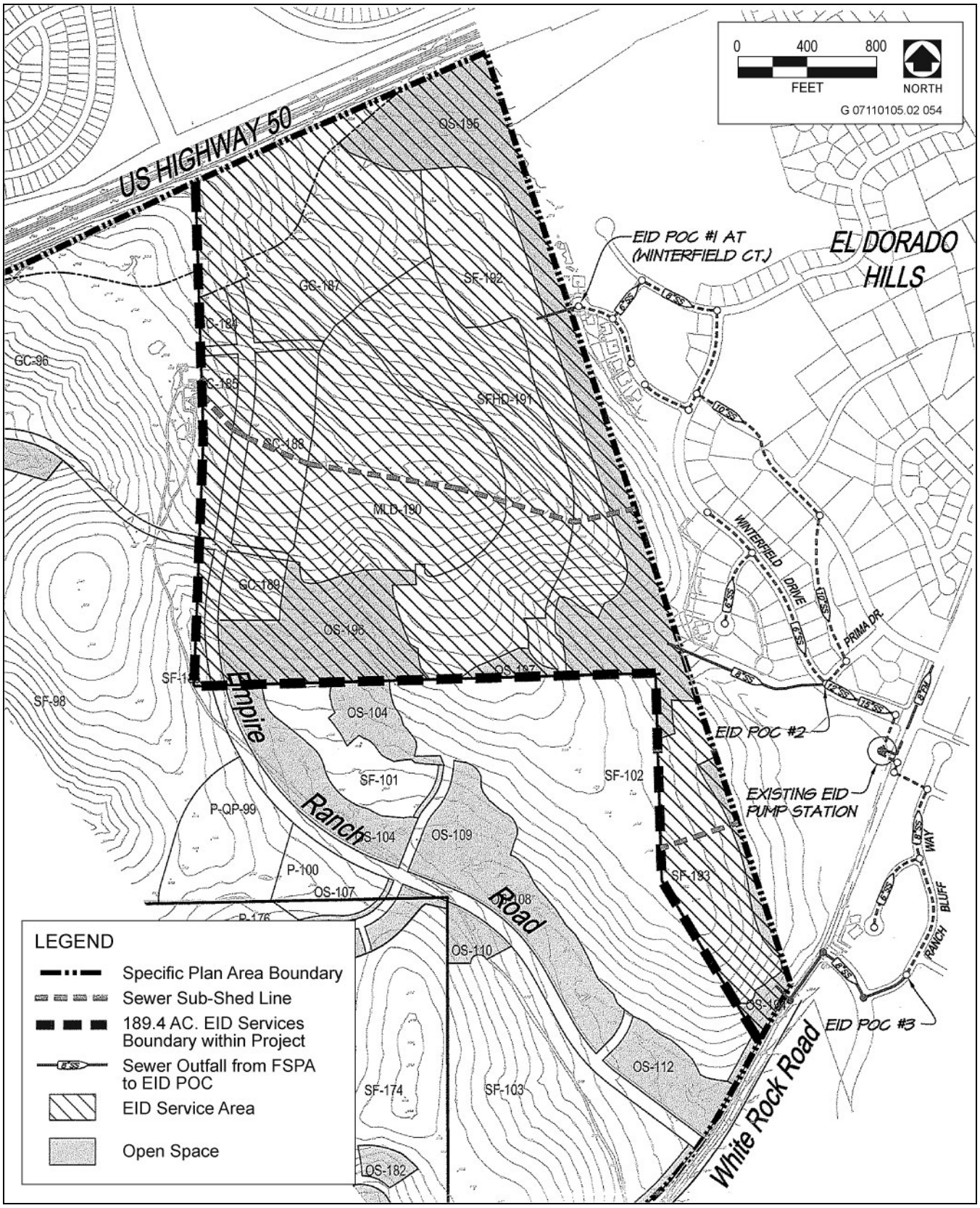
Sewer

Sanitary sewer service for the SPA would be provided by the City of Folsom Wastewater Division.
The Wastewater Division discharges its wastewater into County systems; Sacramento Regional County Sanitation District (SRCSD) and County Sanitation District No. 1 (CSD-1) for conveyance and treatment at SRCSD regional facility. An approximately 189-acre portion of the SPA east of Empire Ranch Road is in the El Dorado Irrigation District (EID) service area. Sanitary sewer service in this area would be provided by EID, through connection with the existing EID system in El Dorado Hills, with wastewater being conveyed to the El Dorado Hills WWTP. Exhibit 2-6 illustrates the location of the EID service area.

No sanitary sewer facilities are currently present in the SPA. Exhibit 2-8 presents a conceptual diagram of on-site sewer facilities. Sewer facilities would include both gravity-fed mains and force-mains, as well as several pump stations. Connection to the City's existing wastewater system would proceed off-site along Oak Avenue, joining the existing system on Iron Point Road west of Oak Avenue.

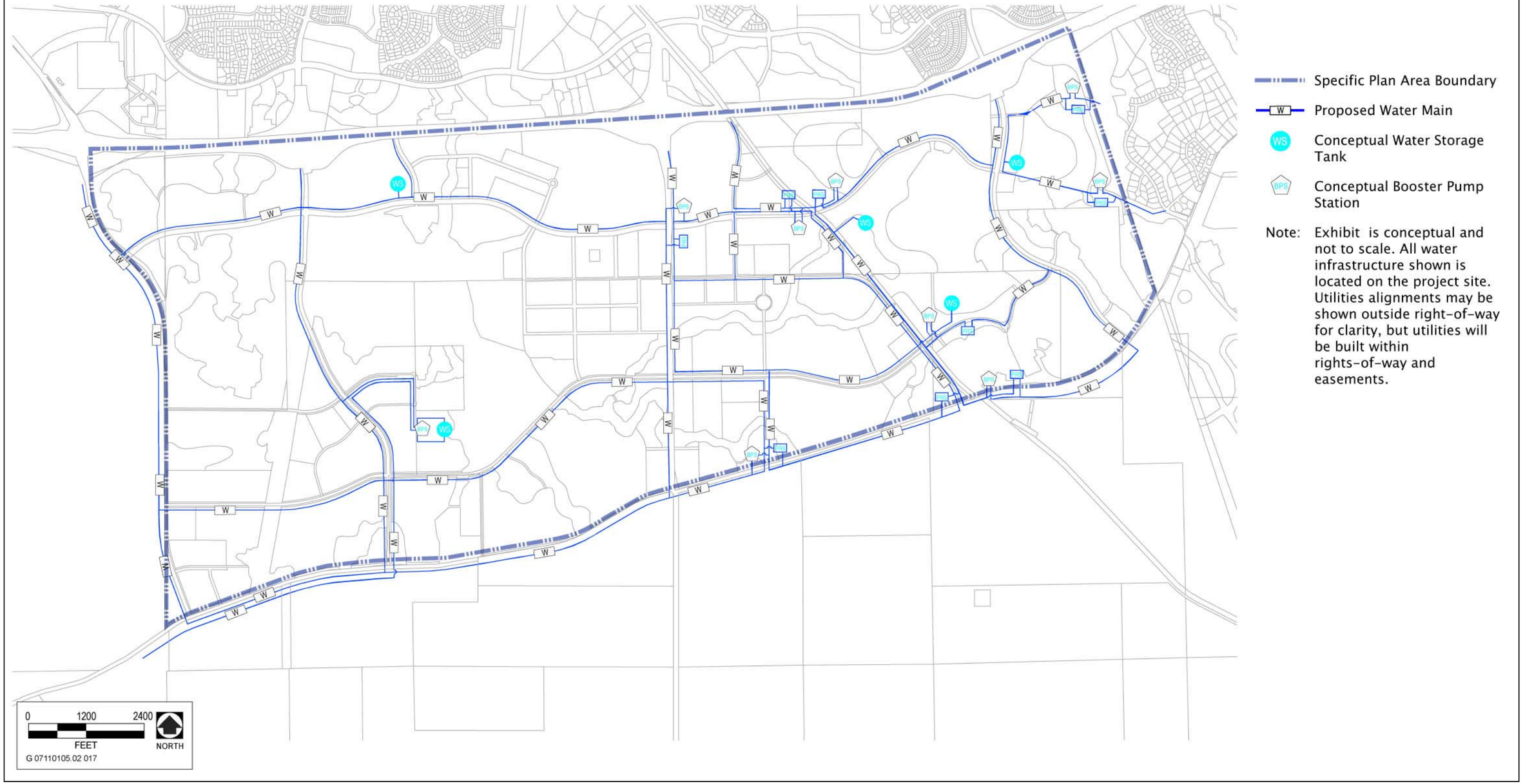
Electricity

Electrical service would be provided by Sacramento Municipal Utility District (SMUD). All electrical lines under 69 kilovolts (kV) would be routed underground within the rights-of-way of streets in the SPA. SMUD has



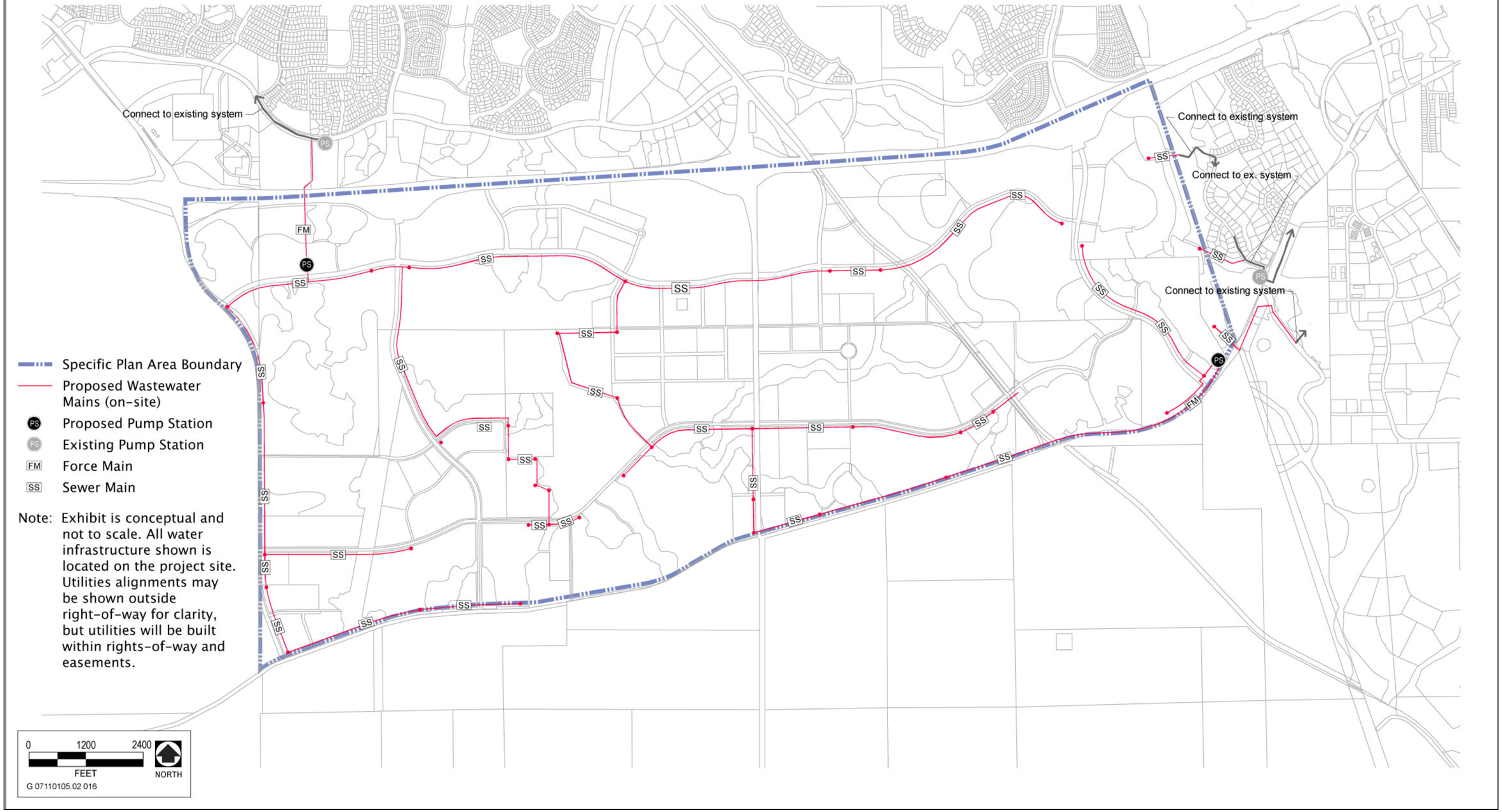
Source: MacKay & Somps 2008

El Dorado Irrigation District Service Area and Conceptual Off-site Sewer Facilities **Exhibit 2-6**



Source: RRM Design Group 2008, MacKay & Somps 2009

Conceptual On-site Water Conveyance **Exhibit 2-7**



Source: RRM Design Group 2008, MacKay & Somps 2009

Conceptual Wastewater Diagram **Exhibit 2-8**

indicated that backbone electrical improvements necessary to support the project would include construction of three electric substations. The exact locations for these substations have not been defined; however, the approximate locations would be near the intersection of Easton Valley Parkway and Rowberry Drive, near the intersection of White Rock and Scott Roads, and along Placerville Road north of Easton Valley Parkway. These substations would be served by extensions of existing 69-kV overhead lines.

The project applicant(s) are currently working with SMUD to develop detailed design plans for electrical service to the SPA.

Natural Gas

Natural gas service would be provided by Pacific Gas & Electric Company (PG&E), and would be routed underground within the rights-of-way of streets in the SPA. The project applicant(s) is currently working with PG&E to develop detailed design plans for natural-gas service to the SPA, but one or more transmission pipelines and two natural gas regulator stations would be constructed in the SPA to serve buildout of the project.

Telephone

AT&T has existing underground and overhead telephone service in the vicinity of the SPA. AT&T would extend lines and construct facilities to serve the SPA concurrently with development phases.

Solid Waste Disposal

The City's Solid Waste Division would provide pickup and disposal of solid waste in the SPA.

Circulation Improvements

As shown in Exhibit 2-9, the Proposed Project Alternative includes the development of an estimated 171.6 acres of major roadways and associated landscaping within the SPA. Access and circulation within the SPA would be provided through the construction of the following primary roadways:

White Rock Road is a regional connector which forms the southern boundary of the SPA, and provides an alternative travel route parallel to U.S. 50. White Rock Road would be a 5-lane roadway with a 28-foot wide median to accommodate a future sixth traffic lane, if needed. A 50-foot-wide landscape parkway (including a 12-foot Class I bicycle trail) would buffer development in the SPA from White Rock Road.

- Easton Valley Parkway would be a regional roadway and transit corridor parallel to U.S. 50. The street section for Easton Valley Parkway would vary from two- to six-lanes, with a median of 16 to 38 feet. Four lanes (with Class II bicycle lanes on both sides of the road, a 6-foot wide meandering sidewalk on the south side of the street, and a Class I bike path on the north side of the street. No sidewalk will be provided on the north side of Easton Valley Parkway from Rowberry Road to Prairie City Road) are proposed from Prairie City Road to the western end of the proposed Regional Commercial center. Six lanes are proposed from the Regional Commercial center to Placerville Road (with eight-foot sidewalks on each side of the road), and two lanes east of Placerville Road (with 5-foot wide Class II bicycle lanes on both sides of the road, a separate 12-foot-wide class I bike path on the south side of the road, and a six-foot sidewalk on the north side). A Class II bicycle lane would run the length of Easton Valley Parkway in the SPA. Right of way for two lanes is reserved for dedicated transit service at the level of bus rapid transit, and eventually for light rail when demand justifies the service.

- Prairie City Road is a local arterial connecting U.S. 50 and White Rock Road along the western boundary of the SPA. Prairie City Road would be a 4 to 6 lane major arterial with 16-foot-wide center median. Class II bicycle lanes would be provided in each direction, with six-foot-wide sidewalks along both sides of the

roadway. Six lanes are proposed from U.S. 50 to Easton Valley Parkway, with a four-lane roadway continuing from Easton Valley Parkway to White Rock Road. Empire Ranch Road would be extended from U.S. 50 to White Rock Road on the eastern portion of the SPA. Six lanes are proposed from U.S. 50 to Easton Valley Parkway, with four lanes proposed from Easton Valley Parkway to White Rock Road. The Empire Ranch Road corridor would include Class II bicycle lanes in each direction, and six-foot sidewalks on both sides of the road.

- Oak Avenue would extend from U.S. 50 to White Rock Road, providing an alternative to existing north-south routes. Four lanes are proposed for Oak Avenue, with a 16-foot-wide center median. Class II bicycle lanes are proposed in each direction, with six-foot-wide sidewalks proposed on both sides of the road.

- Scott Road would be extended from U.S. 50 south to White Rock Road. Six lanes are proposed between U.S. 50 and Street B, with four lanes proposed between Street B and White Rock Road. Class II bicycle lanes and six-foot-wide sidewalks are proposed in each direction.

- Street B would connect Placerville Road to White Rock Road with two travel lanes, Class II bicycle lanes in each direction, and 15-foot-wide sidewalks on each side of the road. The corridor would contain a 38-foot-wide center median for limited left-turn movements and future transit use east of Scott Road.

- Placerville Road would extend from a U.S. 50 undercrossing to White Rock Road. The roadway would range from two to four lanes, with Class II bicycle lanes in each direction. A 38-foot-wide median is proposed from Easton Valley Parkway to Street B to accommodate future transit use. Sidewalk widths would be 15-feet south of Easton Valley Parkway, with six-foot sidewalk and 12-foot wide Class I bike paths constructed on other portions of the route.

- Rowberry Drive would extend from a U.S. 50 overpass to Easton Valley Parkway, with four travel lanes, Class II bicycle lanes in both directions, and six-foot-wide sidewalks on both sides of the road.

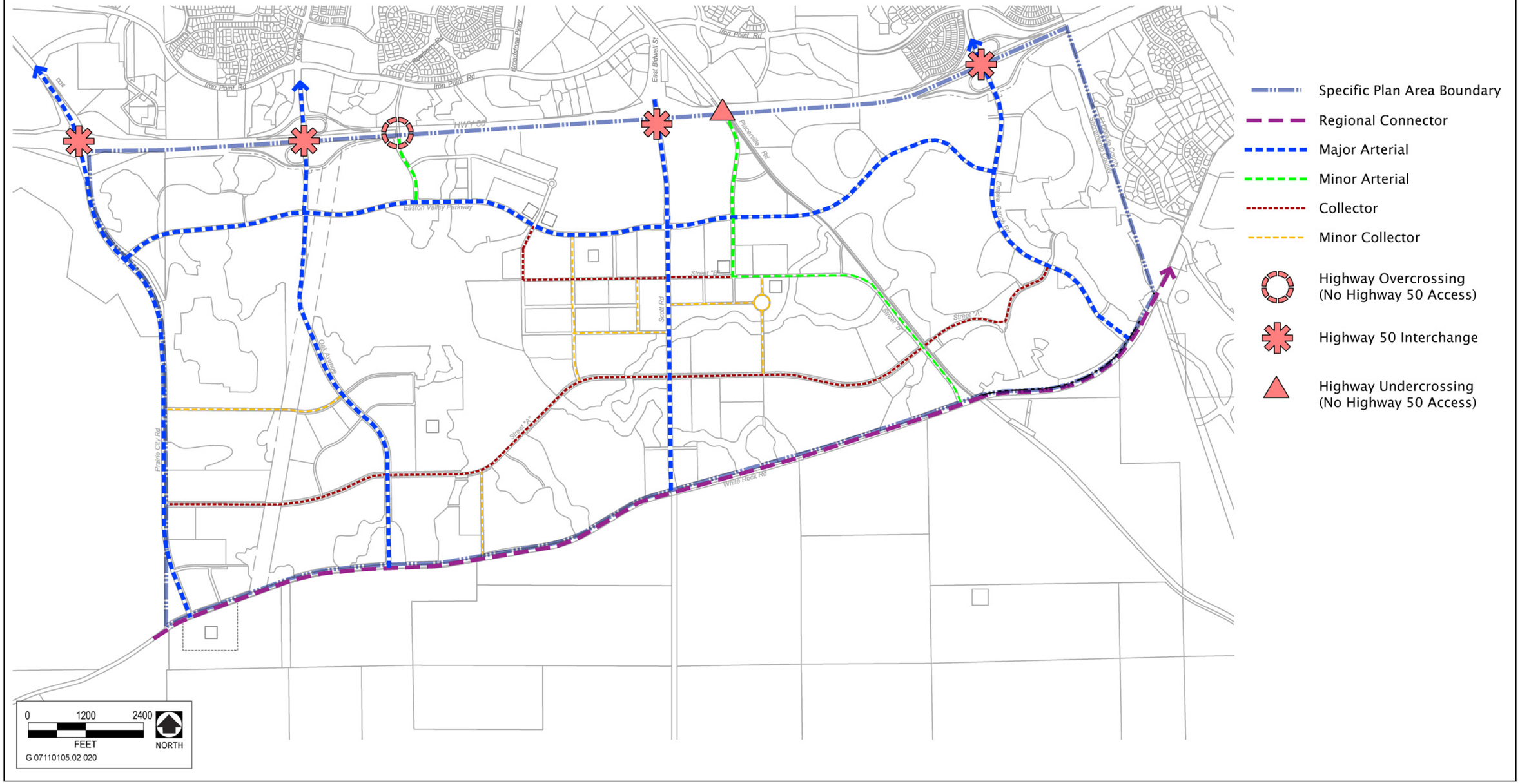
- Street A would connect Prairie City Road on the west with Empire Ranch Road on the east. Two travel lanes, with Class II bicycle lanes in both directions, six-foot-wide sidewalks on both sides of the road are proposed for Street A.

In addition to the principal roadways, a number of different types of local roadways are proposed. In the Town Center area, roads would be two-lanes with either parallel or angle parking on both sides and 10-foot-wide sidewalks. Alleys in the Town Center would be 20 feet wide, with no parking permitted.

In residential areas, entry roads would include two travel lanes, Class II bicycle lanes in both directions, and 5-foot-wide sidewalks. Internal roadways would have two travel lanes, with 5-foot-wide parking lanes on both sides, and five foot sidewalks on both sides. In hillside neighborhoods, local streets would have two travel lanes, with no parking or sidewalks. One-way roads with one travel lane and a parking lane and sidewalk on one side may be permitted in hillside neighborhoods.

In addition to on-site transportation improvements, the project applicant(s) would be required to pay their fair share of various regional and local roadway improvements, which are discussed in Chapter 3A.15, “Traffic and Transportation – Land.”

As shown in Exhibit 2-10, the Proposed Project Alternative would include the development of bicycle and pedestrian trails within the SPA. In addition to sidewalks and recreational trails in the open space areas, Class I paved off-street bike paths would be provided along White Rock Road, and 5-foot-wide Class II bicycle lanes would be provided on major roadways as described above. 12-foot-wide multi-use trails would be provided along portions of several roadways, including Easton Valley Parkway, Prairie City Road, Oak Avenue, and Street A.



Source: RRM Design Group 2008

Conceptual Circulation Diagram **Exhibit 2-9**

The Proposed Project Alternative would also include a proposed "transit corridor," which would connect with proposed Bus Rapid Transit (BRT) service to the west of the SPA along Easton Valley Parkway. As shown on Exhibit 2-10, the proposed transit corridor would extend from the western project boundary along Easton Valley Parkway, turning south on Placerville Road, and then turning east and south onto Street B, terminating at White Rock Road. Proposed roadways along this transit corridor would include 38-foot-wide medians to permit later addition of dedicated bus lanes.

OFF-SITE "LAND" IMPROVEMENTS

Several off-site land development improvements (in addition to the off-site water facilities discussed in Sections 2.10 through 2.12 of this chapter) would be necessary to serve development in the SPA under the Proposed Project. These improvements would include:

- a sewer pipeline connection extending from the SPA to an existing SRCSD pump station on Iron Point Road;
- improvements to the existing interchange at U.S. 50 and Prairie City Road (improvements for traffic from the south only);
- a new interchange at U.S. 50 and Oak Avenue (Proposed Project includes improvements for traffic from the south only);
- a new overcrossing of U.S. 50 at Rowberry Drive;
- improvements to the existing interchange at U.S. 50 and Scott Road/East Bidwell Street (improvements for traffic from the south only);
- a new interchange at U.S. 50 and Empire Ranch Road (improvements for traffic from the south only); and
- Construction of a detention basin on the west side of Prairie City Road.

Exhibit 2-11 illustrates the locations of proposed off-site land development improvements associated with development of the SPA. Analysis of these improvements is addressed under "On-site and Off-site Elements" in the impact discussions contained within the 3A "Land" sections of Chapter 3, "Affected Environment, Environmental Consequences, and Mitigation Measures" of this EIR/EIS.

PROJECT PHASING

As discussed above in Section 1.2, both LAFCo Resolution 1196 and the City's Measure W require the SPA project applicants to develop phasing plans for certain improvements. In conjunction with their development of those plans, the SPA project applicants have developed an estimate of a schedule on which units within the SPA would be developed. This estimated schedule has five increments of units is discussed in the Public Facilities Financing Plan and the enclosed water supply assessment. While that schedule is currently the project applicants' best estimate of the pace of development within the SPA, that schedule is subject to change depending on market conditions and individual applicants' preferences for how to develop their respective properties.

This estimated schedule of development, however, does not indicate where specific units will be developed geographically at specific times. As Exhibit 2-12 illustrates, the SPA project applicants have developed a generalized geographic depiction of four phases of construction (north, east, south and west). At the time of writing of this EIR/EIS, however, information on the order in which development of these geographic phases of SPA would occur was not available. It therefore would be speculative for this EIR/EIS to analyze development of any particular phase of the SPA as occurring before or separate from any other particular phase.

2.3.2 No Project Alternative

Under this alternative, the project as a whole would not be developed or implemented—meaning that none of the development proposed for the SPA would be constructed, and no off-site water facilities would be constructed. However, the No Project Alternative assumes that existing land uses in the SPA would continue, including 80-acre agricultural development as permitted under the adopted Sacramento County General Plan designations and zoning, which would permit the construction of up to 44 individual rural residences on 80-acre parcels zoned for agricultural use. This analysis uses existing site conditions at the time that the NOP was published (September 2008) as the "existing conditions" portion of the "no project" scenario (see State CEQA

Guidelines Section 15126.6[e][2]) to allow consideration of a full range of alternatives. Remediation of contaminated soil and groundwater on the Aerojet General Corporation parcel along the western property boundary is a separate action that will continue either with or without project implementation.

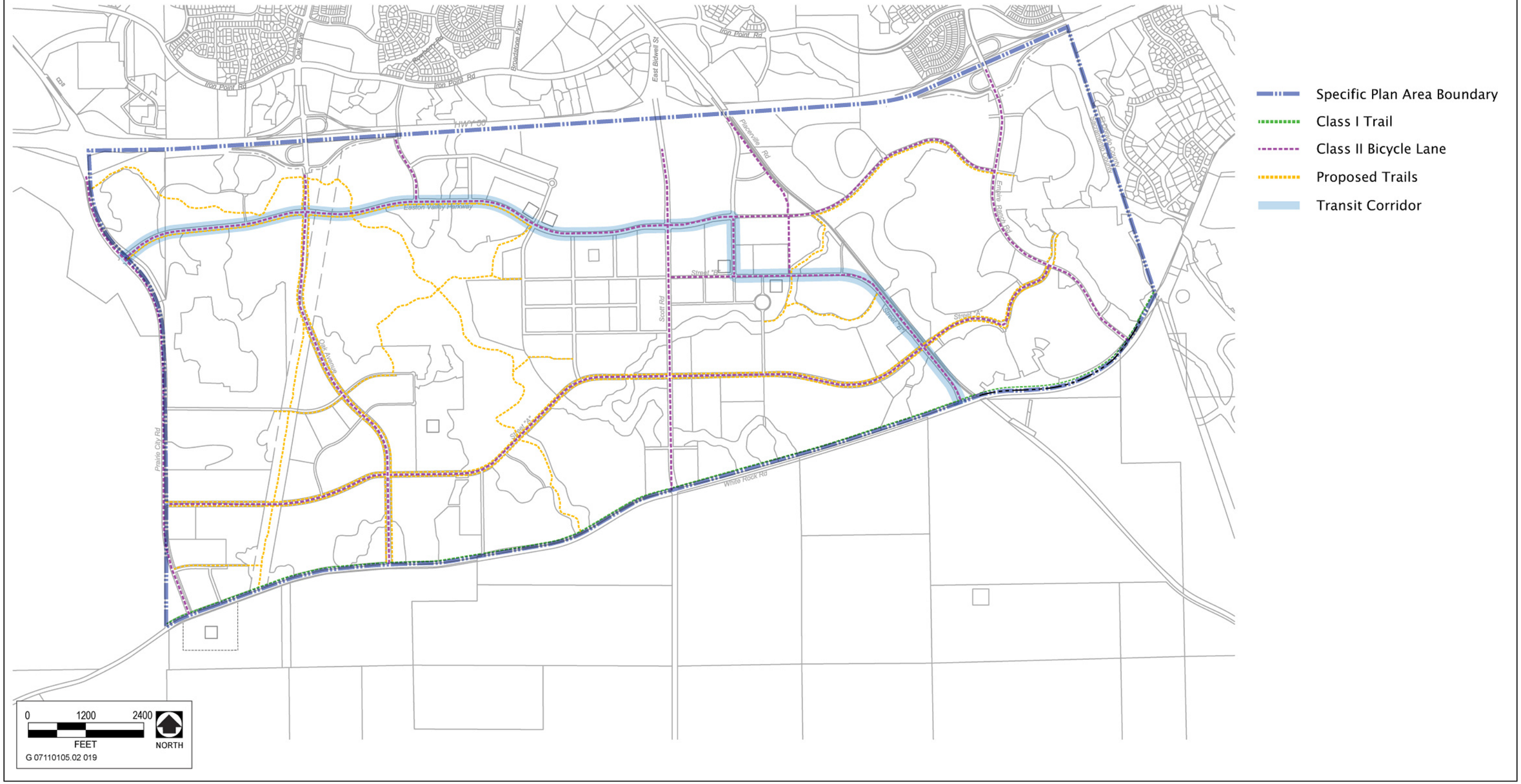
Under the No Project Alternative, the SPA would not be annexed into the City of Folsom. Instead, it would remain within and under the jurisdiction of, Sacramento County. Although Chapter 3.0, "Affected Environment, Environmental Consequences, and Mitigation Measures," discusses the impacts related to the No Project Alternative, it is not appropriate in this EIR/EIS to propose mitigation measures for the No Project Alternative, because the City of Folsom has no authority or jurisdiction over any actions which would occur in the SPA under this alternative. In addition, this alternative would result in no impacts to wetlands or other waters of the U.S. (as compared to a total of 39.5 acres filled for the "Land" portion of the project and 6.8 acres filled for the "Water" portion of the project for a grand total of 46.3 acres filled by the project as a whole). Because no impacts would occur, the USACE would have no authority over any actions that would occur in the SPA under this alternative.

Although the Sacramento County General Plan contains goals and policies intended to protect many sensitive resources, such as cultural and biological resources, most of those goals and policies do not apply to land that is zoned and designated for agricultural use, because continued agricultural activities and agricultural land is a valuable resource in and of itself that is encouraged and protected by Sacramento County. The goal of Sacramento County's Agricultural Element as stated in its General Plan is to "maintain the County's agricultural lands, and (their) agricultural productivity…" and "disruption of one resource value for another is an historic pattern of land development in the County," which the County is now trying to avoid. As further discussed in the Sacramento County General Plan, the County recognizes that while all resources are valuable, it is not always possible to achieve a balance between protecting agricultural land owners' right to farm, and protecting other sensitive resources. The analysis of the No Project/No Action Alternative in this EIR/EIS assumes that "normal agricultural activities" would continue in the SPA; based on the soil types in the SPA, those activities would consist of dryland farming (i.e., livestock grazing), which is consistent with the historic use of the SPA over the last 100 years.

Consistent with CEQA requirements, this No Project Alternative is evaluated in this EIR/EIS. The No Project Alternative would not meet the CEQA project purpose, need, or objectives of the proposed Folsom South of Highway 50 Specific Plan project as described in Chapter 1, "Introduction and Statement of Purpose and Need."

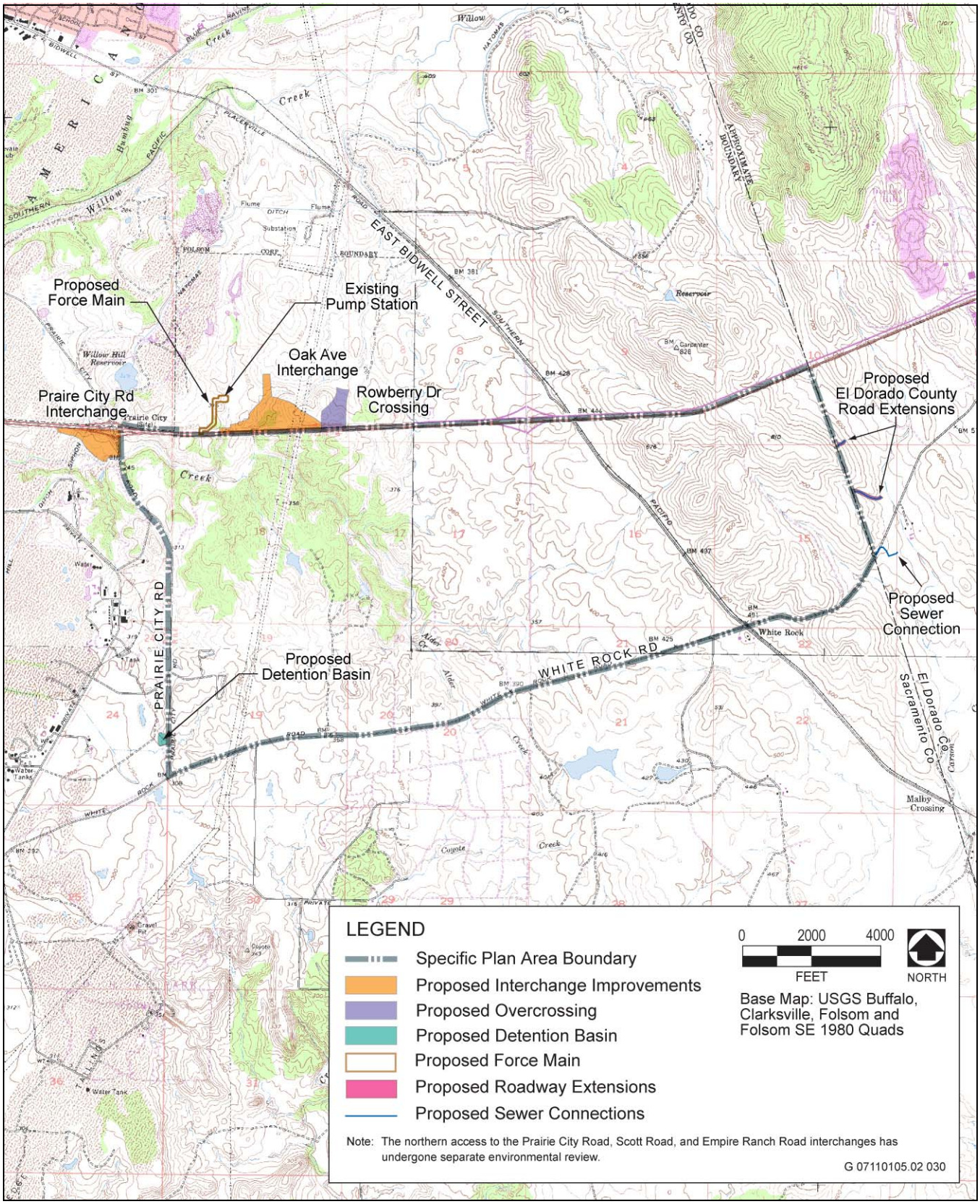
2.3.3 No USACE Permit Alternative

This alternative was designed to avoid the placement of dredged or fill material into waters of the U.S. (including wetlands) from both the "Land" and "Water" portions of the project, thus eliminating the need for a USACE Section 404 CWA permit. As a result, there would be no fill of waters of the U.S. under this alternative, compared to 46.3 combined acres of fill under the total Proposed Project (i.e., including both land development and off-site water facilities). This alternative, however, would likely still require that the applicants consult with the USFWS and the National Marine Fisheries Service (NMFS) to ensure compliance with Section 9 of the ESA. A conceptual land use map showing development areas and jurisdictional wetlands



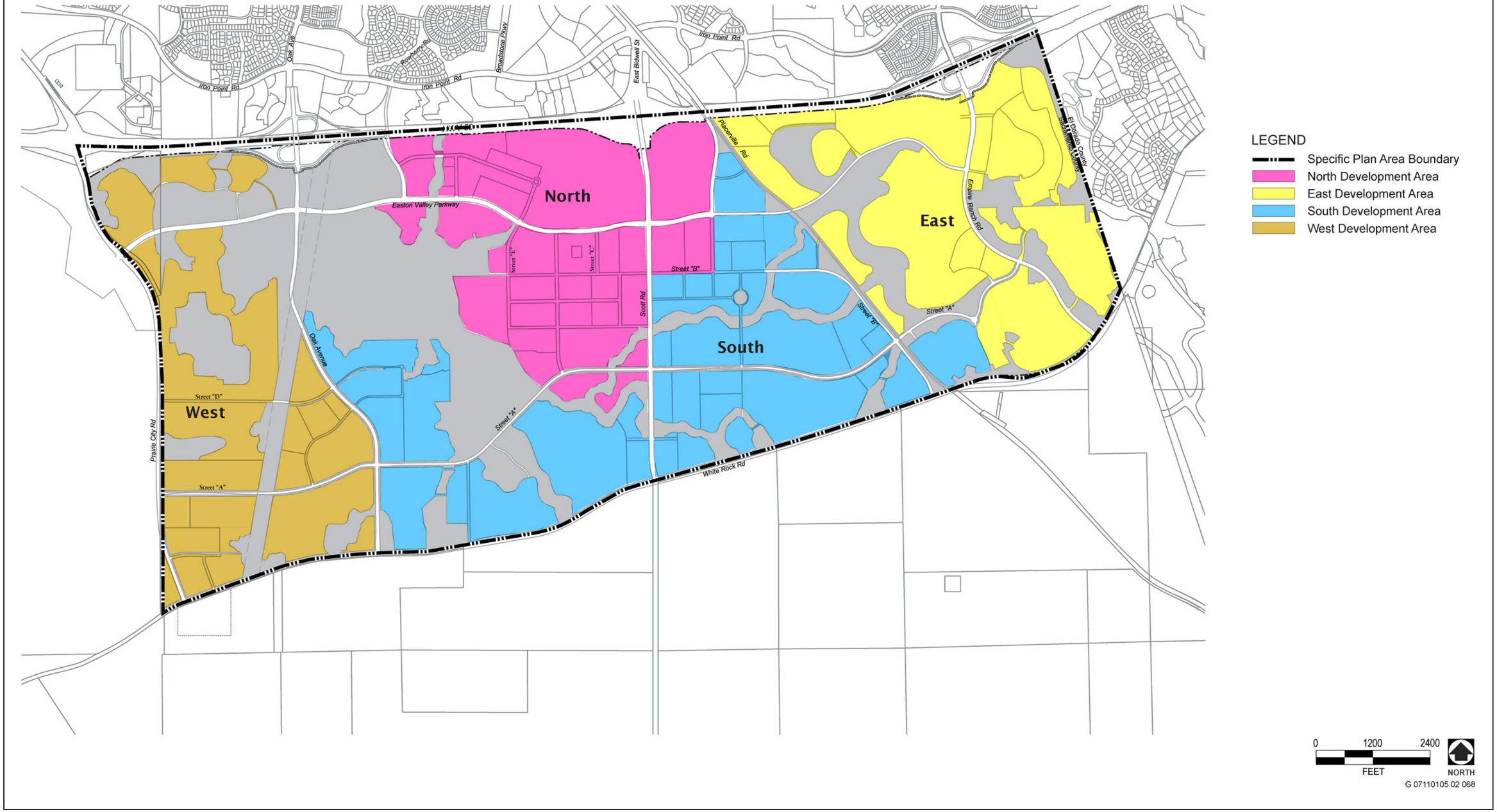
Source: RRM Design Group 2008

Conceptual Pedestrian, Bicycle, and Transit Corridors **Exhibit 2-10**



Source: MacKay & Somps 2008, RRM Design Group 2008, Adapted by AECOM in 2009

Proposed Off-site Land Development Improvements Exhibit **2-11**



Source: Torrence Planning 2009

Conceptual Project Phasing Plan **Exhibit 2-12**

with a 50-foot-wide avoidance buffer in the SPA is provided in Exhibit 2-13. Proposed backbone infrastructure improvements in this alternative are illustrated in Exhibit 2-14. Under this alternative, 1,506.1 acres of the SPA would be designated as open space, compared to 1,057 acres under the Proposed Project Alternative. This alternative also would require more expensive/time-consuming, methods of construction for roadways and utilities. Under this alternative, approximately 3,837 fewer residential housing units would be constructed, and approximately 131 fewer acres would be used for commercial/industrial development, than under the Proposed Project Alternative. The acreage proposed for park use is reduced to 84.8 acres in this alternative. Tables 2-4 and 2-5 list the total estimated residential, commercial, and industrial development under this alternative. The off-site water facilities in this alternative would avoid fill of waters of the U.S. by using horizontal directional drilling (i.e., jack-and-bore) construction methods along the pipeline alignment and by siting the water treatment plant in a location that would avoid fill of waters of the U.S.

Table 2-4
Summary Comparison of Residential Development under the No USACE Permit Alternative and the Proposed Project Alternative

Land Use Type	No USACE Permit Alternative			Proposed Project Alternative		
	Acres	du/ac[1]	Units	Acres	du/ac[1]	Units
Single Family	795.8	3	2,388	560.7	3	1,687
Single Family High Density	204.9	5.5	1,127	531.2	5.5	2,933
Multi-Family Low Density	147.0	9	1,323	268.5	9	2,434
Multi-Family Medium Density	54.5	18	981	66.9	18	1,224
Multi-Family High Density	8.4	25	210	49.9	25	1,251
Mixed Use	28.7	12	344	59.1	12	681
Total	**1,239.3**		**6,373**	**1,536.3**		**10,210**

[1] du/ac = dwelling units per acre
Source: MacKay & Somps 2008

Table 2-5
Summary Comparison of Commercial and Industrial Development under the No USACE Permit Alternative and the Proposed Project Alternative

Land Use Type	No USACE Permit Alternative Acres	Proposed Project Alternative Acres
Office Park	73.9	20
Community Commercial	7.2	133
General Commercial	177.6	86
Regional Commercial	131.7	282
Total	**390.4**	**521**

Source: MacKay & Somps 2008

2.3.4 RESOURCE IMPACT MINIMIZATION ALTERNATIVE

This alternative would include additional areas of high-quality biological habitat in the proposed preserve area, and would also preserve all of the on-site cultural resources that would be eligible for listing on the California Register of Historical Resources/National Register of Historic Places. Exhibit 2-15 illustrates the conceptual land use plan for the Resource Impact Minimization Alternative, and Exhibit 2-16 illustrates proposed backbone

infrastructure improvements. A summary comparison of the long-term environmental benefits to be gained, or adverse impacts to be avoided, among all alternatives is provided at the end of this chapter; detailed comparisons are provided within each section of Chapter 3, "Affected Environment, Environmental Consequences, and Mitigation Measures."

Under the Resource Impact Minimization Alternative, project components would be reconfigured to avoid many of the impacts on waters of the U.S., including wetlands and high-quality biological habitat, and the level of residential development would be decreased to reduce the amount of project-generated traffic, air quality emissions, and noise. A permit for wetland fill would still be required under this alternative; 26.47 acres of waters of the U.S. would be filled, 13.03 fewer acres than would be filled by the Proposed Project Alternative. An additional 375 acres of land across the SPA would be designated as open space.

A total of 1,429 acres, approximately 40% of the SPA, would become a protected wetland preserve. Areas of the SPA with higher concentrations of cultural resources, including areas on the northwestern portion of the SPA would also remain in open space in this alternative. The total acreage of residential development would be reduced by approximately 205 acres and approximately 2,245 fewer residential units would be constructed. Overall density would decrease (average density across the residentially designated area would be approximately 6 du/ac, compared to 6.65 du/ac under the Proposed Project Alternative). Commercial and industrial development sites would be reduced by approximately 113 acres. Development of park land would be reduced to 105.7 acres. The types of land uses and general on- and off-site infrastructure improvements would remain the same as under the Proposed Project Alternative. Tables 2-6 and 2-7 list the total estimated residential, commercial, and industrial development under this alternative.

Table 2-6
Summary Comparison of Residential Development under the Resource Impact Minimization Alternative and the Proposed Project Alternative

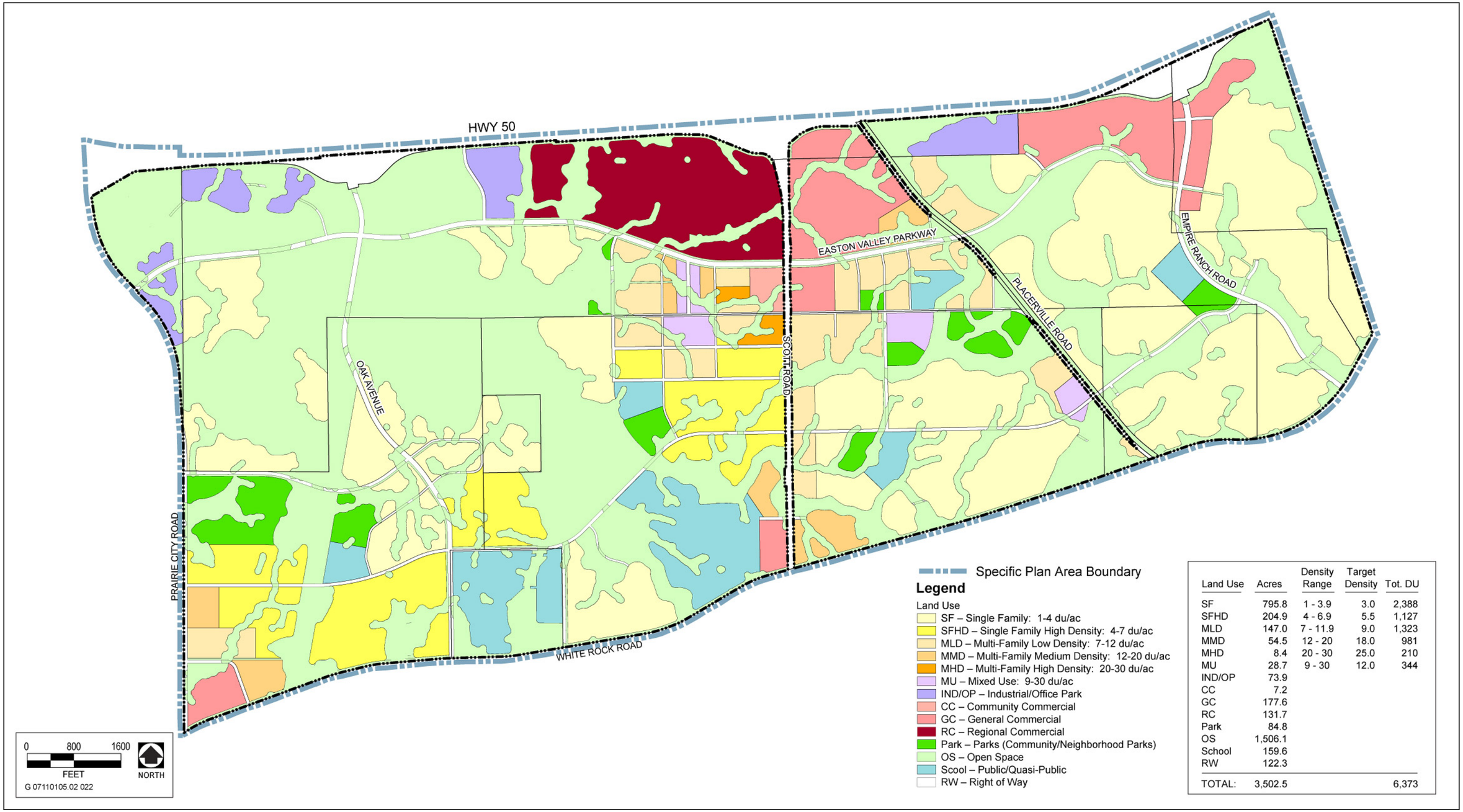
Land Use Type	Resource Impact Minimization Alternative			Proposed Project Alternative		
	Acres	du/ac[1]	Units	Acres	du/ac[1]	Units
Single Family	504.5	3	1,513	560.7	3	1,687
Single Family High Density	491.5	5.5	2,703	531.2	5.5	2,933
Multi-Family Low Density	245.9	9	2,213	268.5	9	2,434
Multi-Family Medium Density	52.3	18	942	66.9	18	1,224
Multi-Family High Density	11.5	25	287	49.9	25	1,251
Mixed Use	25.6	12	307	59.1	12	681
Total	**1,331.3**		**7,965**	**1,536.3**		**10,210**

Note:
[1] du/ac = dwelling units per acre
Sources: MacKay & Somps 2008

Table 2-7
Summary Comparison of Commercial and Industrial Development under the Resource Impact Minimization Alternative and the Proposed Project Alternative

Land Use Type	Resource Impact Minimization Alternative Acres	Proposed Project Alternative Acres
Office Park	52.1	89.2
Community Commercial	15.4	38.9
General Commercial	161.3	213.1
Regional Commercial	110.7	110.8
Total	**339.5**	**452**

Source: MacKay & Somps 2008



Land Use	Acres	Density Range	Target Density	Tot. DU
SF	795.8	1 - 3.9	3.0	2,388
SFHD	204.9	4 - 6.9	5.5	1,127
MLD	147.0	7 - 11.9	9.0	1,323
MMD	54.5	12 - 20	18.0	981
MHD	8.4	20 - 30	25.0	210
MU	28.7	9 - 30	12.0	344
IND/OP	73.9			
CC	7.2			
GC	177.6			
RC	131.7			
Park	84.8			
OS	1,506.1			
School	159.6			
RW	122.3			
TOTAL:	3,502.5			6,373

Source: MacKay & Somps 2008

No USACE Permit Alternative

Exhibit 2-13

Specific Plan Area Boundary

INFRASTRUCTURE ABBREVIATIONS

WTP	Water Treatment Plan
BPS	Booster Pump Station
PRS	Pressure Reducing Station
SD	Storm Drain
SS	Sanitary Sewer
W	Water
RW	Raw Water
FM	Force Main
DB	Detention Basin
WQB	Water Quality Basin

INFRASTRUCTURE LEGEND

- SIGNALIZED INTERSECTION
- ROADWAYS
- STORM DRAIN SYSTEM
- SANITARY SEWER SYSTEM
- WATER SYSTEM

NOTE:
Utilities alignments are shown outside of right-of-way for clarity. Utilities will be built within the right-of-ways and easements.

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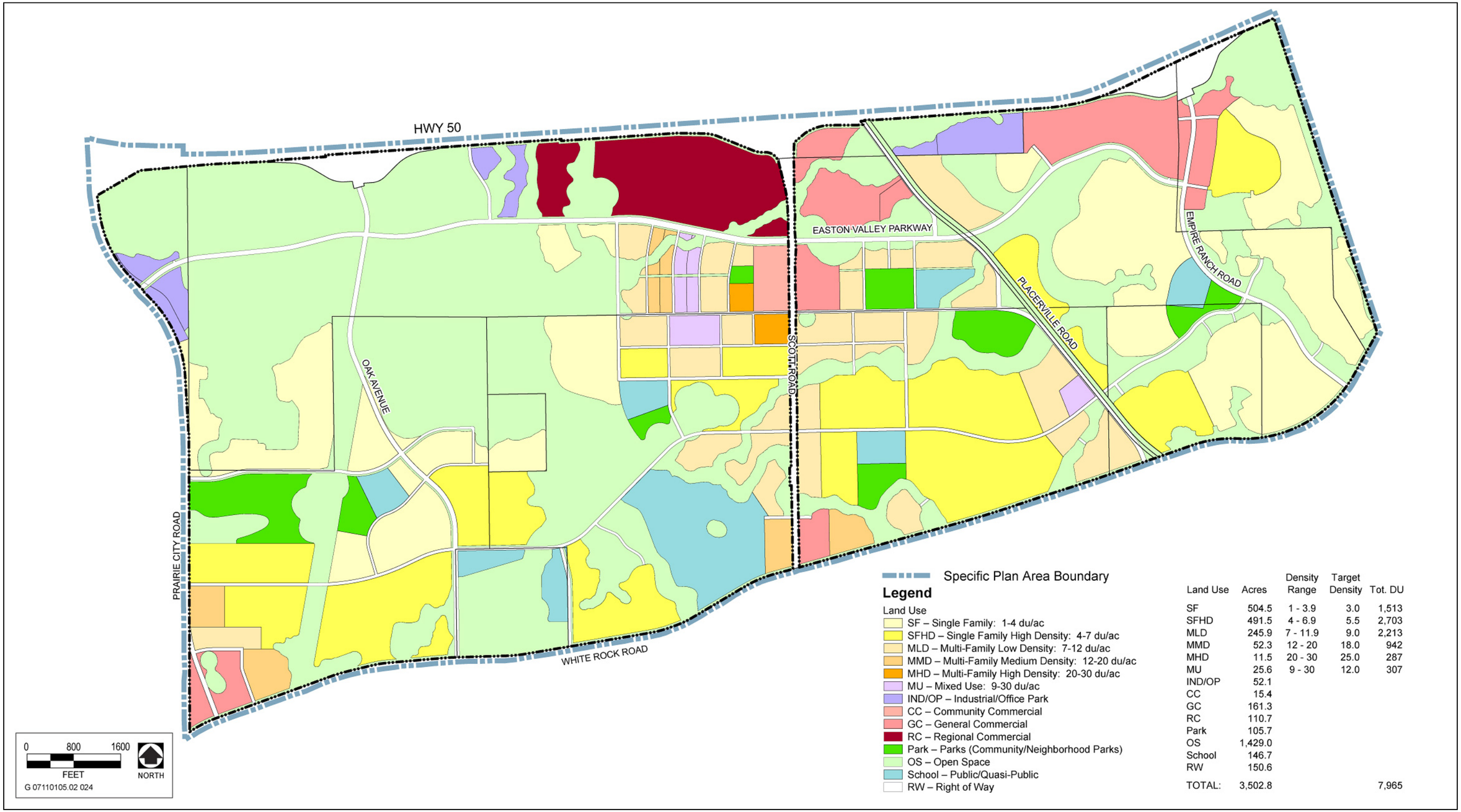
Source: MacKay & Somps 2008

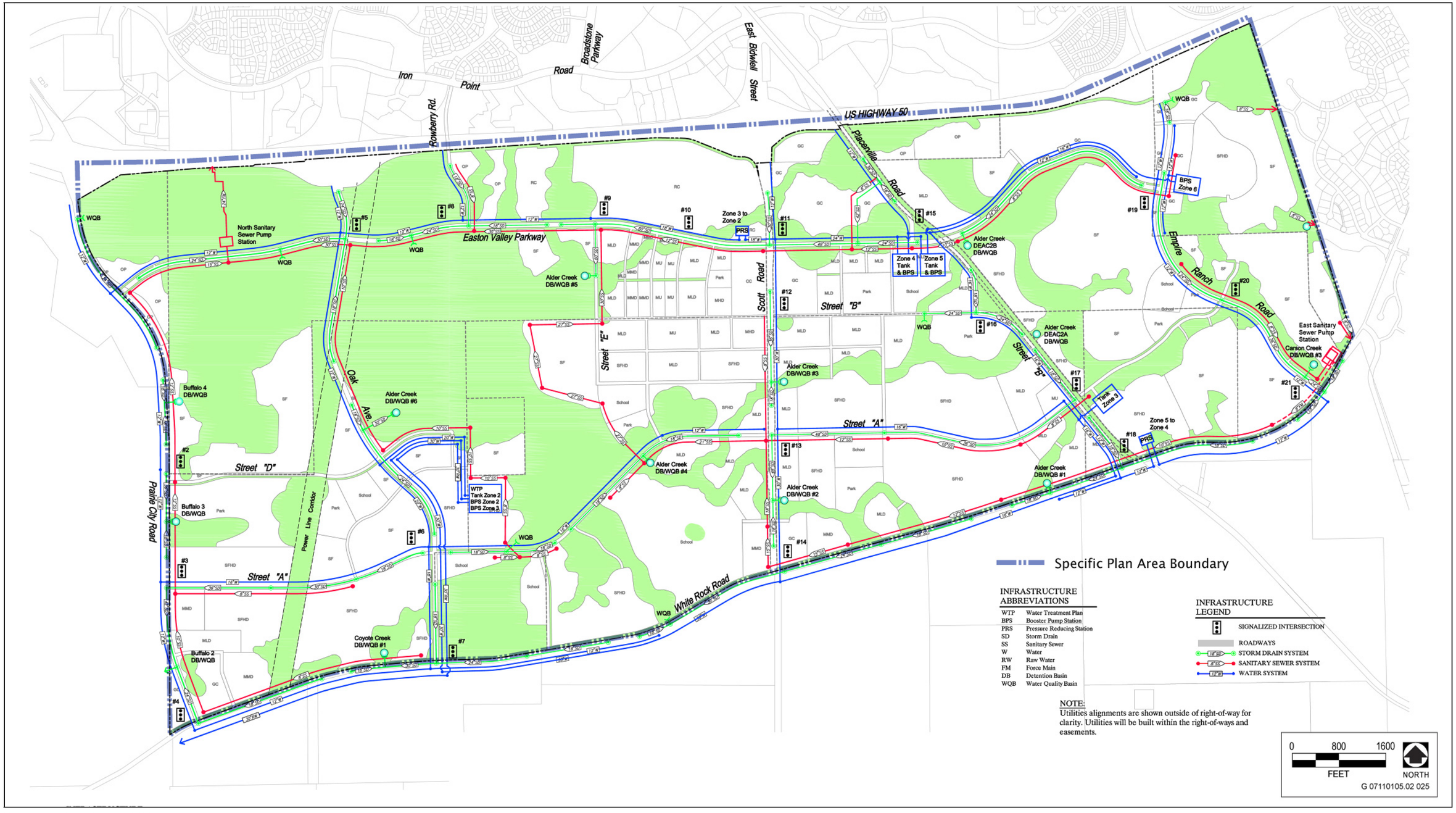
No USACE Permit Alternative Backbone Infrastructure **Exhibit 2-14**



Land Use	Acres	Density Range	Target Density	Tot. DU
SF	504.5	1 - 3.9	3.0	1,513
SFHD	491.5	4 - 6.9	5.5	2,703
MLD	245.9	7 - 11.9	9.0	2,213
MMD	52.3	12 - 20	18.0	942
MHD	11.5	20 - 30	25.0	287
MU	25.6	9 - 30	12.0	307
IND/OP	52.1			
CC	15.4			
GC	161.3			
RC	110.7			
Park	105.7			
OS	1,429.0			
School	146.7			
RW	150.6			
TOTAL:	3,502.8			7,965

Source: MacKay & Somps 2008

Resource Impact Minimization Alternative **Exhibit 2-15**



Source: MacKay & Somps 2008

Resource Impact Minimization Alternative Backbone Infrastructure **Exhibit 2-16**

2.3.5 CENTRALIZED DEVELOPMENT ALTERNATIVE

This alternative would preserve approximately 75% of the eastern part of the SPA, which lies within the Sierra Nevada foothills, in its current undeveloped state. Commercial development would still occur along the south side of U.S. 50 within the foothills. It would also entail about 1,000 fewer equivalent dwelling units (EDUs) than the Proposed Project Alternative. This alternative was developed to reduce potential impacts to biological, cultural, and visual resources. Exhibit 2-17 illustrates the conceptual land use plan for the Centralized Development Alternative, and Exhibit 2-18 illustrates proposed backbone infrastructure improvements. This alternative would fill 37.06 acres of waters of the U.S., 2.48 acres fewer than would be filled under the Proposed Project Alternative.

The Centralized Development Alternative envisions a higher density of residential development on a smaller footprint compared to the Proposed Project Alternative, resulting in more dwelling units per acre. The total acreage of residential development would be reduced by approximately 387 acres, but total number of residential units would be reduced by only 1,186, resulting in a higher overall density per acre (7.85 du/ac in the Centralized Development Alternative compared to 6.65 du/ac in the Proposed Project Alternative). The acreage of commercial and industrial development would be similar in this alternative compared to the Proposed Project Alternative. The acreage proposed for park use is reduced to 118.7 acres in this alternative, including local parks which are included in acreage totals for residential and mixed-use designations. The types of land uses and general on- and off-site infrastructure improvements under the Centralized Development Alternative would remain the same as under the Proposed Project Alternative. A 1,464.4-acre area would be dedicated to open space (approximately 407 acres more than under the Proposed Action Alternative) is also designated under the Centralized Development Alternative. Tables 2-8 and 2-9 list the total estimated development under this alternative.

Table 2-8
Summary Comparison of Residential Development under the Centralized Development Alternative and the Proposed Project Alternative

Land Use Type	Centralized Development Alternative			Proposed Project Alternative		
	Acres	du/ac[1]	Units	Acres	du/ac[1]	Units
Single Family	213.7	3	641	560.7	3	1,687
Single Family High Density	473.1	5.5	2,602	531.2	5.5	2,933
Multi-Family Low Density	282.4	9	2,542	268.5	9	2,434
Multi-Family Medium Density	113.6	18	2,044	66.9	18	1,224
Multi-Family High Density	30.5	25	764	49.9	25	1,251
Mixed Use	36.1	12	433	59.1	12	681
Total	**1,149.4**		**9,026**	**1,536.3**		**10,210**

Note:
[1] du/ac = dwelling units per acre
Source: MacKay & Somps 2008

2.3.6 REDUCED HILLSIDE DEVELOPMENT ALTERNATIVE

This alternative would reduce the developed area on the eastern portion of the SPA, which lies within the Sierra Nevada foothills, leaving more of this area in its current undeveloped state for aesthetic, biological, and cultural resource purposes. It would also entail about 1,343 additional EDUs compared to the Proposed Project Alternative, with a much higher density of development within the central portion of the SPA, thus reducing potential impacts related to traffic and air quality. Exhibit 2-19 illustrates the proposed land use plan for the Reduced Hillside Development Alternative, and proposed backbone infrastructure improvements are illustrated

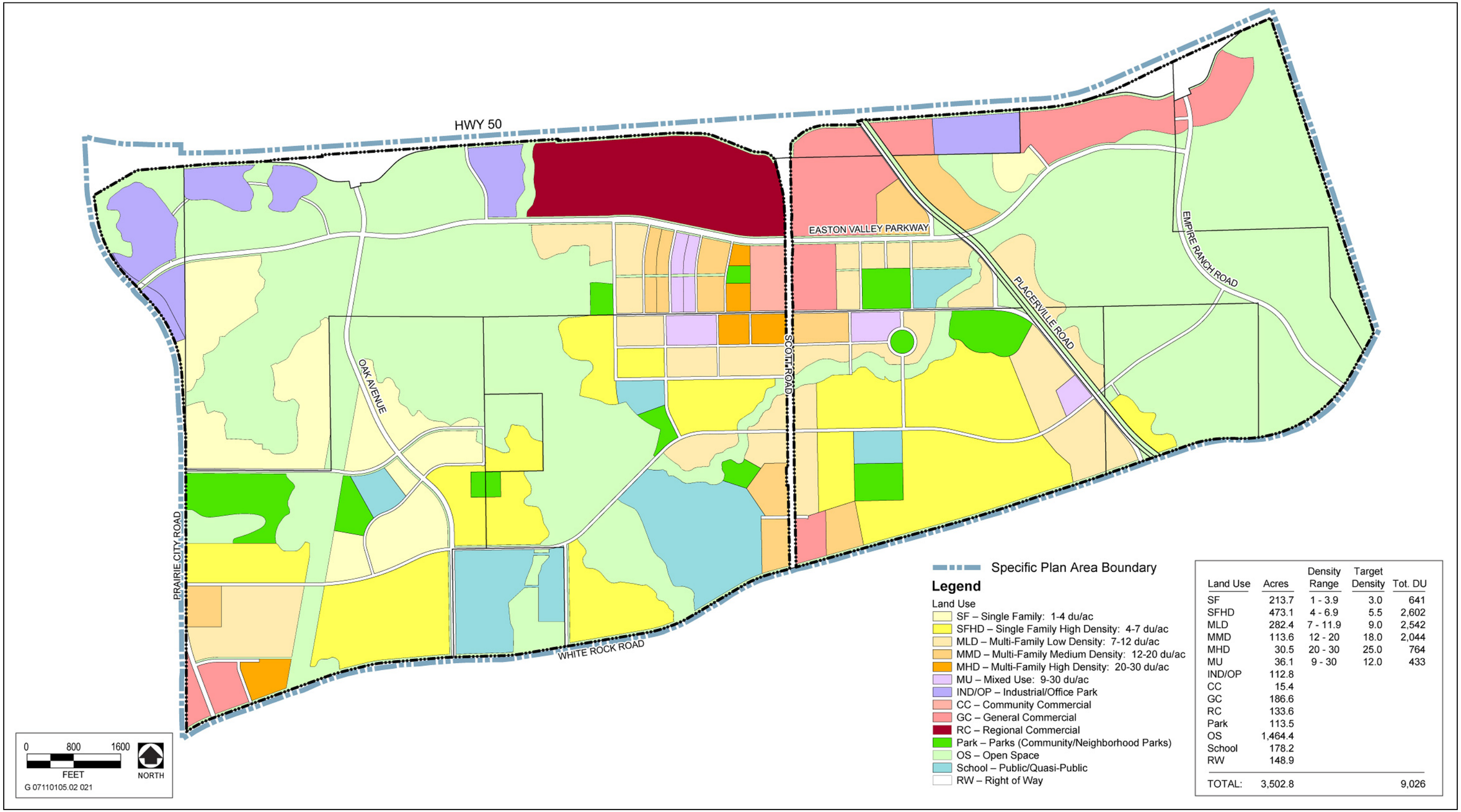
Table 2-9 Summary Comparison of Commercial and Industrial Development under the Centralized Development Alternative and the Proposed Project Alternative		
Land Use Type	Centralized Development Alternative Acres	Proposed Project Alternative Acres
Office Park	112.8	89.2
Community Commercial	15.4	38.9
General Commercial	186.6	213.1
Regional Commercial	133.6	110.8
Total	**448.4**	**452**
Source: MacKay & Somps 2008		

in Exhibit 2-20. The Reduced Hillside Development Alternative would fill 42.69 acres of waters of the U.S., 3.19 acres more than would be filled under the Proposed Project Alternative.

Although low density on a particular property may reduce the levels of impacts occurring on or emanating from the property, low densities can be considered an inefficient use of finite land resources. In areas with growing populations, low-density development coupled with increasing market demand can result in development being pushed outward toward other areas on the urban periphery, with the long-term consequence of more overall loss of habitat, open space, and farmland. In this alternative, the land use mix includes more residential areas at higher densities, and relatively less low-density single-family residential development. Although these higher densities may result in greater localized impacts on resources, the overall area of disturbance is reduced by concentrating development in particular locations. Sacramento County has experienced demographic pressure reflecting an increasing statewide population and intrastate migration from the San Francisco Bay Area and southern California, and the City is interested in furthering its goals and objectives of providing a mix of affordable housing and new jobs to its residents; therefore, developing the site with a higher density, centralized land use pattern would focus market demand for development into an area near existing development, infrastructure, and services while increasing the amount of land which remains as open space. Traffic modeling also shows that higher density development results in a reduction in vehicle miles traveled and associated greenhouse gas emissions.

The Reduced Hillside Development Alternative envisions a greater density of residential development on a slightly smaller footprint compared to the Proposed Project Alternative, resulting in more dwelling units per acre. The total acreage of residential development would be reduced by approximately 64 acres, but the density would be increased such that approximately 1,343 additional residential units would be constructed. The acreage of commercial and industrial development would be increased by less than 20 acres. The acreage proposed for park use (including local parks which are included in acreage totals for residential and mixed-use designations) is increased to 170.9 acres in this alternative. The types of land uses and general on- and off-site infrastructure improvements under the Reduced Hillside Development Alternative would remain the same as under the Proposed Project Alternative. A 1,057-acre area would be dedicated to open space (the same size as under the Proposed Project Alternative) is also designated under the Reduced Hillside Development Alternative. Tables 2-10 and 2-11 list the total estimated development under this alternative.

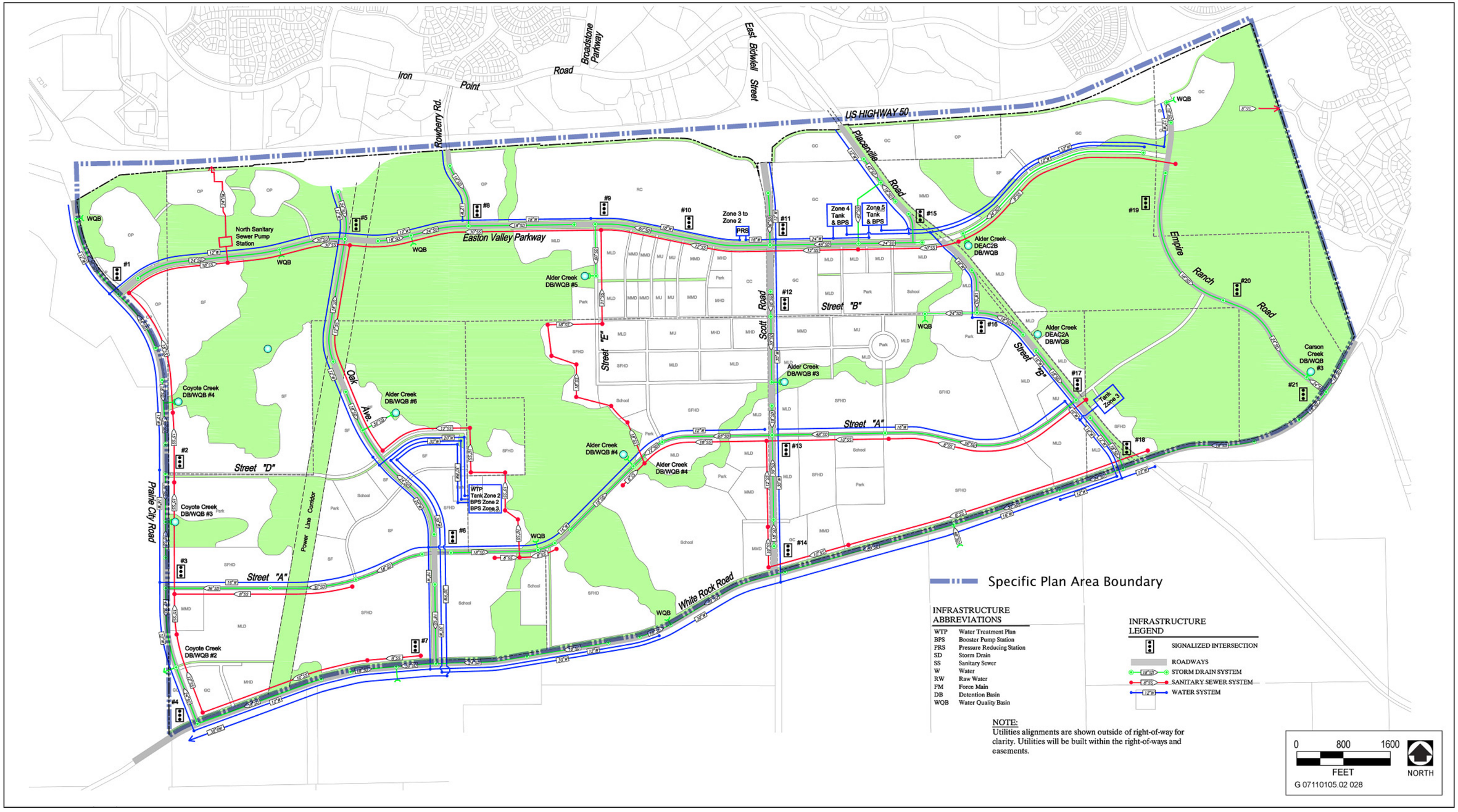
This alternative would include policies to reduce water use, including indoor water use and reduced-water landscapes. The other “Land” alternatives already assume water use reductions near the state of the art. The additional water conservation policies in this alternative are feasible because the increased number of units in this alternative generate more funding and fees for water conservation improvements. Fewer landscaped areas would be irrigated, and more native plantings and low-water demand plantings (including natural non-irrigated groundcover) would be used. A 50% reduction in irrigated landscape area would be required compared to the Proposed Project.



Land Use	Acres	Density Range	Target Density	Tot. DU
SF	213.7	1 - 3.9	3.0	641
SFHD	473.1	4 - 6.9	5.5	2,602
MLD	282.4	7 - 11.9	9.0	2,542
MMD	113.6	12 - 20	18.0	2,044
MHD	30.5	20 - 30	25.0	764
MU	36.1	9 - 30	12.0	433
IND/OP	112.8			
CC	15.4			
GC	186.6			
RC	133.6			
Park	113.5			
OS	1,464.4			
School	178.2			
RW	148.9			
TOTAL:	3,502.8			9,026

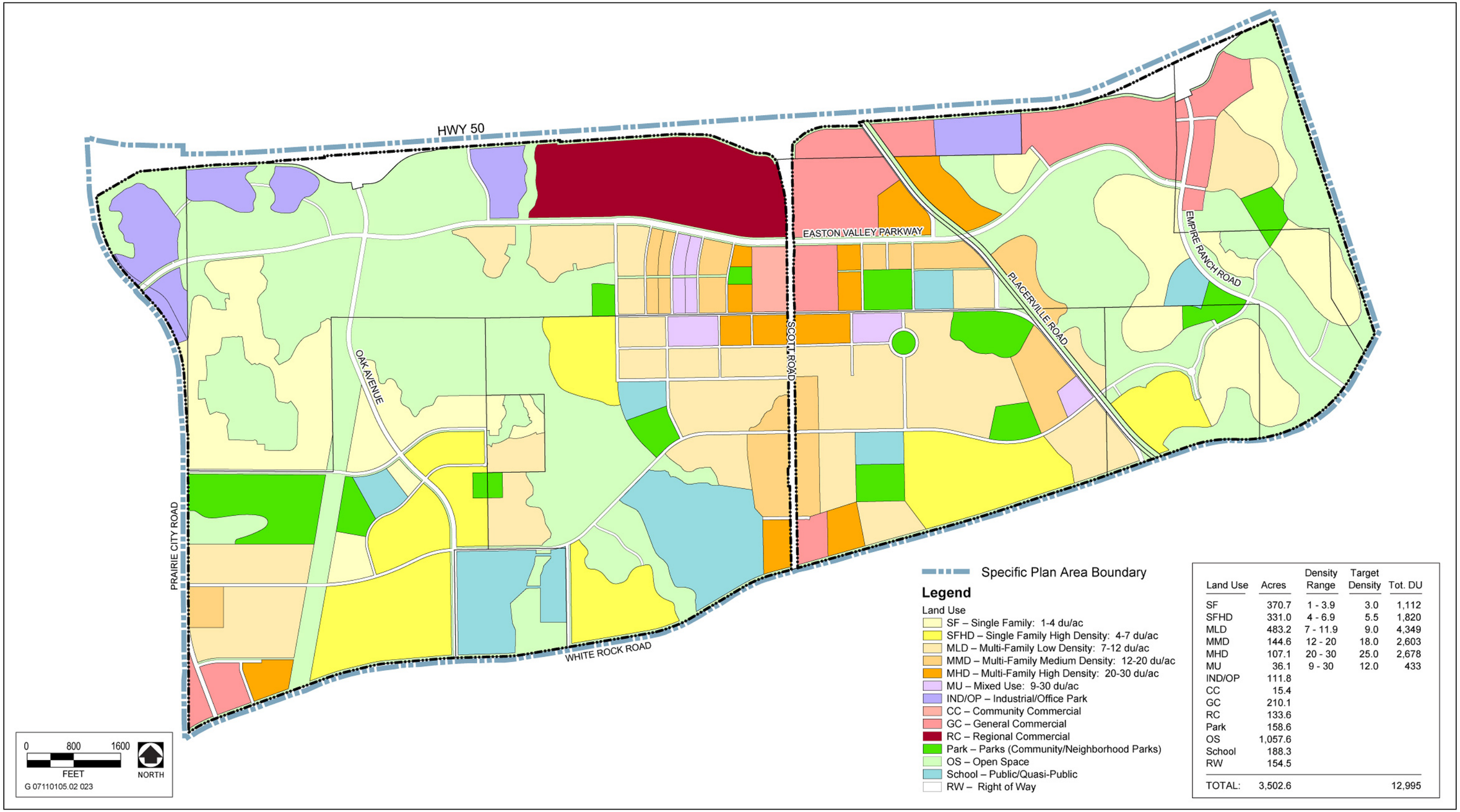
Source: MacKay & Somps 2008

Centralized Development Alternative **Exhibit 2-17**



Source: MacKay & Somps 2008

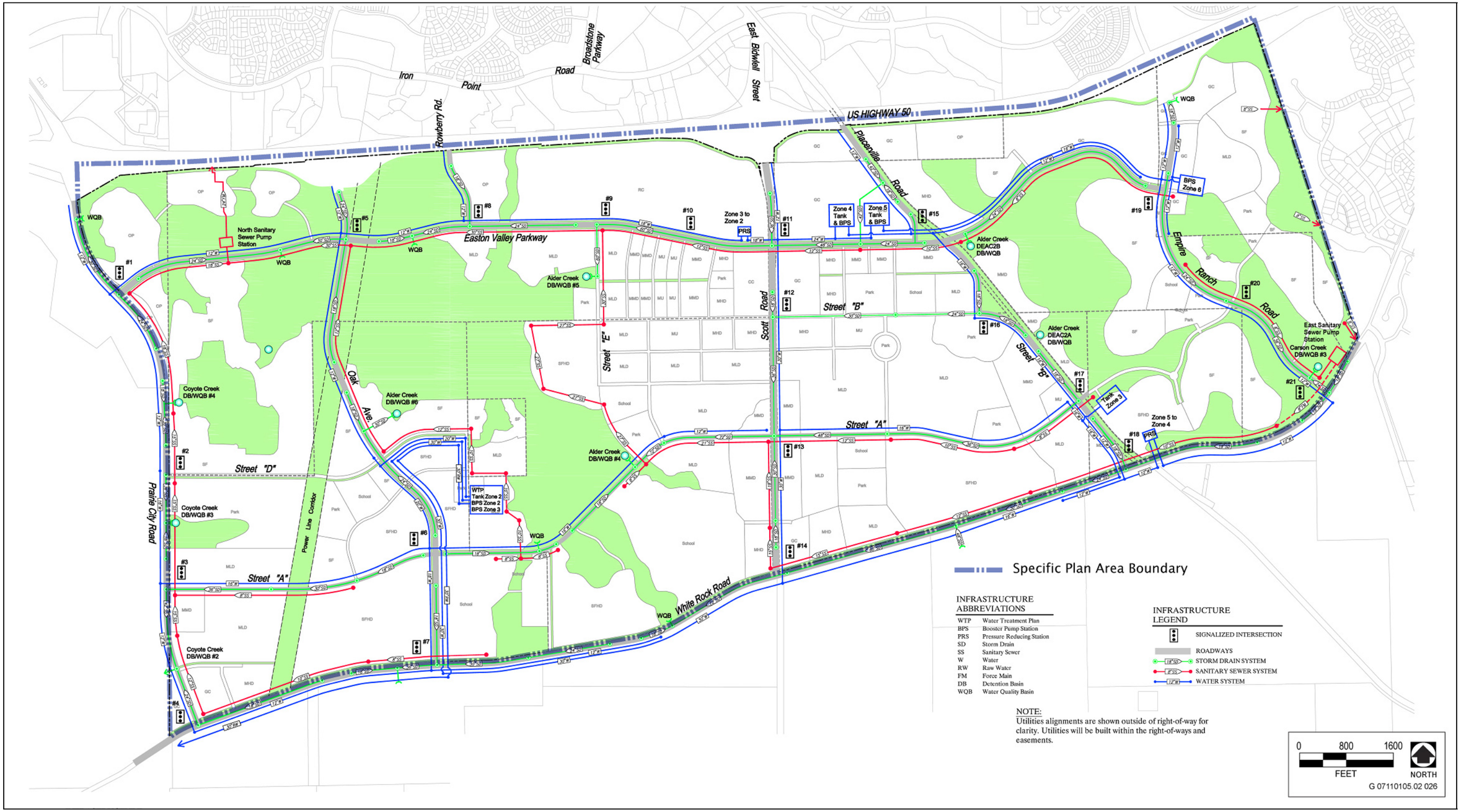
Centralized Development Alternative Backbone Infrastructure **Exhibit 2-18**



Land Use	Acres	Density Range	Target Density	Tot. DU
SF	370.7	1 - 3.9	3.0	1,112
SFHD	331.0	4 - 6.9	5.5	1,820
MLD	483.2	7 - 11.9	9.0	4,349
MMD	144.6	12 - 20	18.0	2,603
MHD	107.1	20 - 30	25.0	2,678
MU	36.1	9 - 30	12.0	433
IND/OP	111.8			
CC	15.4			
GC	210.1			
RC	133.6			
Park	158.6			
OS	1,057.6			
School	188.3			
RW	154.5			
TOTAL:	3,502.6			12,995

Source: MacKay & Somps 2008

Reduced Hillside Development Alternative **Exhibit 2-19**



Source: MacKay & Somps 2008

Reduced Hillside Development Alternative Backbone Infrastructure **Exhibit 2-20**

Table 2-10
Summary Comparison of Residential Development under the Reduced Hillside Development Alternative and the Proposed Project Alternative

Land Use Type	Reduced Hillside Development Alternative			Proposed Project Alternative		
	Acres	du/ac[1]	Units	Acres	du/ac[1]	Units
Single Family	370.7	2.7	989	560.7	3	1,687
Single Family High Density	331.0	4.9	1,619	531.2	5.5	2,933
Multi-Family Low Density	483.2	8	3,866	268.5	9	2,434
Multi-Family Medium Density	144.6	16	2,314	66.9	18	1,224
Multi-Family High Density	107.1	22.2	2,380	49.9	25	1,251
Mixed Use	36.1	10.7	385	59.1	12	681
Total	**1,472.7**		**11,553**	**1,536.3**		**10,210**

Note:
[1] du/ac = dwelling units per acre
Source: MacKay & Somps 2008

Table 2-11
Summary Comparison of Commercial and Industrial Development under the Reduced Hillside Development Alternative and the Proposed Project Alternative

Land Use Type	Reduced Hillside Development Alternative Acres	Proposed Project Alternative Acres
Office Park	111.8	89.2
Community Commercial	15.4	38.9
General Commercial	210.1	213.1
Regional Commercial	133.6	110.8
Total	**470.9**	**452**

Source: MacKay & Somps 2008

2.3.7 "LAND" ALTERNATIVES CONSIDERED AND ELIMINATED FROM FURTHER CONSIDERATION

Alternatives which were considered and eliminated from further consideration in this EIR/EIS for detailed review include alternatives rejected as part of the Section 404(b)(1) alternatives information (attached to this EIR/EIS in Appendix L) and an off-site alternative.

The Section 404(b)(1) on-site alternatives information includes six additional on-site alternatives. These alternatives are all based on the Proposed Project Alternative, with each of the six alternatives adding additional areas of avoidance of waters of the U.S., including wetlands. The Additional Avoidance Alternative includes all of the proposed additional avoidance areas; the remaining alternatives each include a smaller portion of the proposed additional avoidance areas from the Additional Avoidance Alternative. Section 404(b)(1) alternatives which were considered but not carried forward for further analysis in this EIR/EIS are described in greater detail below.

ADDITIONAL AVOIDANCE ALTERNATIVE

The Additional Avoidance Alternative would include the following additional areas where waters of the U.S., including wetlands, would be avoided:

- an intermittent drainage in the southwest portion of the SPA, in Community Commercial, Multi-Family Low Density, and Single Family High Density areas between the existing electrical transmission line easement and Prairie City Road;

- an intermittent drainage and seasonal swale on the north-central portion of the SPA, in Regional Commercial, General Commercial, and Single Family High Density areas on both sides of Scott Road at Easton Valley Parkway;

- an artificial-made ditch on the western portion of the SPA, in a Single Family area south of Easton Valley Parkway and west of the electrical transmission line easement; and

- an intermittent drainage in an Open Space area near the northeast corner of the SPA.

Implementation of the Additional Avoidance Alternative would reduce the acreage of impacted waters of the U.S., including wetlands, by 4.26 acres. However, this alternative would also remove the frontage for the Regional Commercial parcel along both Scott Road and Easton Valley Parkway. The loss of street frontage and the changes to the shape of the parcel would render the primary retail component of the project infeasible. Without a feasible regional commercial project component, this alternative would not meet Objective 7 (provide neighborhood- and regional-serving retail areas within the SPA) and potentially would not meet Objective 11 (generate positive fiscal impacts for the City through development within the SPA).

Implementation of this alternative would require construction of additional bridges, parking garages and utilization horizontal directional drilling methods, which would substantially increase costs of this alternative. In addition, this alternative would remove the frontage for the Regional Commercial parcel along both Scott Road and Easton Valley Parkway. The loss of street frontage and the changes to the shape of the parcel due to a wide wetland corridor would reduce the development by 26.6 acres. The proposed Regional Commercial site was designed in coordination with Regional Mall developers to determine the most efficient dimensions and site configuration for development. The applicants have provided evidence from several regional mall developers that construction of the wetland corridor would make development of a regional mall infeasible. Without a feasible regional commercial project component, this alternative would not meet Objective 7 (provide neighborhood- and regional-serving retail areas within the SPA) and potentially would not meet Objective 11 (generate positive fiscal impacts for the City through development within the SPA).

Because development of this alternative would not be reasonable or practicable due to costs and logistics, this alternative was rejected from consideration under NEPA ((please refer to Appendix L, which contains the Section 404(b)(1) Alternatives Information, for a more detailed description of the practicality of this alternative)

CARPENTER RANCH AVOIDANCE ALTERNATIVE

The Carpenter Ranch Avoidance Alternative would include the following additional area where wetlands would be avoided:

- an intermittent drainage and seasonal swale on the north-central portion of the SPA, in Regional Commercial, General Commercial, and Single Family High Density areas on both sides of Scott Road at Easton Valley Parkway.

Implementation of the Carpenter Ranch Avoidance Alternative would reduce the acreage of impacted wetlands and waters by 2.88 acres. In addition, implementation of this alternative would result in similar cost and logistic constraints as the Additional Avoidance Alternative, as described above. Without a feasible regional commercial project component, this alternative would not meet Objective 7 (provide neighborhood- and regional-serving retail areas within the SPA) and potentially would not meet Objective 11 (generate positive fiscal impacts for the City through development within the SPA).

Because development of this alternative would not be reasonable or practicable due to costs and logistics, this alternative was rejected from consideration under NEPA ((please refer to Appendix L, which contains the Section 404(b)(1) Alternatives Information, for a more detailed description of the practicality of this alternative). It was eliminated from further detailed study under CEQA because it would not achieve the key CEQA project objectives (listed in Chapter 1, "Introduction and Statement of Purpose and Need").

REGIONAL COMMERCIAL AVOIDANCE ALTERNATIVE

The Regional Commercial Avoidance Alternative would include the following additional area where wetlands would be avoided:

- a seasonal swale on the north-central portion of the SPA, in Regional Commercial and Single Family High Density areas on both sides of Scott Road at Easton Valley Parkway.

Implementation of the Regional Commercial Avoidance Alternative would reduce the acreage of impacted wetlands and waters by 2.50 acres. In addition, implementation of this alternative would result in similar cost and logistic constraints as the Additional Avoidance Alternative, as described above. Without a feasible regional commercial project component, this alternative would not meet Objective 7 (provide neighborhood- and regional-serving retail areas within the SPA) and potentially would not meet Objective 11 (generate positive fiscal impacts for the City through development within the SPA).

Because development of this alternative would not be reasonable or practicable due to costs and logistics, this alternative was rejected from consideration under NEPA ((please refer to Appendix L, which contains the Section 404(b)(1) Alternatives Information, for a more detailed description of the practicality of this alternative). It was eliminated from further detailed study under CEQA because it would not achieve the key CEQA project objectives (listed in Chapter 1, "Introduction and Statement of Purpose and Need").

WESTERN RESIDENTIAL AVOIDANCE ALTERNATIVE

The Western Residential Avoidance Alternative would include the following additional area where wetlands would be avoided:

- an artificial-made ditch on the western portion of the SPA, in a Single Family area south of Easton Valley Parkway and west of the electrical transmission line easement.

Implementation of the Western Residential Avoidance Alternative would reduce the acreage of impacted wetlands and waters by 0.31 acres, and reduce the developable area by 14.3 acres. Due to the hilly terrain of the site, implementation of this alternative would result in the creation of an isolated portion of the development which would require the construction of a sanitary sewer pump station and force main. Construction of a pump station would increase costs and would increase potential environmental impacts that may result from a pump system failure. This alternative would require the construction of an additional street access to allow for a connection to Oak Aveny Parkway, as at least two points of access to a development area for emergency vehicle and evacuation routes are required by City Ordinance. Construction of this additional street would impact the open space area and result in the removal of oak woodland habitat. In addition, under this alternative, the construction of homes surrounded by a preserve area would result in adverse impacts to the preserved waters, reducing and potentially eliminating the functions of the surrounding waters.

Because implementation of this project would result in additional impacts to sensitive oak woodland habitat while only preserving 0.311 acres of man-made ditch and intermittent stream which would still be indirectly impacted, this alternative was, rejected from consideration under NEPA ((please refer to Appendix L, which contains the Section 404(b)(1) Alternatives Information, for a more detailed description of the practicality of this alternative).

It was eliminated from further detailed study under CEQA because it would not achieve the key CEQA project objectives (listed in Chapter 1, "Introduction and Statement of Purpose and Need").

OFF-SITE "LAND" ALTERNATIVES

Off-site alternatives are usually considered in environmental documents when one of the means to avoid or eliminate the significant impacts of a project is to develop it in a different available location. To be considered feasible by the City, development on potential off-site locations must be able to fulfill the project purpose and attain most of the basic objectives of the Folsom South of U.S. Highway 50 project. To satisfy the project applicant(s)' and the City's project objectives under CEQA, a large undeveloped site within the City of Folsom, or within the City's sphere of influence, would be needed. To satisfy USACE's project purpose under NEPA, a large undeveloped site elsewhere in eastern Sacramento County would be needed that could be reasonably obtained, used, or expanded.

Policy LU 81 of the Sacramento County General Plan provides very limited conditions under which the County can expand the Urban Service Boundary (USB), which would be necessary if the Proposed Project Alternative were constructed in an off-site location anywhere other than on lands south of Jackson Highway/State Route 16 or west of Grant Line Road. When considering such a proposal, the County must make several findings, including a finding that there is insufficient land within the USB to accommodate the project's 20-year demand for urban uses. If all of the criteria are not met, the County Board of Supervisors must approve moving the USB by a 4/5 vote. Since enactment of this policy in 1993, the board has never approved an application for any project of even a moderate size outside the USB.

The identification of off-site alternative land development locations was limited to those locations that could satisfy certain criteria. First, as discussed above, the geographic area for off-site alternatives was limited to areas within the Sacramento County USB. In addition to the policy reasons discussed above, the USB was chosen as an appropriate geographic boundary because locating the project outside of the existing USB would require massive expansion of infrastructure that is not currently planned.

Next, proximity of off-site alternatives to major transportation corridors was a consideration of site selection. This criterion was established to implement key project needs and objectives, including a large retail center. A location along a major arterial, preferably adjacent to a freeway, is preferable for a retail project of this size; however, suitable available sites meeting this criterion were not identified because no undeveloped, uncommitted sites are currently available that meet this criterion. However, other off-site locations not meeting this criterion have been identified, although not preferable.

Areas encompassing a size similar to the proposed development footprint of the SPA (2,500 acres) were considered preferable to provide similar residential and commercial use capacities. Although the SPA is approximately 3,500 acres, approximately 1,050 acres would be set aside as open space and therefore project development would occur on approximately 2,450 acres. However, to satisfy the NEPA objectives, smaller sites in eastern Sacramento County were considered as long as they were deemed appropriate to accommodate a "large-scale" mixed-use development including both residential and commercial components. Although smaller sites (as small as 1,500 acres) were considered, these sites would not be preferred because they would not accommodate the same volume and density of residential and commercial uses as the proposed development footprint. Furthermore, while these smaller sites might meet the USACE's NEPA purpose and need, they would not meet the City of Folsom's CEQA purpose and need.

The primary obstacle in identifying an off-site land development alternative that otherwise satisfies the primary criteria discussed above is aggregating enough parcels to create a project of an adequate size. It is infeasible to aggregate numerous small parcels to create a project of sufficient size and of a contiguous nature. Furthermore, all of the undeveloped parcels within the City of Folsom combined do not amount to more than 100 acres of developable land. Therefore, the only available uncommitted land that is of sufficient size to accommodate the

proposed development is located outside of the City of Folsom's current boundaries or sphere of influence and, therefore does not meet the City's project objectives. Identifying parcels in eastern Sacramento County would be logistically challenging for the City of Folsom because those parcels would be outside of the City's Sphere of Influence area.

The majority of undeveloped land in eastern Sacramento County and within the USB is within the City of Rancho Cordova and unincorporated portions of Sacramento County east of Grant line Road. Several large, undeveloped tracts of land were identified in these areas but were ultimately eliminated as potential off-site alternative locations because they are currently undergoing project-level planning for separate projects (e.g., Sunrise Douglas Community Plan area, Mather Field Redevelopment, Easton Planning Area, SunCreek Specific Plan area). These projects include Arboretum, Cordova Hills, Excelsior Estates, Glenborough at Easton and Easton Place, Mather East and Mather Field, Rio del Oro, the Ranch at Sunridge, and Vineyard Springs, all of which currently have (or will soon have [i.e., reasonably foreseeable] development applications filed with the applicable jurisdiction. A complete list of the projects planned on the undeveloped parcels initially identified as potential off-site alternative land development locations, as well as their existing acreage of waters of the U.S., is provided in Table 4-5, page 4-32 of Chapter 4, "Other Statutory Requirements" as part of the cumulative impacts discussion for biological resources. The locations of these planned projects are shown in Exhibit 2-21.

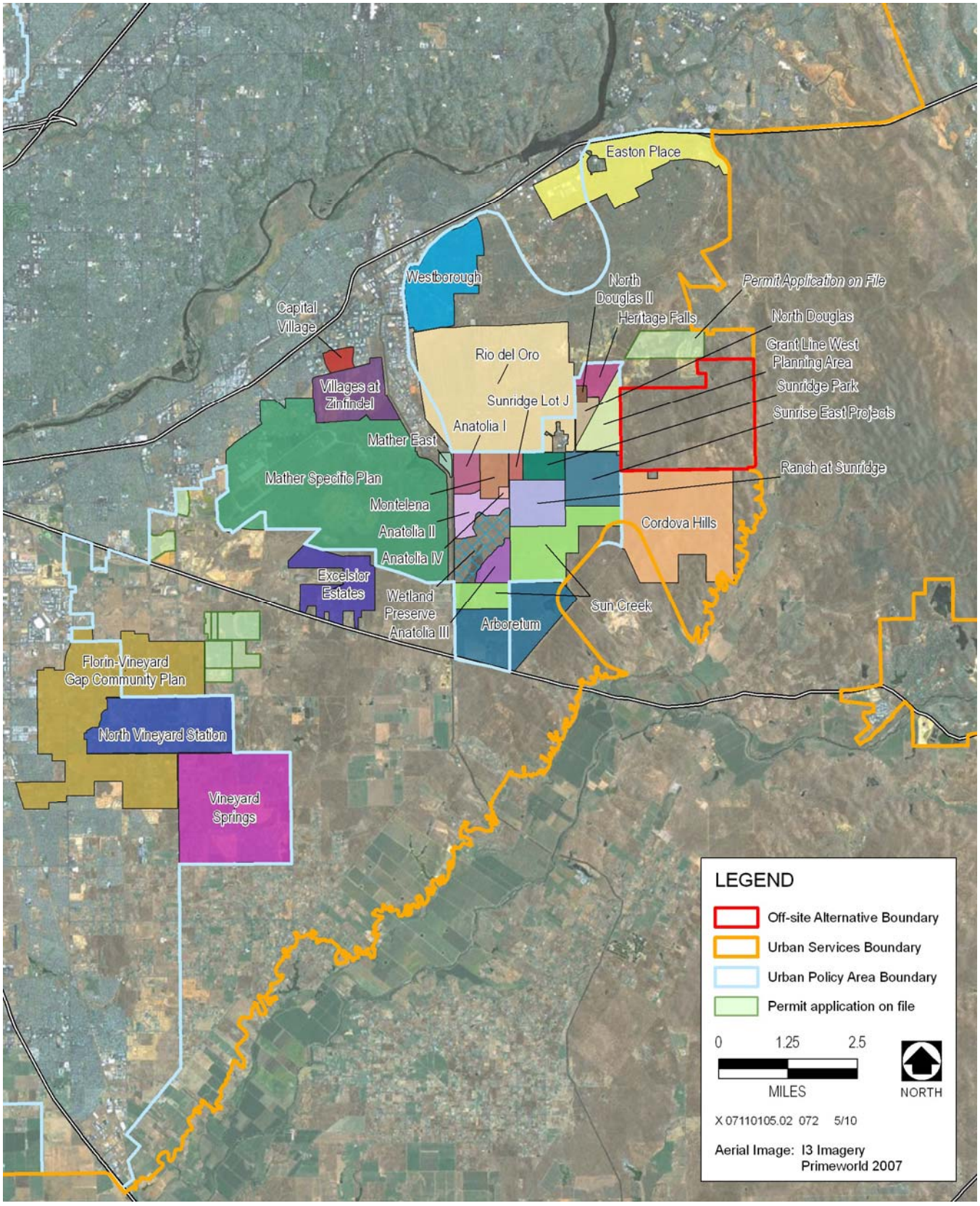
The Folsom South of U.S. 50 Specific Plan SPA represents the only available major undeveloped land area in Folsom's sphere of influence that is capable of providing substantial job opportunities and a mix of uses, and that would fulfill the project applicant(s)' and the City's project purpose and attain most of the basic project objectives. The majority of undeveloped land in the project vicinity is currently undergoing project-level planning for separate projects (e.g., Sunrise Douglas Community Plan area, Mather Field Redevelopment, Easton Planning Area, SunCreek Specific Plan area). These areas are not available to accommodate the project because they are committed to future development, are outside the City's jurisdictional boundaries, and thus unavailable to the City of Folsom. However, there is one area within the USB in eastern Sacramento County that could potentially meet the project's purpose under NEPA, but would not meet the City project purpose because it would be located outside of the City's jurisdictional boundaries. However, because this site may meet the USACE defined purpose and need, it was further evaluated to determine if the site is practicable for development, would impact fewer acres of waters of the U.S. than the Proposed Project, and if it is available.

Qualitative Impact Assessment of Off-site Land Development Alternative

For biological resources, the screening analysis of the off-site location was based on:

- searches of the California Native Plant Society's (CNPS's) electronic database and the California Natural Diversity Database (CNDDB),
- review and interpretation of aerial photographs of the sites,
- AECOM biologists' knowledge of biological resources occurring in the vicinity of the SPA, and
- review of relevant literature.

Exhibit 2-22 shows the location of natural communities at the off-site alternative location. Habitats were initially mapped on aerial photographs at a scale of 1 inch = 400 feet, then digitized and quantified using ArcGIS. Table 2-12 shows the approximate acreage of natural communities present at the off-site alternative location.



Source: Information compiled by AECOM in 2010

Location of Planned Projects Related to Biological Resources **Exhibit 2-21**

Table 2-12
Natural Community Types at the Off-Site Land Development Alternative

Community Type	Acreage[1]
Vernal pool grassland[2]	2,379.1
Vernal pool complex[3]	28.0
Vernal Pool	9.1
Vernal Swales	17.3
Orchard	34.7
Disturbed	32.6
Seasonal wetland	8.1
Low density development	55.4
Cottonwood woodland	7.7
Streams/Creeks (seasonal drainages)	8.70
Pond	5.9
Total	**2,586.6**

Notes:
[1] Acreages are not exact because the numbers have been rounded to the nearest tenth of an acre.
[2] No delineation of waters of the U.S. that would enable quantification of an exact acreage of vernal pools in the study area for the off-site alternative location was conducted for this analysis. There are likely additional vernal pools and swales within this grassland area that were not visible on the aerial imagery.
[3] Vernal pool complexes are systems of interconnected vernal pools and vernal swales.
Source: Data compiled by AECOM in 2010

Summary

The off-site land development alternative location consists of 15 parcels comprising approximately 2,587 acres located southwest of the SPA and east of the City of Rancho Cordova in unincorporated Sacramento County. The site is located just west of the eastern Sacramento County USB line and Scott Road and is bounded by Grant Line Road on the west. The site is accessible via Douglas Road to Grant Line Road. No other improved roads exist on or provide access to the off-site alternative location.

The off-site alternative location is characterized primarily by vernal pool grassland habitat. All of the vernal pool grassland cover contains scattered vernal pools, or vernal pool complexes (i.e., systems of interconnected vernal pools and swales), interspersed within a grassland matrix (Exhibit 2-22). The western portion of the off-site alternative location has the highest concentration of vernal pools and swales visible on the aerial imagery. Because it is not possible to determine the full extent of vernal pools present from aerial photography alone, the information presented herein regarding vernal pools and swales is considered a rough estimate. Seasonal tributaries to Coyote Creek, Carson Creek, and Deer Creek are also present. All of the drainage channels on the site are seasonal and appear to be unvegetated. In the northwest portion of the site there is a disturbed area that was used to store mine tailings (cobble). The cobble piles have been removed from the site, but rows of cottonwood trees are still present in the basins that existed between the piles of cobble. The ground formerly occupied by cobble mine tailings is currently barren and disturbed. One pond, created from impoundment of a Coyote Creek tributary, and one pond created from impoundment of a Carson Creek tributary are also present on the site. There are four rural residential in holdings, or low density developments, on the site and some orchards near the northwest boundary.

Sensitive Natural Communities

The vernal pools and vernal swales scattered throughout the vernal pool grassland habitat, as well as the seasonal drainage channels, seasonal wetlands, ponds, streams, and cottonwood woodland would all be considered sensitive natural communities, some of which are subject to USACE jurisdiction under Section 404 of the CWA, Central Valley Regional Water Quality Board jurisdiction under the Porter-Cologne Act, and/or California Department of Fish and Game jurisdiction under Section 1602 of the California Fish and Game Code.

Special-Status Species

The off-site alternative location is situated within the Buffalo Creek Quadrangle, which was included in the database search for the Proposed Project Alternative, as were seven out of the eight surrounding quadrangles. To account for species documented in all surrounding quadrangles, AECOM biologists also conducted CNDDB and CNPS electronic database searches for the Carbondale Quadrangle. Results of the database searches were then used to compare the potential for special-status species to occur at the off-site alternative site locations with the potential for them to occur in the SPA. The results are discussed below.

Special-Status Plant Species

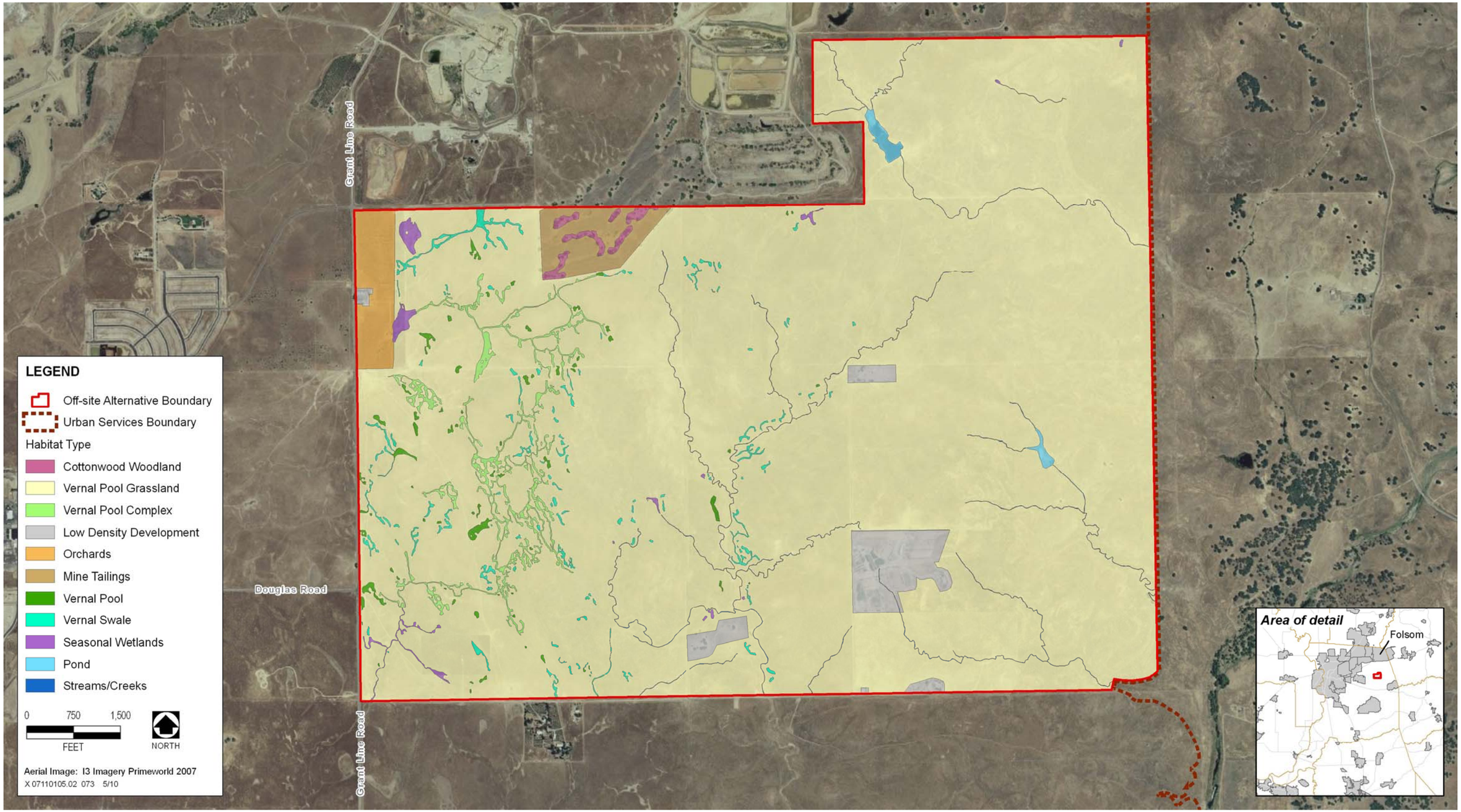
All of the same special-status plant species that are known from or have potential to occur in the SPA (see Table 3A.4-1 in Section 3A.4 “Biological Resources – Land” of this EIR/EIS) also have potential to occur on the off-site alternative location because habitat for these species is present at both locations.

Special-Status Wildlife Species

The off-site alternative location contains vernal pool grassland and could potentially support the same vernal pool invertebrates as the SPA (see Table 3A.4-2 in Section 3A.4, “Biological Resources – Land,” of this EIR/EIS). Because the analysis of the off-site location is based on interpretation of aerial photographs, it is unknown whether elderberry shrubs are present that could support valley elderberry longhorn beetle. However, elderberry shrubs could be present in the cottonwood woodland or in other stands of trees and shrubs found on the site. All of the special-status species associated with grassland and wetland habitats that are known from or have potential to occur in the SPA also could occur at the off-site alternative location because the same grassland and wetland habitat types are present. Although oak woodland and riparian habitats are not present at the off-site alternative, there are isolated and small stands of oak trees and patches of cottonwood woodland that provide potential nest sites for raptors, and burrowing owls could nest in the grassland habitat.

Impacts

Development of the off-site alternative location would be expected to result in significant adverse impacts on common and sensitive natural communities and special-status species. Species and communities affected would be similar to those affected in the SPA; however, the acreages affected by community differ and no oak woodland would be affected because it does not exist at the off-site location (see Table 2-12 and Exhibit 2-22). A total of 77.1 acres of potential waters of the U.S. were mapped on the off-site land alternative location from aerial photograph interpretation. Because vernal pools and swales and other waters of the U.S. are dispersed throughout the off-site location, it would not be possible to avoid impacts on all these aquatic resources and still meet the project purpose and need of a large-scale development similar to the Proposed Project Alternative. Therefore, it is estimated that development of a substantially similar size at the off-site location would result in direct fill of at least 75% of the wetlands and other waters of the U.S. present and indirect impacts to the remaining wetlands. Waters of the U.S. likely to be filled as a result of developing the off-site alternative location include 40.8 acres of vernal pools and swales, 6.1 acres of seasonal wetland, and 6.5 acres of seasonal drainage channels. Therefore, the low-end estimate of direct impacts on waters of the U.S. is approximately 53 acres—14 acres more than would be filled as a result of development in the SPA. Other habitats that would be removed at the off-site alternative



Source: Sacramento Area Council of Governments 2004, Sacramento County 2008, AECOM 2009

Off-site Land Development Alternative – Natural Communities

Exhibit 2-22

location include 7.7 acres of cottonwood woodland and 2,379 acres of vernal pool grassland habitat that likely includes additional vernal pools and swales that were not visible on the aerial imagery.

In addition, development at the off-site land development location of substantially similar size within the County USB would be expected to result in other environmental impacts (related to traffic, air quality, noise) similar to those of the Proposed Project Alternative. Undeveloped areas in the region are used primarily for agriculture, the region is experiencing substantial growth in traffic, and it is in nonattainment of air quality standards. Consequently, any major development in Sacramento County would be expected to generate significant agricultural, traffic, and air quality impacts, and any development that adds significant levels of traffic to regional roadways would contribute to a substantial increase in noise levels. Although the Folsom SPA contains sensitive biological resources (including vernal pools and oak woodland), the alternative site also contains protected wetlands and other waters of the U.S.; thus, similar impacts on biological resources would result on the off-site alternative location. While the off-site alternative location does not support oak woodland, it is expected to contain far greater acreage of vernal pools since nearly the entire site is covered with vernal pool grassland. In addition, the alternative site would be more distant than the Folsom SPA from freeways and urban areas, requiring construction of additional on- and off-site utility and transportation infrastructure to serve the alternative site.

Given that there are no feasible alternative sites that can meet the Folsom South of U.S. 50 CEQA project objectives, and that the only off-site land development alternative available for NEPA project objectives would have substantially greater impacts to wetlands (including vernal pools) as compared to the Proposed Project Alternative, an off-site land development alternative is not evaluated further in this EIR/EIS.

2.4 "WATER" PORTION OF THE PROJECT

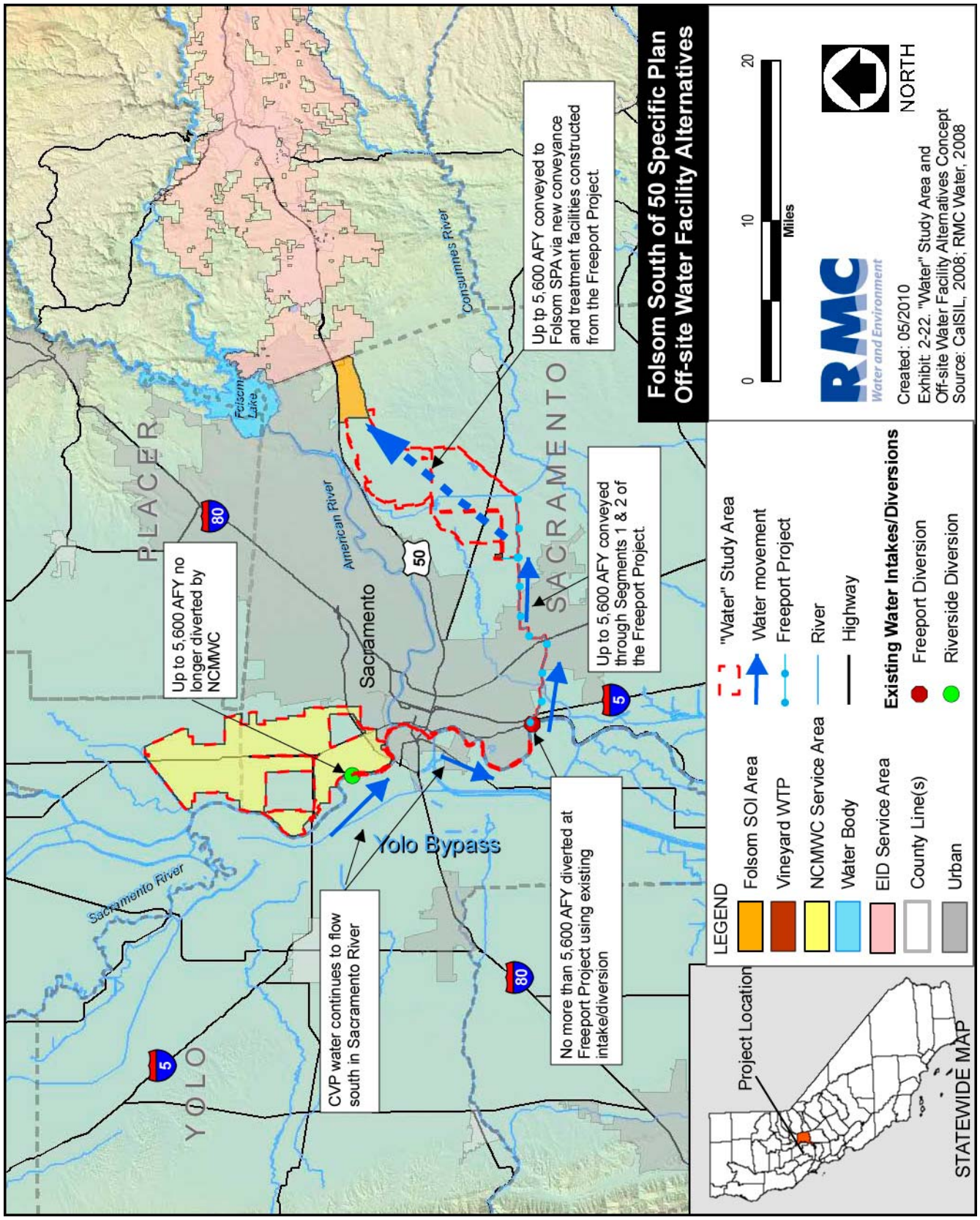
All of the "Water" alternatives considered in this EIR/EIS involve construction and operation of new off-site conveyance and/or treatment infrastructure within east-central portions of Sacramento County to support new development within the SPA. The City has formulated a series of "Water" alternatives, referred to in the EIR/EIS as Off-site Water Facility Alternatives, which would involve the connection of this new water infrastructure to the Freeport Regional Water Project (Freeport Project) to enable for diversion of Central Valley Project (CVP) water at the Sacramento River.

To capture all the components associated with the Off-site Water Facility Alternatives, the "Water" Study Area encompasses approximately 40,000-acres within the lower Sacramento Valley, east of the Sacramento River (see Exhibit 2-23). As shown in Exhibit 2-23 and 2-24, the Natomas Central Mutual Water Company (NCMWC) service area is located east of the Sacramento River and north of the City of Sacramento in the northern section of the "Water" Study Area. The City and Folsom Specific Plan Area are located along U.S. 50 and situated near the eastern Sacramento County line, approximately 25 miles east of the Sacramento River, and within the eastern-most portion of the "Water" Study Area (see Exhibits 2-24 and 2-25).

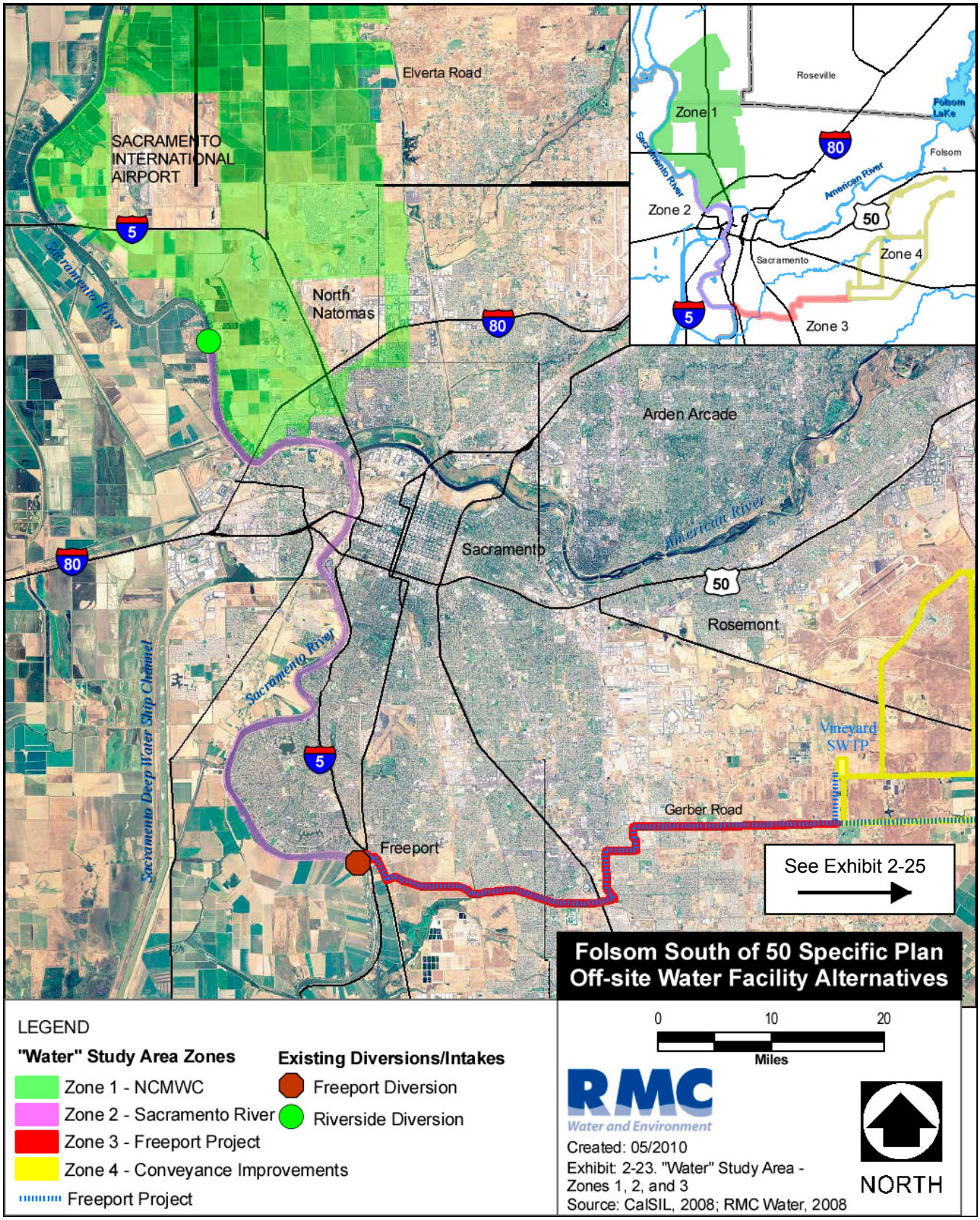
Exhibits 2-23 and 2-24 illustrate the western and eastern portions of the "Water" Study Area, respectively, which for the purposes of discussion in this EIR/EIS analysis, is divided into four smaller zones. Each of these four zones are described below:

- **Zone 1** includes the approximately 37,160-acre NCMWC service area, which depicts the northern extent of the "Water" Study Area. Zone 1 is included in the "Water" Study Area to cover potential operational changes within NCMWC's service area. No facility improvements are proposed in Zone 1 as part of the Off-site Water Facility Alternatives.

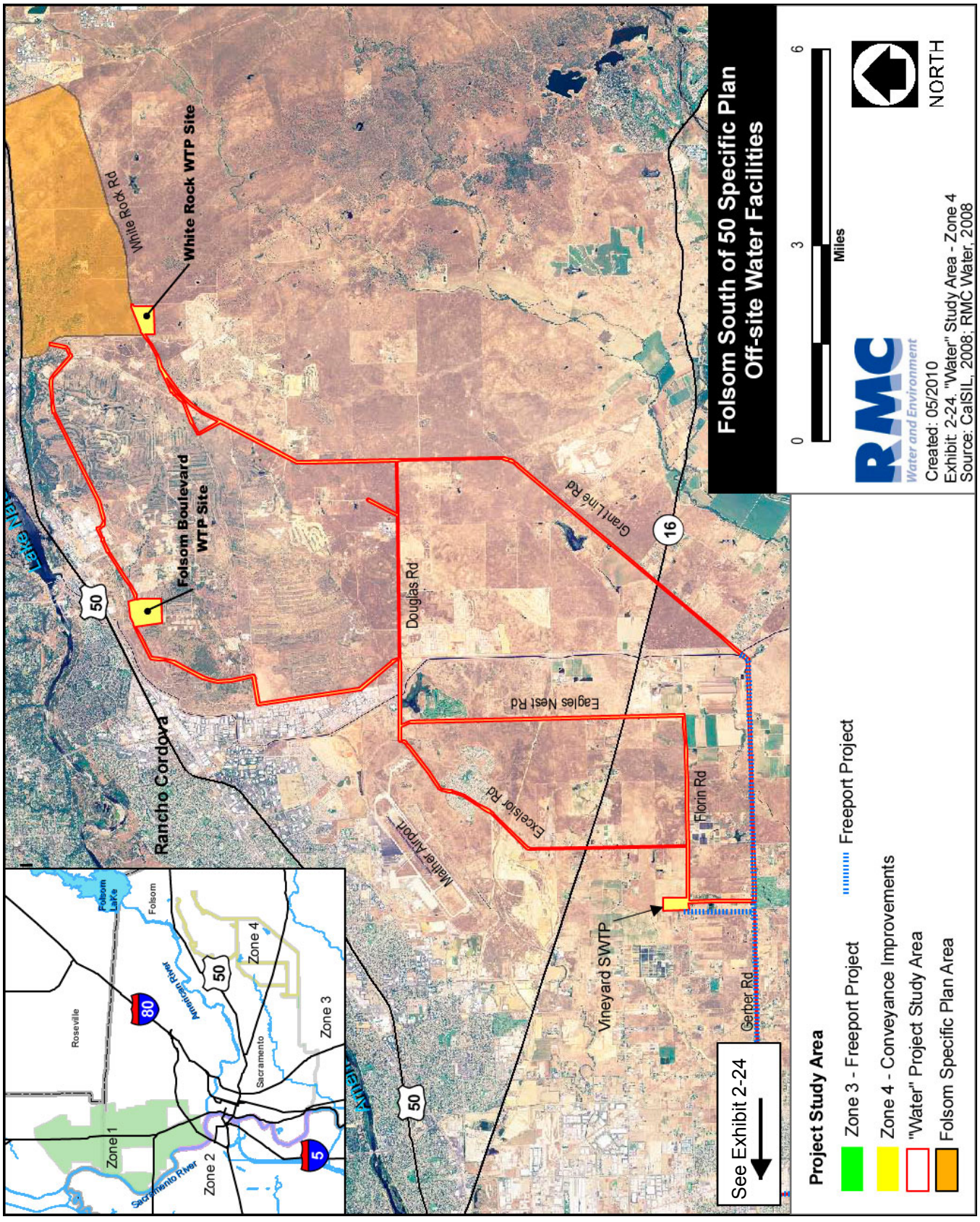
- **Zone 2** is the section of the Sacramento River between River Miles 48 and 66; an approximately 1,200-acre area. Under the "Water" project alternatives, surface water would not be diverted by the NCMWC and rather would continue to flow south along this section of the river prior to diversion at the Freeport Project intake



Regional Map and "Water" Project Concept **Exhibit 2-23**



"Water" Study Area – Zones 1, 2, and 3 **Exhibit 2-24**



"Water" Study Area – Zone 4 **Exhibit 2-25**

facility. Zone 2 is included in the "Water" Study Area to cover changes in river hydrology as a result of the Off-site Water Facility Alternatives. No facility improvements are proposed in Zone 2 as part of the Off-site Water Facility Alternatives.

- **Zone 3** corresponds with the existing Freeport Project, which encompasses an approximately 155-acre linear area. The Freeport Project begins on the eastern bank of the Sacramento River, near the Town of Freeport. As shown in Exhibit 2-25, the western extent of the Freeport Project starts in the Town of Freeport, west of Interstate 5 (I-5) and extends from the intake facility to the north on Freeport Boulevard and then east/ southeast on Meadowview Road. At the Mack/Power Inn Road intersection, the Freeport Project continues east on Elsie Road for a short distance and then north on Wilbur to the Gerber Road/Wilbur Way intersection. At Gerber Road, the Freeport Project extends east to the Folsom South Canal (FSC). Zone 3 of the "Water" Study Area is included to cover potential operational changes to the Freeport Project as a result of the Off-site Water Facility alternatives. No physical changes to Zone 3 are contemplated.

- **Zone 4** contains the new conveyance facilities that would be constructed as part of the Off-site Water Facility Alternatives, and extends from at or near the Freeport Project's bifurcation[1] point at an area that roughly corresponds with the intersection of Vineyard Road and Gerber Road on the southwest (Latitude–38° 28' 53.94" N, Longitude 121° 18' 57.82" W) to the northeast to the intersection of White Rock and Prairie City Roads on the northeast (Latitude–38° 36' 52.71" N, Longitude–121° 8' 57.97" W) (see Exhibit 2-26). Zone 4 covers a total area of approximately 1,377-acres. The "Water" Alternative conveyance routes or Off-site Water Facility Alternatives are described below in Section 2.13 of this chapter.

2.5 EXISTING AND FUTURE WATER DEMAND

Development proposed for the SPA would include up to 10,210 mixed-density residential homes (11,553 in the Reduced Hillside Development Alternative), approximately 7.4 million square feet of retail and office uses, and supporting public facilities (e.g., schools, fire stations). These uses are projected to generate a population of up to 26,544 and result in a total projected water demand estimated at 5,543 acre-feet per year (AFY), rounded up to 5,600 AFY (Tully and Young 2009). Table 2-13 provides a summary of the proposed water use within the SPA. A complete breakdown of water-unit demands and the factors used in their determination is provided Water Supply Assessment for the Folsom Specific Plan in Appendix M1.

Table 2-13
Folsom Specific Plan Estimated Water Demands

Land Use ID	Area (acres)	Dwelling Units	Indoor (Potable) – Annual Demand (AF)	Outdoor (Non-Potable) – Annual Demand (AF)	Total Demands – Annual Demand (AF)
Folsom Specific Plan Area Totals					
Total Residential	**1,510**	**10,210 (11,553)**	**1,958**	**1,610**	**3,648**
Total Nonresidential	**2,013**	--	**398**	**1,428**	**1,898**
Total	**3,510**	**10,210 (11,553)**	**2,315**	**3,038**	**5,546 (5,600)**

Notes: ID = Identification; AF = acre-feet; AFY = acre-feet per year

Complete breakdown of water demand is provided in Appendix M1.

[1] Demands are based on normal-year rainfall conditions.

[2] Normal-year demand rounded up to 5,600 AFY to account for dry-year demands (5%)

[3] 11,553 units would only be included in the Reduced Hillside Development Alternative with a corresponding reduction in outdoor water use.

Source: Tully & Young 2009

[1] The Freeport Regional Water Project provides water to both the Sacramento County Water Agency (SCWA) and East Bay Municipal Utility District (EBMUD). "Bifurcation" refers to the point in the Freeport Project where the joint facilities end and SCWA's dedicated pipeline and EBMUD's dedicated pipeline begin.

As shown in Table 2-13 the SPA includes a small area within the El Dorado Irrigation District's (EID) service area. The "Water" portion of the project includes sufficient water supplies to serve the less than 300 AFY demand within EID's service area in the SPA. In this context, this EIR/EIS assumes that the City would provide treated water to EID for service within its portion within the SPA. Further, this EIR/EIS does not address any off-site improvements required by EID to facilitate its own and separate plans for future water service within portions of the SPA that fall within EID's service area. Such facilitates could require separate environmental analyses and review once such details are available.

As part of developing the SPA's projected annual water demands, the City has also determined an average daily demand of 6.5 million gallons per day (mgd). Using a maximum-day peaking factor of 1.9 as described in Appendix M1, buildout within the SPA would result in a maximum daily demand of 9.5 mgd. A capacity of 10 mgd is assumed for the purposes of this EIR/EIS analysis to provide a conservative estimation (e.g., high) of infrastructure requirements. Based on current estimates, the City expects that peak-water demands would be experienced for a limited duration of approximately 5 days or fewer annually.

2.6 "WATER" ALTERNATIVES

The "Water" project would entail the construction and operation of one of the Off-site Water Facility Alternatives described in this section. It is important to note that each of the Off-site Water Facility Alternatives would provide a reliable long-term supply and conveyance system for any one of the "Land" alternatives. Detailed below are the descriptions of the Off-site Water Facility Alternatives that are being evaluated at an equal level of detail in this EIR/EIS, as required by NEPA. A complete listing and screening process for other water supply and conveyance alternatives considered in this EIR/EIS, but not carried forward for equal-level analysis, is described in Section 2.15 below.

Each of the Off-site Water Facility Alternatives would consist of the acquisition of not more than 8,000 AFY of CVP contract entitlement water from the NCMWC, permanent assignment of the CVP contract entitlement water to the City, and diversion of the CVP water from the Sacramento River using the existing Freeport Project intake/diversion and conveyance facilities. The City would then construct a new pipeline that would convey water from the Freeport Project to the SPA. The capacity requirements for the "Water" portion of the project assume that all demands would be met with potable water. Although non-potable water infrastructure would be required for development within the SPA, to date, a reliable source of non-potable water has not been sufficiently developed to include in this EIR/EIS analysis. Therefore, for purposes of this EIR/EIS, it is assumed that all demands within the SPA would be served with potable water until a viable non-potable source is identified and secured. As a result, additional, separate environmental analyses would be required for the implementation of a non-potable water supply program within the SPA and extension of related infrastructure, when such a supply is known and available.

2.6.1 COMPONENTS COMMON TO ALL "WATER" ALTERNATIVES

This section describes the conveyance facilities and water supply components that are common to all the Off-site Water Facility Alternatives analyzed in this EIR/EIS. These common components include the source water supply from NCMWC, integration with the Freeport Project, the need for new pumping facilities, and the provision of sufficient water treatment capacity and distribution facilities within the SPA. Additionally, each of Off-site Water Facility Alternatives assumes the absence of any non-potable supplies. These topics are described in further below.

SOURCE WATER

The City is proposing to acquire not more than 8,000 AFY of CVP contract entitlement water from the NCMWC, which would be put to beneficial use within the SPA. This water supply consists of a long-term, CVP water entitlement from the NCMWC under Contract No. 14-06-200-885A-R-1 (NCMWC CVP Contract) with the U.S.

Bureau of Reclamation (Reclamation). The City is an existing CVP contractor within the American River Unit and, upon annexation into the City, the SPA would be within the CVP water rights place of use (POU). NCMWC's CVP contract supply originates from the Shasta/Trinity River Division of the CVP and is currently diverted and applied to agricultural lands in northern Sacramento County and southern Sutter County. The project applicant(s) are proposing to enter into an agreement with the NCMWC whereby the CVP contract entitlement water would be permanently assigned to the City and this water supply would be provided by Reclamation for diversion from the Sacramento River. NCMWC's current CVP contract provides surface water during the months of July and August and includes a shortage provision of up to 25% during critically-dry years.

The City is proposing to modify the existing delivery schedule with Reclamation to a year-round municipal and industrial (M&I) schedule to allow for a more consistent diversion of 6,000 AFY of the 8,000 AFY over the course of a given year. The contract water would be made available by NCMWC reducing its surface water diversions/pumping during the irrigation season by approximately 33 to 465 cubic feet per second (cfs) at the Riverside Pumping Plant. This water supply would then remain in the Sacramento River and flow approximately 20 miles downstream for diversion by the City at the existing Freeport Project diversion facility, which is described below. This overall concept is illustrated in Exhibit 2-22.

The CVP contract supplies acquired by the City as part of the Off-site Water Facility Alternatives would more than meet demands associated with all phases of development within the SPA during normal and dry years (for information on project phasing, please refer to Section 2.3.1). This higher quantity of water is required to factor in the 25% reduction that could occur in dry years thereby reducing the quantity delivered to 6,000 AFY. This shortage provision could leave a margin of only 400 AFY between the demands of the SPA at build-out and the available surface water supply. In recognition of this surplus, which ranges from 400 AFY in dry years up to 2,400 AFY, the City intends to make these supplies available to the NCMWC for diversion for irrigation. Any additional water not required by NCMWC would be put to beneficial use according to the provisions of the CVP water service contract and Central Valley Project Improvement Act (CVPIA), House Resolution (HR) 429, Public Law 102-575.

Natomas Central Mutual Water Company

NCMWC currently serves about 33,200 acres in Sacramento and Sutter Counties. Exhibit 2-22 illustrates the boundaries of the NCMWC service area. NCMWC maintains appropriative water rights to the Sacramento River pursuant to Water Right Licenses 1050, 2814, 3109, 3110, and 9794 and Permit 19400. NCMWC and Reclamation signed Settlement Contract No. 14-06-200-885A-R-1 to address the CVP's effect on those licenses and that permit under that contract. NCMWC diverts base supply[2] and CVP water[3] from the Sacramento River. This contract is effective through March 31, 2045. This contract obligates Reclamation to deliver the base supply of 98,000 AFY and "Project Water" supply of 22,000 AFY for a combined total of 120,200 AFY.

NCMWC's Renewal Contract, among many other CVP contracts, was recently challenged in *Natural Resources Defense Council v. Kempthorne*, Case No. 05-CV-01207 (Eastern District of California). In that case, the U.S. District Court for the Eastern District of California (United States District Court) upheld NCMWC's Renewal Contract and found that Reclamation had no discretion to reduce NCMWC's water supplies in executing the Renewal Contract. NCMWC's current contract includes a shortage provision of up to 25%[4]. Given that the NCMWC's renewed CVP contract contains an up to 25% shortage provision during dry years and the fact that

[2] Base supply means the amount of water Reclamation delivers to the NCMWC, a Settlement Contractor, during the period of April through October each year, free of charge in recognition of their unquantified water rights, which existed prior to the construction of the CVP.

[3] CVP Water is subject to all requirements of the Federal Reclamation Law, including pricing regulations.

[4] The Sacramento River Index is the sum of the unimpaired runoff of four rivers: the Sacramento River above Bend Bridge near Red Bluff (Station SBB), Feather River inflow to Oroville Reservoir (station FTO), Yuba River at Smartville (Station YRS) and American River inflow to Folsom reservoir (Wtation AMF). In applying the Sacramento Valley 40-30-30 Index, a water-year with an Index equal to or less than 5.4 MAF is classified as "critical."

these supplies would be diverted north of the Sacramento-San Joaquin Delta (Delta), the City has assumed that no additional reductions in the amount of water delivered would occur even with factoring in climate change. A study prepared by Wagner and Bonsignore (2007) indicates that based on existing 2007 cropping patterns within NCMWC's service area, NCMWC has sufficient surface water supplies to transfer up to 8,000 AFY without adversely affecting NCMWC's ability to meet irrigation demands with surface water. Based on this finding, it is reasonable to expect that no supplemental groundwater pumping would be required by landowners within the NCMWC to augment the surface supplies assigned to the City. The complete Wagner and Bonsignore report is included in Appendix M2 of this EIR/EIS for further reference.

Integration with Freeport Project Facilities

The City has identified the existing Freeport Project as the proposed point of diversion (POD) on the Sacramento River for the Off-site Water Facility Alternatives. The Freeport Project is a facility jointly owned by Sacramento County Water Agency (SCWA) and the East Bay Municipal Utilities District (EBMUD) and is permitted to divert and convey up to 185 mgd of surface water to their respective service areas. SCWA has a dedicated capacity within the Freeport Project of 85 mgd with EBMUD owning the remaining 100 mgd of capacity. The City and SCWA have entered into a MOU (See Appendix M3) for the City to acquire the right to use 6.5 mgd on average of dedicated capacity in the SCWA's 85 mgd portion of the Freeport Project. This MOU would also allow for additional capacity to accommodate limited peaking conditions. To provide a basis for the assessment of worst-case conditions, the analysis provided in this EIR/EIS assumes peaking operations of up to 10 mgd.

As part of the Off-site Water Facility Alternatives and pursuant to Section 4.3 of the Second Amended Joint Exercise of Powers Agreement Concerning the Freeport Regional Water Authority, the City would enter into an Agreement for Delivery of Water (Delivery Agreement) with SCWA for the right to use up to an average of 6.5 mgd of SCWA's Freeport Project dedicated capacity. Under the Delivery Agreement, SCWA would wheel[5] the NCMWC's CVP contract supplies from the Sacramento River through the Freeport Project and to the bifurcation point where SCWA's and EBMUD's joint facilities end. Of the Freeport Project's major facilities, the Off-site Water Facility Alternatives would use capacity within one or more of the following:

- Freeport Intake Facility – The intake facility is located near the Town of Freeport. It includes a pumping plant that contains eight separate pumps capable of diverting water from a well located behind a 180-foot long fish screen, designed to comply with criteria developed by the California Department of Fish and Game (DFG) and NMFS in order to allow migrating Delta smelt, Chinook salmon, steelhead, and other native fish species to pass by the intake diversion without the risk of entrainment. The intake facility connects to a pipeline that conveys water to SCWA and EBMUD; and

- Raw Water Pipelines – Raw water pipelines carrying water from the intake facility to the Vineyard Surface WTP (SWTP) or FSC:

    - Pipeline Segments 1 and 2, 185 mgd capacity (84-inch) pipelines from the intake facility to the turnout to the Zone 40 Surface WTP or bifurcation,

    - Pipeline Segment 4, an 85 mgd capacity (66-inch) pipeline from the bifurcation to the Vineyard SWTP.

The EIR/EIS for the Freeport Project (see Section 1.9) analyzed impacts associated with the construction and operation of the Sacramento River diversion/intake structure and associated raw or untreated water conveyance pipelines. The Freeport Project EIR/EIS is incorporated by reference into this EIR/EIS (see Section 1.9) and documents the environmental effects of diverting of up to 185 mgd (or 568 AF) of surface water from the Sacramento River during all river hydraulic conditions. Pursuant to State Water Resources Control Board (SWRCB) Application No. 30454, SCWA's total diversions at Freeport are permitted for up to 286 cfs, but not to exceed 71,000 AFY. On average, however, SCWA's diversions are initially estimated more on the order of

[5] "Wheeling" is the transmission of water owned by one entity through the facilities owned by another.

21,700 AFY in 2010. The Off-site Water Facilities would operate within SCWA's permitted diversion rates and would not require any increase in the Freeport Project's currently permitted diversion capacity. For this reason, no physical changes to the Freeport Project's diversion and pump structure and conveyance pipeline are contemplated as part of the "Water" portion of the project.

Pump Station

One raw or treated-water booster pumping station would need to be constructed at the City's Off-site Water Facility's connection with the Freeport Project to provide sufficient operating pressure within the transmission main. Under a treated-water transmission main scenario, the connection point would occur at the Vineyard SWTP, some point along SCWA's proposed North Service Area (NSA) pipeline, or the existing Douglas Treated-Water Storage Tanks (Douglas Tanks) within the North Douglas II development. The pumping station would consist of a concrete facility that would operate via electricity. The ultimate horsepower (HP) requirements are currently estimated at 1700 HP for the longest routes. The number and type of pumps will depend on detailed design criteria, which is currently unavailable. At times, the pumps may operate 24-hours a day, seven days a week. The pump station structure(s) would be designed so that additional pumps can be installed. A standby generator would be installed in an enclosure to operate up to two pumps during a power outage. At this time, a precise location for the pump station has not been selected. However, the City anticipates that this facility would be in close proximity to the associated connection point to the Freeport Project facilities under of the Off-site Water Facility Alternatives.

Water Treatment and Treated-Water Transmission Facilities

Water treatment would be provided for the Off-site Water Facilities through the construction of a new Water Treatment Plant (WTP) or the purchasing of capacity within SCWA's Vineyard SWTP. Details regarding these water treatment options are provided under the respective Off-site Water Facility Alternatives for which they would be developed. In relation to the construction of new water treatment facilities, two alternative site locations have been identified outside the SPA as part of the City's preliminary investigation and analyzed in separate alternatives. In addition to these two off-site locations, there continues to be a potential for the WTP to be constructed within the SPA. If located within the SPA, the On-site WTP would be constructed at a location immediately northeast of the intersection of Oak Avenue and Street "A" (see Exhibit 2-7). Environmental effects resulting from new development within the SPA are analyzed in the "Land" sections of Chapter 3 of this EIR/EIS. At the time of writing this EIR/EIS, the City is considering a range of treatment options ranging from conventional to advanced treatment. Additionally, the exact placement of the WTP on each of the off-site properties under consideration has not been determined and, therefore, the City has considered full-build-out of either WTP site as part of its analysis.

Depending on the conveyance alignment and WTP site location ultimately chosen, the Off-site Water Facilities would enter the SPA along Prairie City Road either from White Rock Road to the south or from an unnamed, dirt road that bisects the northern section of the Aerojet property, immediately west of the SPA and south of U.S. 50. This existing dirt roadway corresponds with the planned alignment for the Easton Valley Parkway. The treated-water transmission infrastructure proposed for areas within the SPA is described in the "Land" sections of this EIR/EIS.

Non-Potable Water Facilities

The proposed Folsom Specific Plan includes policies that encourage the installation of non-potable water infrastructure for new development within the SPA (see Section 12.5). In conjunction with the "Water" portion of the project, the City is actively seeking sources of non-potable water supplies for use in non-potable applications (i.e., landscape irrigation) within the SPA. Potential sources of non-potable water include local groundwater, recycled water from EID, and/or treated groundwater from Aerojet, among others. However, at the time of the preparation of this EIR/EIS, details regarding these sources and any associated facilities are insufficient to

facilitate analysis within this EIR/EIS. The City expects to prepare separate, subsequent environmental documentation for actions and improvements associated with future non-potable water improvements for the SPA.

2.6.2 Proposed Off-site Water Facility Alternative – Gerber/Grant Line Road Alignment and On-site WTP

Under the Proposed Off-site Water Facility Alternative, the City would integrate its water supply conveyance facilities with SCWA by purchasing an average of 6.5 mgd, plus an appropriate peaking factor, of dedicated capacity within the Freeport Project and wheeling raw water through Pipeline Segments 1 and 2 of the Freeport Project. As previously indicated and for purposes of analyses, the City has assumed that this capacity could be temporarily increased up to 10 mgd to accommodate periods of peak demands.

Under the Proposed Off-site Water Facility Alternative, the City would construct a new 30-inch, raw-water conveyance pipeline that would connect with the pump station located in an area just northeast of the bifurcation. As shown in Exhibit 2-25, the raw-water pipeline would extend northeast approximately 16.5 miles from the bifurcation to the SPA. This pipeline length would result in a corridor under consideration of approximately 401-acres. An exact alignment has not been selected and, therefore, this alternative considers a 200-foot-wide corridor or a 100-foot-wide buffer off the roadway centerline along the alignment as shown in Exhibit 2-26. In reality, a temporary construction easement would be more on the order of 60 feet with a permanent easement of approximately 10 feet to facilitate access by maintenance vehicles. Construction of the pipeline may involve two methods of pipeline construction: open-cut trenching and trenchless construction. Trenchless construction could be used to traverse creeks or waterways, drainages, major roadway intersections, or railroad rights-of-way.

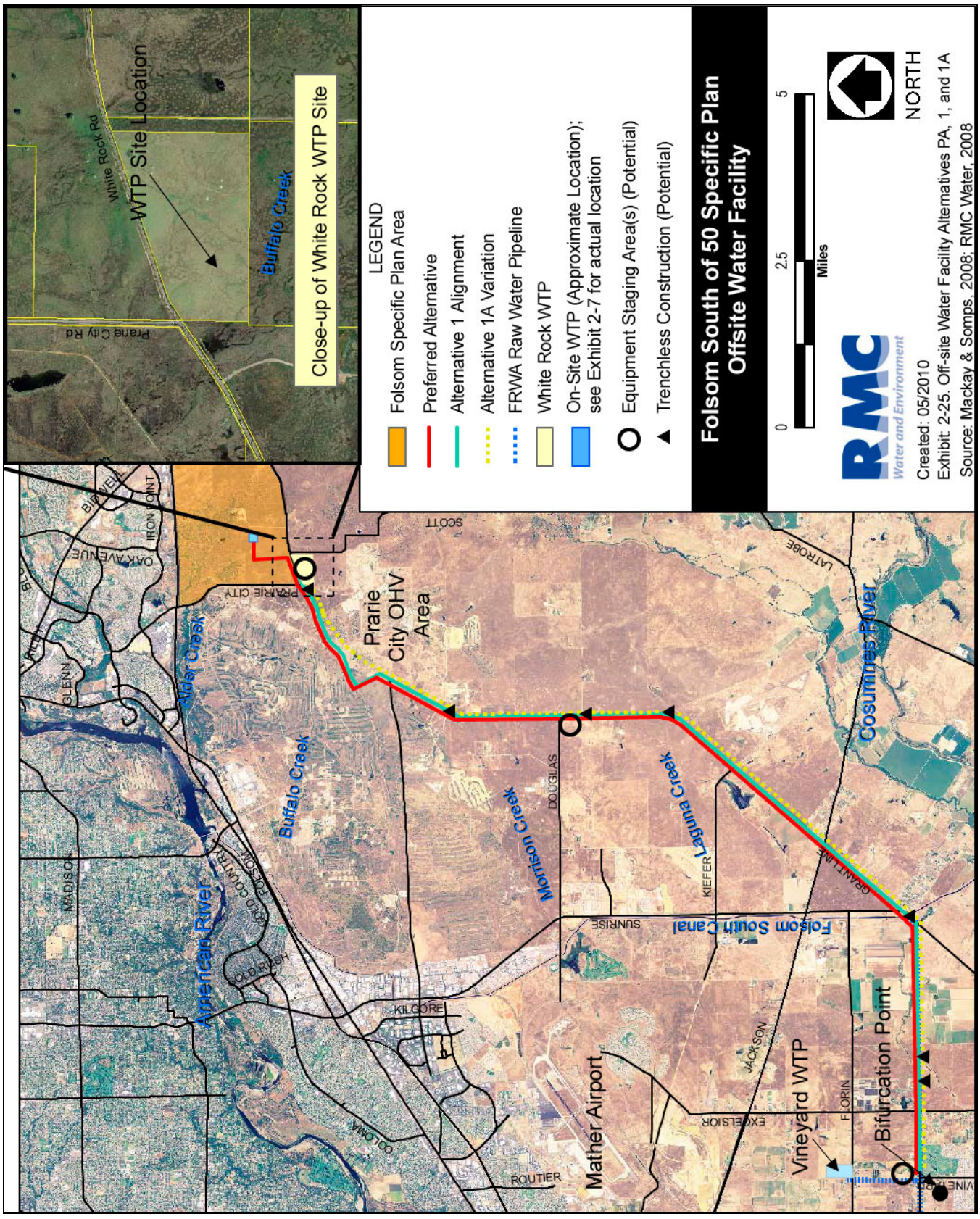
Near the bifurcation, at the intersection of Vineyard and Gerber Roads, the City would construct a 10-mgd capacity, raw water pump station to create the necessary operating pressure within the conveyance pipeline. As previously indicated, the pump station would operate on electricity with a total rated capacity of 1,700 HP. From the pump station, the conveyance pipeline under this alternative would parallel Pipeline Segment 4 of the Freeport Project along Gerber Road to Excelsior Road and from there traverse cross country to the FSC. The pipeline would then cross the FSC where it would intersect with Grant Line Road. The method of crossing the FSC will be determined in coordination with Reclamation. At Grant Line Road, the conveyance pipeline would transition to the north before intersecting White Rock Road. Once on White Rock Road, the alignment follows the roadway east to a newly constructed extension of Oak Avenue. At Oak Avenue, the conveyance pipeline would extend into the SPA to a new, approximately 10-acre On-site WTP.

The On-site WTP would be constructed within the SPA at the approximate location shown in Exhibits 2-7 and 2-26. A treated-water main would be constructed from the On-site WTP to connect with the backbone water infrastructure within the SPA. Under this alternative, the On-site WTP would have an ultimate capacity of approximately 10 mgd.

Water Treatment Processes. The WTP would use conventional and/or advanced treatment technologies to treat water supplies from the Sacramento River that meet the drinking water quality objectives specified in Title 22 of the California Code of Regulations. These regulations specify drinking water quality standards (e.g., maximum contaminant levels (MCLs) for biological contaminants, disinfection by-products, lead, copper, radioactivity, and inorganic and organic chemicals (e.g., pesticides and herbicides). In addition, a residual disinfectant level would be maintained in the water supply to insure that the water remains free of pathogens. The residual disinfection level would be maintained in compliance with applicable drinking water regulations.

The following components may be used at the WTP:

- chemical oxidation system;
- rapid mixing system;



Proposed Off-site Water Facility and Off-site Water Facility Alternatives 1 and 1A **Exhibit 2-26**

- pre-treatment system (flocculation/sedimentation);
- filtration system;
- chemical storage and feed systems;
- filter backwash water supply system;
- wash-water recovery and sludge thickening system;
- sludge dewatering system;
- operations and maintenance building;
- site electrical and control systems improvements; and
- site/civil improvements.

Exhibit 2-27 shows a conceptual layout of the On-site WTP facility, including anticipated major physical features. The WTP facilities would be constructed of concrete and the exterior painted. The grit basins, flow split, flocculation and sedimentation basins, filters, equalization basins, and backwash clarification would be open-water areas. Membrane filtration may be considered as an alternative to the conventional treatment process. The administration/operations building, maintenance building, chemical building, electrical building, and treated water pump station(s) would be enclosed structures, constructed of concrete masonry units or steel. Buildings would be faced with materials such as stucco or split-face block. Steel structures would be painted to blend with the existing environment.

Most WTP staff would be on site during typical working hours, 7:00 am to 5:00 pm. Staffing levels and operator qualifications would comply with applicable regulatory requirements.

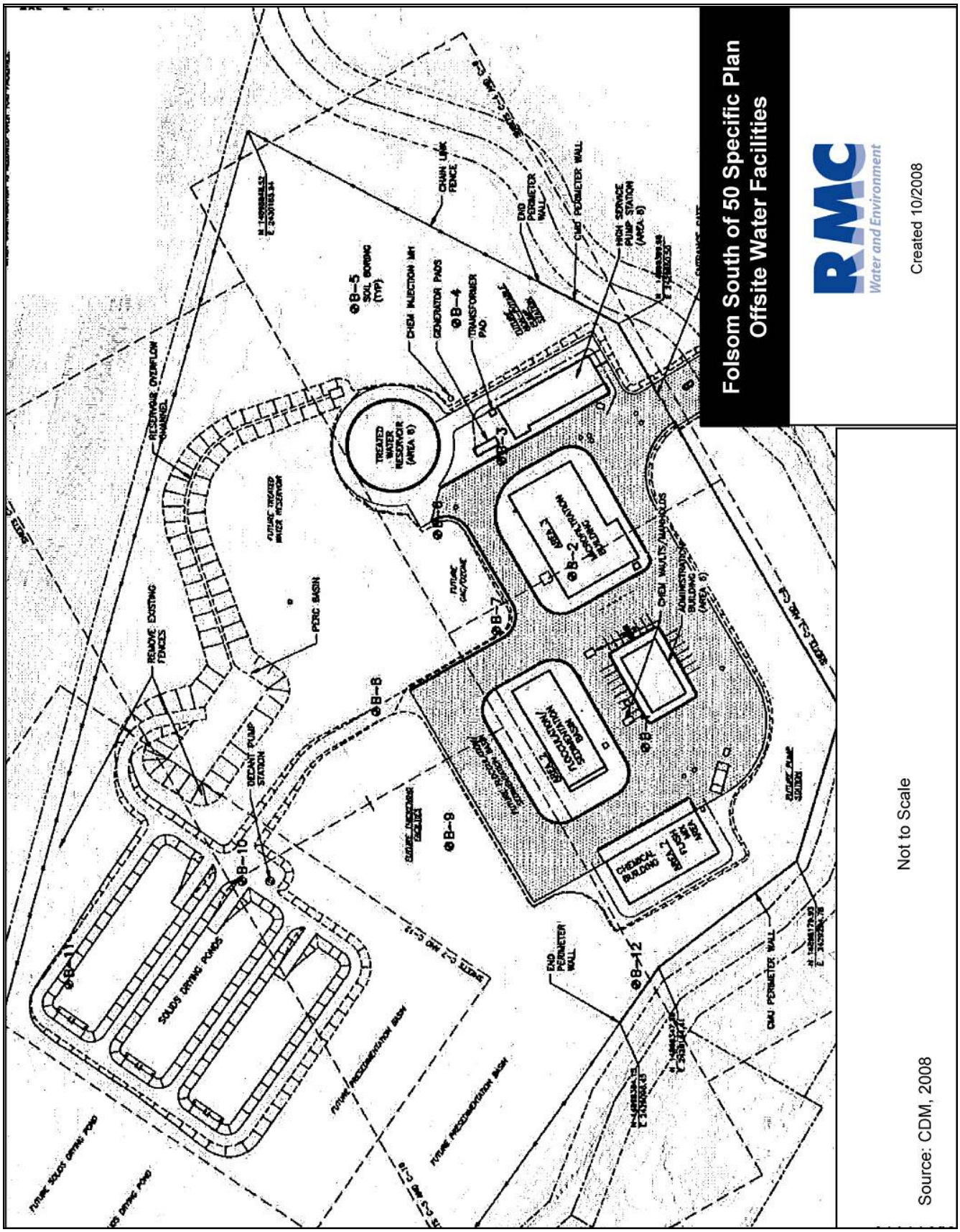
Waste from the water treatment process would include grit from the grit basins, sludge removed from the sedimentation basins, filter backwash water, filter-to-waste water, sampling water, and sludge lagoon decant water. This waste would be treated with a polymer and then stored in an equalization basin. Solids from the grit and equalization basins and sludge from the sedimentation basin would be sent to sludge lagoons for drying. Lagoons would be constructed to allow for cycling and settling periods. Dried sludge would be transported to a locally-certified landfill or other suitable location for ultimate disposal. The lagoons would be routinely cleaned, and the dried sludge removed as needed.

Chemicals anticipated that would be stored and used at the WTP are identified in Table 2-15.

Table 2-15
Water Treatment Chemical Use and Storage

Chemical	Purpose	Form	Estimated Storage Quantity
Aluminum sulfate (Alum)	Coagulation	Liquid	< 20,000 gallons
Cationic polymer	Coagulation aid	Liquid	< 300 gallons
Sodium hydroxide	Neutralizing agent	Liquid	< 3,000 gallons
Anionic polymer/ non-Ionic polymer	Flocculation aid and filter aid	Solid or Liquid	< 6,000 pounds
Activated carbon	Taste and odor, organic control	Solid	< 40,000 pounds
32+ 1 Sodium hypochlorite	Disinfection residual	Liquid	< 10,000 gallons
Citric acid	Membrane cleaning	Liquid	< 400 gallons
Sodium bisulfite	Membrane cleaning	Liquid	< 100 gallons
Oxygen		Liquid	< 5,000 gallons

Source: RMC Water and Environment 2010



Conceptual Water Treatment Plant Layout **Exhibit 2-27**

2.6.3 No USACE Permit Off-Site Water Facility Alternative

The No USACE Permit Off-site Water Facility Alternative would involve the same facilities described under the Proposed Off-site Water Facility Alternative above, and the conveyance pipeline would follow a similar route. However, the No USACE Permit Off-site Water Facility Alternative would avoid all direct impacts (i.e., fill) of waters of the U.S., which include wetlands, through the incorporation of trenchless construction technologies. Construction staging areas and the entry/exits for all trenchless construction activities would also be sited within non-sensitive areas and a minimum of 50 feet from waters of the U.S. At each location where trenchless construction would occur, the City would use a single or combination of trenchless technologies, including but not limited to, microtunneling, horizontal directional drilling (HDD), or jack-in-bore, to avoid these jurisdictional features. The new water treatment plant, regardless of its location, would not be placed within 50 feet of any waters of the U.S., including wetlands. Similar to the other "Water" Alternatives, all construction activities would occur within the 200-foot corridor under consideration for northeastern portions of Zone 4 of the "Water" Study Area.

2.6.4 Off-site Water Facility Alternative 1. Raw Water Conveyance – Gerber/Grant Line Road Alignment and White Rock WTP

Under Off-site Water Facility Alternative 1, the City would construct facilities similar to those proposed under the Proposed Off-site Water Facility Alternative and described in Section 2.13.3. The City would integrate its water supply conveyance facilities with the Freeport Project and wheel raw water through Pipeline Segments 1 and 2 of the Freeport Project. Under Off-site Water Facility Alternative 1, the City would construct a new 30-inch, raw-water conveyance pipeline that would connect with the pump station located in an area just northeast of the bifurcation. As shown in Exhibit 2-26, the raw-water pipeline would extend northeast approximately 15.3 miles from the bifurcation to a new WTP south of the SPA. This pipeline length would result in a corridor under consideration of approximately 372 acres. Similar to the Proposed Off-site Water Facility Alternative, an exact alignment has not been selected for this alternative and, therefore, this alternative considers a 200-foot-wide corridor or a 100-foot-wide buffer off the roadway centerline along the alignment as shown in Exhibit 2-26.

Similar to the Proposed Off-site Water Facility Alternative, a 10-mgd capacity, raw water pump station would be constructed near the Freeport Project bifurcation and would include a rated horsepower of 1,700 HP. From the pump station, the conveyance pipeline under this alternative would follow the same alignment as the Preferred Alternative up to a new WTP located southeast of the intersection of White Rock Road and Prairie City Road, at a City-proposed Corporation Yard. The White Rock WTP would be constructed on a 10-acre portion of a 68-acre parcel, Assessor's Parcel Number (APN) 072-006-0052, and to the south of the City's proposed Corporation Yard. A treated-water main would be constructed from the White Rock WTP to connect with the backbone water infrastructure within the SPA. Under this alternative, the White Rock WTP would have an ultimate capacity of approximately 10 mgd.

Treatment process and facilities under this alternative would be similar to those described for the Proposed Off-site Water Facility Alternative. At this time, the City has not determined whether it would annex the WTP site into its jurisdiction or whether it would seek development entitlements through Sacramento County and, therefore, the environmental analysis considers both options.

2.6.5 Off-site Water Facility Alternative 1A. Raw Water Conveyance – Gerber/Grant Line Road Alignment Variation and White Rock WTP

Off-site Water Facility Alternative 1A consists of a variation in the conveyance pipeline alignment for Off-site Water Facility Alternative 1. All other features of this alternative, including the WTP and pump station, would be similar to that of Off-site Water Facility Alternative 1. As shown in Exhibit 2-26, Off-site Water Facility Alternative 1A would realign the conveyance pipeline alignment so that it deviates from White Rock Road prior

to the first curve north of the intersection of White Rock Road and Grant Line Road (see Exhibit 2-26). The pipeline would travel north-northeast along a property line boundary, prior to re-intersecting with the Off-site Water Facility Alternative 1 alignment on the current White Rock Road right-of-way. Off-site Water Facility Alternative 1A would reduce the length of pipeline by approximately a quarter of a mile when compared to Off-site Water Facility Alternative 1. This pipeline length of 15.2 miles would result in a corridor under consideration of approximately 364 acres. Similar to the Proposed Off-site Water Facility Alternative, an exact alignment has not been selected for this alternative and, therefore, this alternative considers a 200-foot-wide corridor or a 100-foot-wide buffer off the roadway centerline along the alignment as shown in Exhibit 2-26.

2.6.6 Off-site Water Facility Alternative 2. Treated Water Conveyance – Douglas Road Alignment and Vineyard SWTP

Under Off-site Water Facility Alternative 2, the City would purchase 6.5 mgd, on average, of capacity within the Freeport Project and Vineyard SWTP[6]. This capacity would be augmented with additional peaking capacity of up to 10 mgd within the Freeport Project and Vineyard SWTP, which is located on an 80-acre site on Florin Road between Bradshaw and Excelsior Roads, instead of constructing a new WTP. SCWA is nearing the completion of the Vineyard SWTP, which is initially designed to treat up to 50 mgd for SCWA's Zone 40 Northern Service Area, and expected to start operation in fall 2011.

In addition to purchasing capacity within the Vineyard SWTP, this alternative would involve the construction of a new pumping facility and treated-water conveyance pipeline approximately 17.4 miles in length. This pipeline length results in a corridor under consideration of approximately 423 acres. Similar to the Proposed Off-site Water Facility Alternative, an exact alignment has not been selected for this alternative and, therefore, this alternative considers a 200-foot-wide corridor or a 100-foot-wide buffer off the roadway centerline along the alignment as shown in Exhibit 2-28. The pumping facility would be constructed according to the parameters identified for the Proposed Off-site Water Facility Alternative and located on-site at the Vineyard SWTP. The electrical load requirements for the pumping facility under this alternative would be slightly less than Off-site Water Facility Alternative 1 and are currently estimated at 1,670 HP.

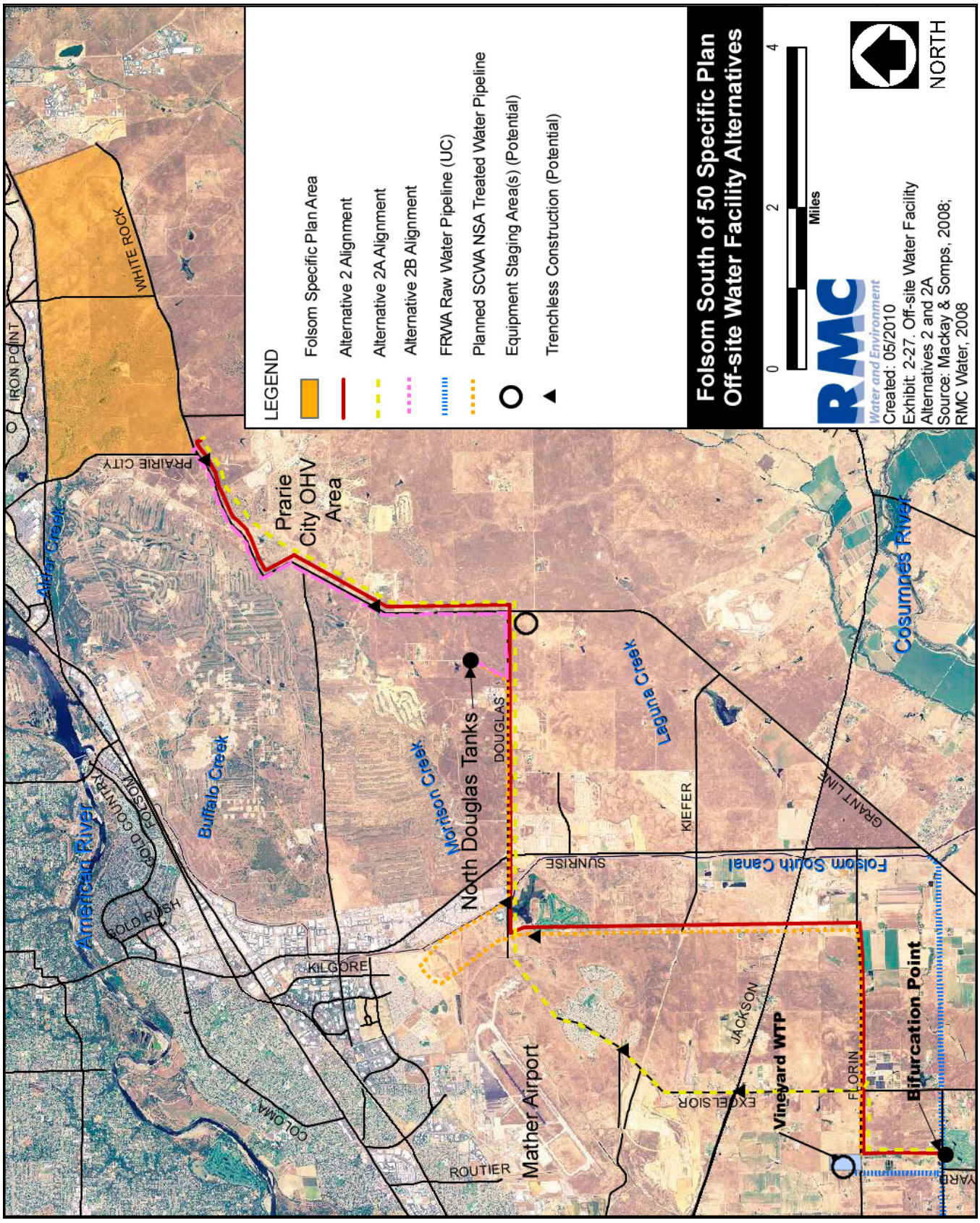
From the Vineyard SWTP, the alignment would extend from Florin Road east to Eagles Nest Road, at which point, the alignment would extend north to Douglas Road (see Exhibit 2-28). Once at Grant Line road, the alignment would follow the same route as Off-site Water Facility Alternative 1. At the terminus of the conveyance alignment, this alternative would connect to new equalization facilities sited within the SPA instead of a new WTP as described for Off-site Water Facility Alternative 1. The equalization facilities are described below.

Equalization Facilities

As part of Off-site Water Facility Alternative 2, the City may construct a 4-million-gallon (MG) ground-based storage tank within the SPA and an associated pumping station on approximately 1-acre. The equalization tanks would be sited with the storage tanks identified to the northeast of the intersection of Road A and Oak Avenue within the SPA (see Exhibit 2-7) and would consist of pre-stressed concrete similar to existing City-owned tanks. The tank height would be no more than three stories or approximately 30 feet.

Pumping and backup power generation would be part of the on-site water distribution infrastructure constructed in conjunction with new development within the SPA. Chemical re-treatment facilities may also be constructed, if determined necessary. To achieve the tank foundation elevation, the existing ground surface at the site may

[6] For the purposes of differentiating between the City's proposed WTP under several of the Off-site Water Facility Alternatives and SCWA's existing Vineyard SWTP, separate acronyms are used to clearly distinguish between these facilities.



Off-site Water Facility Alternatives 2, 2A, and 2B **Exhibit 2-28**

require excavations of up to 10 feet beneath the ground surface. The exterior wall facing would be painted or other architectural treatment administered as desired for aesthetic purposes.

2.6.7 Off-site Water Facility Alternative 2A. Treated Water Conveyance – Excelsior Road Alignment Variation and Vineyard SWTP

Off-site Water Facility Alternative 2A involves a variation in the conveyance route alignment for Off-site Water Facility Alternative 2 (see Exhibit 2-28). All other features associated within this alternative would be the same as Off-site Water Facility Alternative 2. Under Off-site Water Facility Alternative 2A, the conveyance pipeline alignment would deviate from the Off-site Water Facility Alternative 2 route at the intersection of Florin and Excelsior Roads and travel north along Excelsior Road to Mather Boulevard. At the intersection with Douglas Road, this alignment would travel back to the east and follow the Off-site Water Facility Alternative 2 alignment east to Grant Line Road where it would then travel north to White Rock Road. Unlike Off-site Water Facility Alternative 2, this alternative would follow the Off-site Water Facility Alternative 1A alignment north of the intersection of Grant Line Road and White Rock Road and follow it to the SPA where it would directly connect with the equalization facility. The length of this alignment would be approximately 16.3 miles thereby resulting in a corridor under consideration of approximately 390 acres. Similar to the Proposed Off-site Water Facility Alternative, an exact alignment has not been selected for this alternative and, therefore, this alternative considers a 200-foot-wide corridor or a 100-foot-wide buffer off the roadway centerline along the alignment as shown in Exhibit 2-28.

Equalization facilities constructed under this alternative would be similar to those described for Off-site Water Facility Alternative 2.

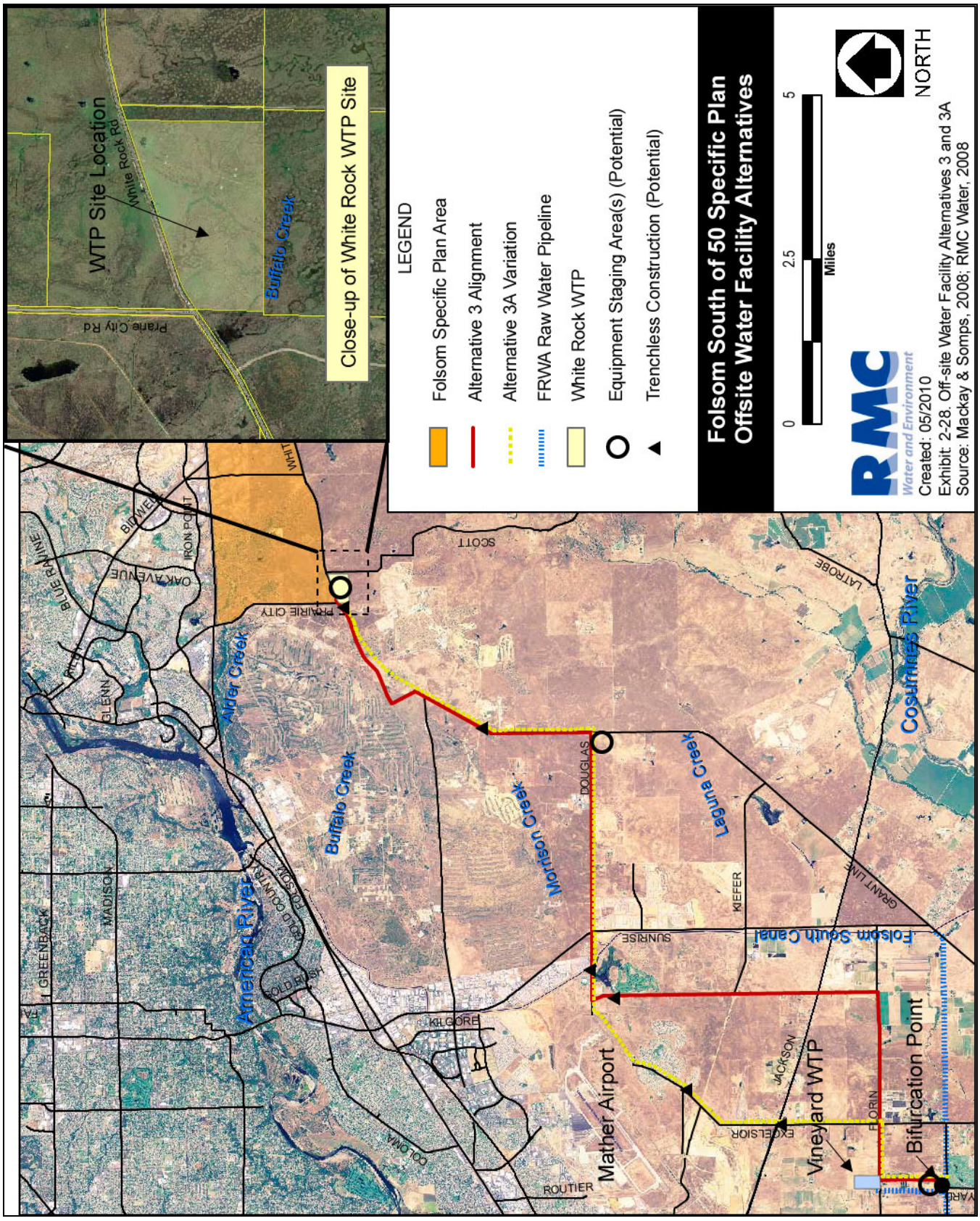
2.6.8 Off-site Water Facility Alternative 2B. Treated Water Conveyance – North Douglas Tanks Variation and Vineyard SWTP

Off-site Water Facility Alternative 2B involves a shortened variation in the conveyance alignment as described for Off-site Water Facility Alternative 2 and would connect to the North Douglas Water Tanks (North Douglas Tanks), which were constructed by SCWA to serve areas within Sunrise Douglas Community Plan area, and extend south along Ivan Way to Douglas Road (see Exhibit 2-28). The alignment would then follow the same route as Off-site Water Facility Alternative 2 to the SPA. All other features associated with this alternative would be the similar to those described for Off-site Water Facility Alternative 2 with treatment provided at the Vineyard SWTP and equalization facilities within the SPA. By constructing the conveyance alignment from the North Douglas Tanks, the length of the pipeline is reduced to approximately 6 miles, thereby resulting in a corridor under consideration of approximately 157 acres. Similar to the Proposed Off-site Water Facility Alternative, an exact alignment has not been selected for this alternative and, therefore, this alternative considers a 200-foot-wide corridor or a 100-foot-wide buffer off the roadway centerline along the alignment as shown in Exhibit 2-28.

Under this alternative, construction of the pumping facility would occur according to the parameters identified for Off-site Water Facility Alternative 1 and located on the existing North Douglas Tanks site. The electrical load requirements for the pumping facility under this alternative are currently estimated at 1,100 HP. Similar to Off-site Water Facility Alternative 2, the conveyance alignment under this alternative would directly connect with the Equalization Tanks within the specific land area.

2.6.9 Off-site Water Facility Alternative 3. Treated Water Conveyance – North Douglas Tanks Variation and Vineyard SWTP

Off-site Water Facility Alternative 3 involves the construction of a raw-water conveyance pipeline from the bifurcation point to the White Rock WTP site south of the intersection of White Rock and Prairie City Roads. As shown in Exhibit 2-29, the Off-site Water Facility Alternative 3 raw water conveyance alignment would



Off-site Water Facility Alternatives 3 and 3A **Exhibit 2-29**

follow the same alignment as described for the treated-water pipeline in Off-site Water Facility Alternative 2. This would result in a pipeline length of 17.4 miles and a corridor under consideration of approximately 423 acres. Similar to the Proposed Off-site Water Facility Alternative, an exact alignment has not been selected for this alternative and, therefore, this alternative considers a 200-foot-wide corridor or a 100-foot-wide buffer off the roadway centerline along the alignment as shown in Exhibit 2-29.

The pump station would be constructed at the same site location and according to the same parameters as identified for Off-site Water Facility Alternative 1. The main difference under Off-site Water Facility Alternative 3 would be that, rather than connecting directly to the equalization facilities within the SPA, this alternative would involve the construction of a new, 10-acre White Rock WTP at the same location as described in Off-site Water Facility Alternative 1. The treatment process under this alternative would be the same as those described for Off-site Water Facility Alternative 1. In addition, similar to Off-site Water Facility Alternative 1, a new treated water pipeline would be constructed from the WTP, which would connect with water backbone infrastructure within the SPA.

2.6.10 Off-site Water Facility Alternative 3A. Raw Water Conveyance – Excelsior Road Alignment Variation and White Rock WTP

Off-site Water Facility Alternative 3A is only differentiated from Off-site Water Facility Alternative 3 by an alternate raw-water conveyance alignment (see Exhibit 2-29). The main difference under this alternative would be that the raw water conveyance alignment would follow the same alignment as described for Off-site Water Facility Alternative 2A. Under this alternative, the City would construct a new, 10-acre White Rock WTP, similar to that described for Off-site Water Facility Alternative 1. This would result in a pipeline length of 16.3 miles and a corridor under consideration of approximately 389 acres. Similar to the Proposed Off-site Water Facility Alternative, an exact alignment has not been selected for this alternative and, therefore, this alternative considers a 200-foot-wide corridor or 100-foot-wide buffer off the roadway centerline along the alignment as shown in Exhibit 2-29.

2.6.11 Off-site Water Facility Alternative 4. Raw Water Conveyance – Easton Valley Parkway Alignment and Folsom Boulevard WTP

Off-site Water Facility Alternative 4 would entail the construction of a raw water conveyance pipeline from the bifurcation pump station north to a new WTP located south of Folsom Boulevard – or the Folsom Boulevard WTP – and east of Sunrise Boulevard (see Exhibit 2-30). The raw-water pump station would be constructed according to the same parameters as described for the Proposed Off-site Water Facility Alternative. This would result in a total pipeline length of 19.4 miles and a corridor under consideration of approximately 469.6 acres. Similar to the Proposed Off-site Water Facility Alternative, an exact alignment has not been selected for this alternative and, therefore, this alternative considers a 200-foot-wide corridor or 100-foot-wide buffer off the roadway centerline along the alignment as shown in Exhibit 2-30.

The raw water pipeline would follow the same alignment as Off-site Water Facility Alternative 3 alignment north to Douglas Road and travel east. Along Douglas Road, the Off-site Water Facility Alternative 4 alignment would deviate from Off-site Water Facility Alternative 3 and transition back to the north at Sunrise Boulevard. From Sunrise Boulevard, the alignment extends north in a cross-country alignment along the western boundary of the Rio del Oro Specific Plan area to White Rock Road. At White Rock Road, the alignment would travel east for a short distance to the southwestern corner of the Aerojet Property (see Exhibit 2-30). The alignment is currently planned to conform to the planned Rancho Cordova Parkway, which will serve as main arterial roadway through the proposed Westborough at Easton project.

Just south of the FSC, the raw water conveyance pipeline would turn back to the east along an existing dirt road to the Folsom Boulevard WTP. Under this alternative, the City would construct the Folsom Boulevard WTP with an

Off-site Water Facility Alternatives 4 and 4A **Exhibit 2-30**

ultimate capacity of approximately 10 mgd on a 10-acre portion of a 118-acre parcel (APN 072-025-1075) south of Folsom Boulevard. Water treatment processes proposed under this alternative would be the same as those described for the Proposed Off-site Water Facility Alternative and illustrated in Exhibit 2-27. At this time, the City has not determined whether it would annex the WTP site into its jurisdiction or whether it would seek development entitlements through the City of Rancho Cordova or Sacramento County depending on timing and, therefore, the environmental analysis considers both options.

From the Folsom Boulevard WTP, the City would construct a new treated-water conveyance pipeline that would travel east along an existing dirt road south of Folsom Boulevard (see Exhibit 2-30). The treated water alignment would follow the existing dirt road, which parallels U.S. 50 to the south, to Prairie City Road. At Prairie City Road, the treated-water alignment would connect with an equalization facility or directly with water backbone infrastructure within the SPA. The existing direct road conforms to the planned roadway alignment for the Easton Valley Parkway.

2.6.12 Off-site Water Facility Alternative 4A. Raw Water Conveyance – Easton Valley Parkway Alignment Variation and Folsom Boulevard WTP

Alternative 4A would include a minor variation to the raw-water pipeline route described for Off-site Water Facility Alternative 4 (see Exhibit 2-30). Similar to Off-site Water Facility Alternative 3A, this alternative would deviate from the Off-site Water Facility Alternative 4 route at the intersection of Florin and Excelsior Roads and travel north along Excelsior Road and Mather Boulevard. At the intersection with Douglas Road, this alignment would travel back to the east and rejoin the Off-site Water Facility Alternative 4 raw-water alignment east of Eagles Nest Road. The remainder of this alignment and the associated facilities would be identical to those described for Off-site Water Facility Alternative 4. This would result in a total pipeline length of 18.3 miles and a corridor under consideration of approximately 444 acres. Similar to the Proposed Off-site Water Facility Alternative, an exact alignment has not been selected for this alternative and, therefore, this alternative considers a 200-foot-wide corridor or a 100-foot-wide buffer off the roadway centerline along the alignment as shown in Exhibit 2-30.

2.7 Construction of Off-site Water Facility Alternatives

Construction of the selected Off-site Water Facility Alternative would begin in early 2011 (assuming receipt of all environmental clearances, permits, and approvals) with construction of the water treatment facilities starting shortly thereafter. Pipeline construction rates would vary, but would progress at a rate of approximately 200 to600 feet per day. With the inclusion of a WTP, the duration of construction is anticipated to last up to 30 months or through mid- to late-2013.

2.7.1 Treated and Raw Surface Water Conveyance Pipelines

Excavating and installing the untreated and treated water pipelines would require establishing a temporary construction corridor to provide access for equipment, materials laydown, excavated earth and bedding storage, and pipeline trench earthwork. The new pipeline facilities would be installed in existing and, in limited instances, newly acquired rights-of-way and would be completely buried. Manholes or buried blind flanged tees would be installed at regular intervals (approximately 1/4 to 1/2 mile) to provide access for sampling testing, inspection, maintenance, and repair. A few isolation valves (used to close segments of the pipeline) may be installed at regular intervals to close off segments of the pipeline for maintenance, repair, and emergency in breakage situations.

To consider the worst-case scenario for the analysis, it has been assumed that the maximum pipeline diameter (30 inches) would be constructed. Installation of the pipeline would require a permanent easement and an

additional construction easement. Generally, permanent easements are three times the width of the trench. A temporary construction easement of up to 60 feet wide would be required to permit the movement of construction equipment except for narrower sections to reflect the available right-of-way. The permanent easement for the conveyance pipeline(s) would be approximately 10 feet wide to facilitate access by maintenance vehicles.

Construction of the pipeline may involve two methods of pipeline construction: open-cut trenching and trenchless construction. Trenchless construction would be used to traverse creeks or waterways, major intersections, and railroad rights-of-way. These two methods are described in the following discussion.

CONSTRUCTION EQUIPMENT AND STAGING AREAS

At various locations along the construction route, staging areas would be required to store pipe, construction equipment, and other construction-related material. Staging areas would be established along the pipeline route(s) where space is available. In some cases, staging areas may be used for the duration of the construction of the "Water" portion of the project. In other cases, as pipeline construction moves along the route, the staging area would be moved to minimize hauling distances and avoid disrupting any one area for extended periods of time. Potential staging areas include vacant private and public land and parking lots and are identified for each Off-site Water Facility Alternative in Exhibits 2-2, 2-28, 2-29, and 2-30. Staging areas would not be located in sensitive habitat areas unless they would be permanently lost due to subsequent development or facility siting. For staging areas on private property, temporary easements would be required. For staging areas on public property, encroachment permits could be required.

TRIP GENERATION

It has been assumed for this EIR/EIS that the most intense construction activities would occur during early 2011 through 2012, assuming receipt of all environmental clearances, permits, and approvals. To characterize and analyze potential construction impacts, the City has identified a maximum crew size, truck trips, and worker trips, based on expected excavation volumes and quantities of imported materials. The typical crew size for each construction phase would be 10–20 people, plus inspectors. It is expected that up to 22 people could be present during the most intense construction periods for any one crew. Work hours would be governed by permits issued by regulatory agencies and by the applicable noise ordinance, but these are not expected to be restrictive because the area contains few residences. To the extent feasible, construction would occur in the dry months to minimize environmental effects.

During peak excavation, trenching, and earthwork activities and assuming up to three construction crews working simultaneously, the Off-site Water Facility Alternatives could generate up to 66 round-trip truck trips per day during the height of construction. In addition, daily haul truck trips could range from 20 to 30 round trips per day at the height of construction. Roadways that would be used by construction traffic would be contingent on the alignment ultimately selected.

CONSTRUCTION DEWATERING AND HYDROSTATIC TESTING

All raw- and treated-water conveyance pipelines would undergo hydrostatic testing, prior to operation, using water from locally available sources including: local water districts/agencies (e.g., SCWA) or groundwater. The pipeline(s) would be filled with water and pressurized to 1.5 times the operating pressure and maintained at that pressure for a minimum of eight hours to identify any leaks prior to operation. Water used during hydrostatic testing and, if required, construction dewatering would be disposed of via the following methods in compliance with Central Valley RWQCB requirements:

- discharge into sanitary sewer systems; or

- discharge into detention basins, agricultural fields, and, if necessary storm drains, drainage ditches, creeks, or rivers (carbon filtering or other form of water conditioning may be required).

The method to be used would be determined based on the availability and capacity of the systems in the area, requirements of governing agencies, and the quality of the water following hydrostatic testing and/or dewatering. Water quality would be measured from the water source prior to use and after use during discharge to assure that water quality is not compromised as a result of the test. All hydrostatic testing water and dewatering would be discharged using a flow manifold and energy dissipater to control the rate of discharge and to minimize erosion and turbidity to meet the standards set forth under the terms and conditions of the National Pollutant Discharge Elimination System (NPDES), General Construction Permit, and the General Permit for Dewatering and Other Low Threat Discharges to Surface Waters issued by the Central Valley RWQCB.

EXISTING UTILITIES

The City's contractors would implement an Underground Services Alert to identify existing underground utilities and service connections prior to commencing any excavation work. The exact utility locations would be determined by hand-excavated test pits dug at locations determined and approved by the construction manager (also referred to as pot-holing). Temporary disruption of service may be required to allow for construction. Service on such lines would not be disrupted until prior approval is received from the construction manager and the affected utility service provider.

2.7.2 WATER TREATMENT AND STORAGE FACILITIES

Construction of the City-Owned WTP at the On-site WTP, White Rock WTP, or Folsom Boulevard WTP would begin in late 2011 or early 2012, assuming receipt of all environmental clearances, permits, and approvals. The duration of construction is anticipated to last about 18–24 months. Typical construction activities involved in the construction of the WTP facilities would include: site preparation, excavation and sitework, paving, installation of structural facilities, architectural design and landscaping, electrical/instrumentation, and start-up and testing.

2.8 "WATER" ALTERNATIVES CONSIDERED AND ELIMINATED FROM FURTHER CONSIDERATION

The City has considered numerous potential water supplies and conveyance alternatives as part of the "Water" project to support planned development within the SPA that are consistent with the requirements of Measure W. The State CEQA Guidelines (CCR Section 15126.6[d]) emphasize the selection of a range of reasonable alternatives and an adequate assessment of these alternatives to allow for comparative analysis. The "B," or "Water" sections of Chapter 3 in this EIS/EIR analyze the potential impacts of constructing and operating the "Water" portion of the project under one of ten of the Off-site Water Facility Alternatives at an equal level of detail as required by NEPA. Each of the Off-site Water Facility Alternatives would involve the use of CVP Water purchased from the NCMWC, use of the Freeport Project diversion/intake facility, and conveyance capacity within multiple reaches of the Freeport Project.

In this instance, to meet the requirements of both CEQA and NEPA for the analysis of alternatives, the City has used a three-tiered methodology in its evaluation of numerous of water supply and conveyance alternatives for the Folsom Specific Plan. At the first tier, the City considered a wide range of water supply and conveyance alternatives with the premise that the supply needed to demonstrate a firm yield of 5,600 AFY to meet all water demands within the SPA. Several of these "Water" alternatives were eliminated from further consideration since they were not considered sufficiently developed at the time of the writing of this EIR/EIS. The alternatives were also eliminated from further consideration based on institutional concerns, technical short-comings, and concerns regarding long-term reliability.

"Water" alternatives carried beyond this initial alternatives screening are analyzed in Chapters 3 and 4. The second tier "Water" alternatives are identified as Water Supply Options in this EIR/EIS and specifically discussed in Section 3A.18, "Water Supply – Land." The Water Supply Options considered at this intermediate tier are qualitatively analyzed commensurate with the requirements of CEQA, but were not carried forward for equal-level of analysis as required by NEPA, and are thus, not analyzed in Chapter 3 of this EIR/EIS.

The third tier of alternatives analysis under the City's methodology provides an equal-level of analysis as required under NEPA for the Off-site Water Facility Alternatives. The "B," or "Water" sections of Chapter 3 analyze the potential construction and operational affects of the Off-site Water Facility Alternatives. The primary reasoning for carrying the NCMWC's CVP supply forward into the third tier of analysis is based on the findings of the Water Supply Assessment (WSA), provided in Appendix M1, which identified this supply as the most reliable of the all supplies evaluated.

2.8.1 Screening Process and Results for "Water" Alternatives

The selection of "Water" alternatives, including optional water supply sources, to support the Folsom Specific Plan development was based on several factors including their ability to meet the project objectives identified in Chapter 1, "Introduction," current and projected reliability under a variety of water years, and their proximity to the SPA. The alternatives screening process consisted of two major steps:

Step 1: Define the range of water supplies and conveyance facilities along with their availability to facilitate comparative evaluation under the first tier of the alternatives analysis.

Step 2: Evaluate each alternative water supply in consideration of the following criteria:

- **Technical and Engineering and Feasibility.** An alternative must be technically and physically feasible. An alternative must be based on existing and accepted state-of-the-art engineering concepts and cannot be based on experimental technologies. Also, an alternative must not be dependent upon either the availability or acquisition of site locations that cannot be reasonably assured.

- **Raw-Water Quality.** An alternative must provide a water supply or, have the capability of providing a water supply that protects water quality and meets or exceeds State and Federal water quality standards or other applicable water quality standards associated with its use.

- **Environmental Fatal Flaw.** An alternative cannot have environmental impacts that are so significant as to negate the positive attributes of the alternative or, simply transfer potential environmental impacts from one location to another.

- **Economic Feasibility.** An alternative cannot be economically impractical or infeasible. An alternative should be economically attractive such that the total direct costs to the customers and purveyors are minimized and do not significantly exceed the costs of alternatives with similar benefits. Similarly, an alternative cannot result in excessive operation and maintenance costs.

- **Long-term Reliability.** An alternative must be capable of supplying raw-water reliably year round and on a long-term basis.

- **Public Health and Safety.** An alternative should be able to meet all existing and anticipated future State and Federal health and safety requirements.

- **Timing.** An alternative must be capable of being implemented within a reasonable timeframe such that the benefits and needs of the project are not unduly delayed.

- **Institutional.** An alternative cannot possess significant uncertainty that all permits, licenses, or other logistical requirements can be reasonably obtained.

Beyond the Off-site Water Facility Alternatives, which are described in Section 2.13 and would involve the use of CVP water from NCMWC, ten potential "Water" alternatives were reviewed against the criteria listed under Step 2. The range of other "Water" alternatives considered as part of the first tier of analysis under the City's alternatives analysis methodology included the following:

- Groundwater from the Central Sacramento Groundwater Basin
- Diversion of Un-Appropriated American River Water
- Conservation of Existing Entitlements and Water System Retrofit
- Water Supply and Delivery from the El Dorado Irrigation District
- Other Senior Sacramento River Water Right Holders
- Non-Potable Water Supplies
- Water Supply Exchange with Sacramento Municipal Utilities District
- New Sacramento River Diversion and Water Rights
- Use of East Bay Municipal Utility District's Capacity in Freeport Project
- Higher CVP Allocation From NCMWC

POTENTIAL "WATER" ALTERNATIVES NOT CONSIDERED FURTHER IN THIS EIR/EIS

A number of "Water" alternatives were initially considered but eliminated based on further evaluation in conjunction with Step 2. Those "Water" alternatives that were found to be technically feasible and consistent with the City's objectives were carried forward either as potential Off-site Water Facility Alternatives as described in Section 2.13 or as Water Supply Options, which are described and qualitatively assessed in Section 3B.18, "Water Supply." Those "Water" alternatives eliminated from additional consideration are identified below along with the City's reasons of why the potential alternative was not carried forward for additional analysis in this EIR/EIS.

New Sacramento River Diversion and Water Rights

A new Sacramento River diversion and water rights application was determined to be infeasible based on a number of critical reasons. First and most importantly, a new diversion structure on the Sacramento River would no longer take advantage of the existing Freeport diversion facility thereby resulting in direct impacts to the Sacramento River. Construction of a new diversion facility would result in greater environmental impacts to biological resources along the Sacramento River, fisheries, and water quality within the river as compared to the Off-site Water Facility Alternatives. Additionally, the operation of an additional diversion structure could contribute to greater cumulative impacts to Delta inflows and water quality as compared to the Off-site Water Facility Alternatives. Based on these considerations, the City concluded that this "Water" alternative would result in greater environmental impacts when compared to the Off-site Water Facility Alternatives.

Beyond the operational and physical impacts of a new diversion, a new diversion facility and the additional length of conveyance pipeline(s) would add substantially to the cost of this alternative. Based on the added structural facilities, the additional cost would render the project cost-prohibitive.

Further, the completion of the application process for securing new water rights to the Sacramento River would not guarantee the City a secured water supply within the timeframe required for approval of the Folsom Specific Plan. The water rights application process can take several years to complete and there is no level of certainty in terms of whether the SWRCB would approve the application. Based on these circumstances, a new Sacramento River water right would be less certain when compared to the NCMWC's CVP water supply proposed under the Off-site Water Facility Alternatives. For these collective reasons, this "Water" alternative was not carried forward for additional consideration in this EIR/EIS.

Diversion of Unappropriated American River Water

This "Water" alternative would involve the application to the SWRCB for new a new water right permit to appropriate surface water from the American River for diversion at Lake Natoma using the City's existing turnout on the FSC. This alternative was ultimately determined infeasible for a variety of reasons. First, the level of certainty for acquiring newly appropriated American River water supplies was considered low given other pending applications along the American River which, if approved by the SWRCB, could have priority over any newly filed water rights application under this alternative. With the recent revocation of Reclamation's Water Right Permits 16209 and 16212 for the Auburn-Folsom South Unit of the CVP (or the Auburn Dam Project; SWRCB Order WR 2008–0045), it is reasonable for the City to recognize the possibility of appropriating a fraction of this supply and putting it to beneficial use. Water right permits 16209 for up to 100 cfs and 16212 for up to 900 cfs included municipal supply as a beneficial use. However, even though the water supply required for the SPA represents a fraction of this supply, it would take several years for completion of the application process with SWRCB in order to secure this water supply and, therefore, the availability of this water supply within the timeframe necessary for the overall project is unlikely.

Unlike the Off-site Water Facility Alternatives, this alternative would involve the direct diversion of up to 6,000 AFY of surface water from the Lower American River through the FSC. Although this represents a relatively small proportion of total daily flows within the Lower American River, it is possible that the additional diversion under this option could affect flows within the Lower American River and water temperatures, especially during times of low flow. A number of fish species of primary management concern use the Lower American River during one or more of their life stages and include fall-run Chinook salmon, steelhead, splittail, American shad, and striped bass.

Water temperatures within the Lower American River already exceed regulatory standards during the months of August through October in most years. The biological opinion (BO) for Reclamation's Operations Criteria and Plan (OCAP) for Long-Term CVP/California State Water Project (SWP) Operations indicates that effects on steelhead are pronounced due to the inability to consistently provide suitable temperatures for various life stages and flow-related effects caused by operations. The BO's Reasonable and Prudent Alternative (RPA) prescribes a flow management standard, a temperature management plan, additional technological fixes to temperature control structures, and, in the long term, a passage at Nimbus and Folsom Dams to restore steelhead to native habitat (OCAP BO 2009). However, based on this existing condition combined with the fact that these improvements would likely not be in operation in time for this alternative's operation, it is reasonable to conclude that with incrementally less water, these exceedances could be more severe or last for longer durations under this "Water" alternative.

Given these circumstances combined with the City's voluntarily participation in the Water Forum Agreement (WFA), the City decided not to pursue this "Water" alternative due potential conflicts with the WFA. More specifically, the WFA specifically discourages new diversions along the Lower American River, if an agency can reasonably demonstrate an alternate location. Given that the City has identified the Off-site Water Facility Alternatives, which involve diversion of surface water from the Sacramento River, and the City's desire to continue to be an active member in the Water Forum, this "Water" alternative was considered too uncertain to be carried forward for additional analysis.

Water Supply and Delivery from El Dorado Irrigation District

A small portion of the SPA is located within the EID service area. For this reason, the City initially considered water supplies from EID as a potential source of potable water for the Folsom Specific Plan. EID has two water

contracts with Reclamation, for a total of 32,000 AFY from the South Fork of the American River, along with an application submitted for a Fazio Water[7] contract.

Based on information contained in El Dorado County's General Plan Update EIR (2004), existing water demand for EID is estimated to range from 37,000–38,000 AFY. EID currently has a system firm yield[8] of 43,280 AFY. However, current projections for build-out of the recently adopted general plan suggest that demands within EID's service area could increase up to 80,000 AFY thereby potentially resulting in major surface water shortages within EID's service area and the need to develop additional surface water supplies. This water supply impact was identified as a significant in El Dorado County's General Plan EIR (2004).

In response to this anticipated shortfall in water supply, the El Dorado County Water Agency (EDCWA), with the assistance of EID and the other water purveyors in the county, has prepared the EDCWA Water Plan, which is intended to provide a blueprint for actions and facilities needed to address El Dorado County's projected water shortages into the future. One source under consideration in EDCWA's Plan is 15,000 AFY of new CVP M&I contract water for El Dorado County allocated under Fazio Water contract. This new CVP water would be taken directly from Folsom Reservoir, or exchanged for non-CVP water to be diverted from the American River upstream of Folsom Reservoir.

However, this additional water is intended to serve areas within El Dorado County and not areas within Sacramento County as Public Law 101-514 separately allocates new CVP water to SCWA. This water supply is still undergoing environmental review and has not been sufficiently developed to a point where it could be considered reliable to support development within the SPA. Additionally, the development of new CVP water supplies within El Dorado County will require the construction of the necessary supporting infrastructure (e.g., dams) to facilitate the capture and storage of these new supplies. These facilities could result in physical environmental impacts that would likely be greater in extent and severity when compared to those associated within the Off-site Water Facility Alternatives.

For these reasons, a water supply and delivery alternative involving EID was not carried forward for further consideration in this EIR/EIS due to uncertainty whether EID would have enough supply to serve the entire SPA.

Non-Potable Water Supplies

In its pursuit of water supplies for the Folsom Specific Plan development, the City considered several non-potable sources including process water from Granite's proposed Walltown Quarry, Groundwater Extraction and Treatment (GET) Water from Aerojet, and recycled water from SRCSD. At the time of writing of this EIR/EIS, none of these sources has materialized to a point where they could be considered for the purposes of environmental analysis based on existing institutional issues. Further, the use of non-potable water supplies would only address one sector of demand within the Folsom Specific Plan and would not address the potable water supply demand component of the proposed development.

Beyond these institutional issues, the use of recycled water within the SPA would require the construction of necessary conveyance infrastructure to facilitate delivery. At this time, the location and capacity for these conveyance facilities has not been determined. While it can be reasonably assumed that the pipelines would be installed within existing road utility easements, there may also be a need to construct additional facilities at the SCRSD Regional Wastewater Treatment Plant, or an additional scalping plant[9] at another, undetermined location.

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[7] Fazio Water - Public Law 101-514 (Section 206), of the Water Resources Development Act of 1990 authorized and directed the Secretary of the Interior to enter into a M&I water service contract with local public water purveys including the City, SCWA, EID and others. Specific allocations of Fazio Water are discussed in Sections 3.2B and 3.3B.

[8] EID defines its firm yield as the amount of water that is available for it to use from a source in 95 out of 100 years with existing facilities, while incurring shortages of no more than 20% annually in 5 out of 100 years (EDCWA 2003a).

[9] Satellite reclaimed water production plants that withdraw wastewater from trunk sewers and produce reclaimed water, usually returning the biosolids and any excess water produced back to the sewer.

A scalping plant option would require several miles of easements for pipelines, while modifications at SCRSD's existing treatment plant could require up to ten of miles of easements.

The securing of these easements and construction of associated pipeline facilities would have physical environmental effects similar to those of the Off-site Water Facility Alternatives. However, without a conceptual alignment and operational understanding for these facilities, a comparative analysis under CEQA and NEPA is not feasible at this time. As a result, separate environmental analysis would be required for any non-potable water infrastructure intended to serve the SPA.

East Bay Municipal Utilities District's Capacity within the Freeport Project

Under this "Water" alternative, the City would wheel its CVP water through the Freeport Project using a portion (e.g., 6.5 mgd) of EBMUD's allocated capacity. In concept, an alternative using EBMUD's allocated supply within the Freeport Project would look similar to the Proposed Off-site Water Facility Alternative or Off-site Water Facility Alternative 1. However, rather than constructing a pump facility at the bifurcation point, the City would construct the pumping facility at the FSC. The alignment from this location would then resemble that of Proposed Off-site Water Facility Alternative or Off-site Water Facility Alternative 1 by following Grant Line Road north to the On-site WTP or White Rock WTP immediately south of the SPA.

This "Water" alternative was rejected from further consideration for two primary reasons. First, based on information contained in the Freeport Project EIR, EBMUD's operations at Freeport require full use of the its allocated capacity three out of every ten years. This would eliminate capacity for the City during these three years and would create, for the City, an infeasible need to secure sufficient storage capacity, either above or below ground, to enable for continued service during these three years when capacity within the Freeport Project would otherwise be unavailable. The need to store up to 25,500 AF for three years, especially if the facility were above-ground, would result in a substantially greater footprint when compared to the Off-site Water Facility Alternatives.

Secondly, in preliminary negotiations with EBMUD, EBMUD has been adamant that any capacity allocated to the City within the Freeport Project must be replaced or augmented throughout the remainder of EBMUD's portion of the Freeport Project, which extends south to the Mokelumne River. This arrangement would be required to ensure that EBMUD's service area is not adversely affected by a loss in conveyance capacity. Based on the City's initial investigation, the level of improvements necessary to augment the capacity purchased by the City would render this alternative cost prohibitive. For these reasons, this "Water" alternative was not carried forward for further analysis in this EIR/EIS.

Water Supply Exchange with Sacramento Municipal Utility District

Under this alternative, the City would purchase up to 8,000 AFY of CVP Water from NCMWC and exchange this water supply with SMUD for up to 8,000 AFY of their CVP Water from the American River. SMUD has an existing water service contract with Reclamation that expires in 2012 for delivery of a maximum of 75,000 AFY via the FSC.

SMUD currently has two primary water uses: (1) decommissioning Rancho Seco Nuclear Plant; and (2) cooling requirements at the Cosumnes Power Plant. At the Rancho Seco Nuclear Plant, water is currently diverted from the FSC for dilution of treated-radioactive wastewater, which is subsequently discharged to Clay Creek. The current NPDES Permit (R5-2007-0016) indicates that over time the reduction in the volume of radioactive liquid waste will also result in a corresponding reduction in the quantity of dilution water. The actual reduction in water use resulting from this activity is unknown.

For the Cosumnes Power Plant, SMUD uses approximately 5,300 AFY to meet both phases of the Power Plant's cooling and process water requirements (SMUD 2002). Based on these operational considerations, the City has

assumed that SMUD would be capable of exchanging up to 8,000 AFY of its existing CVP water from the American River.

Under this alternative, the City would construct raw and treated water facilities similar to those described for Water Supply Option 2, as described in more detail in Section 3B.18, "Water Supply", to facilitate diversion of the exchanged water from the FSC at the City's existing turnout. The City would then purchase capacity within EBMUD's dedicated portion of the Freeport Project to wheel up to 8,000 AFY of NCMWC water supply into the FSC. SMUD would then take delivery of the water from its existing intake downstream on the FSC.

In addition to the agreements identified for the Off-site Water Facility Alternatives, this alternative would require an additional agreement with SMUD to facilitate the exchange beyond that described for the Off-site Water Facilities Alternatives. In addition, capacity within EBMUD's portion of the Freeport Project would be required instead of SCWA's. Given that negotiations between the City and SMUD and EBMUD regarding any exchange option remain preliminary at the time of the preparation of this EIR/EIS, this alternative was not considered sufficiently developed to enable for analysis within this EIR/EIS.

Higher Central Valley Project Allocation from Natomas Central Mutual Water Company

The City considered allocations of CVP Water of up to 15,000 AFY from NCMWC during the course of its evaluation. After completing intensive water demand analysis for the SPA, the City determined that 8,000 AFY would be sufficient to serve the SPA development when considering the potential for reductions during dry years. Acquiring any additional supplies could have potential growth implications and, therefore, were not pursued.

2.9 CITY OF FOLSOM GENERAL PLAN AMENDMENT

2.9.1 CHANGES TO PERMITTED DENSITY RANGES

Adoption of the Proposed Project Alternative, the Resource Impact Minimization Alternative, the Centralized Development Alternative, the Reduced Hillside Development Alternative, or the No USACE Permit Alternative would require changes to the density ranges of several City of Folsom General Plan land use designations to accommodate the proposed residential units. The City of Folsom uses a single set of general plan land use designations throughout its jurisdiction, so these changes would alter the permitted density ranges in several areas of the existing City. The following designations would be altered:

- Single Family: existing density range is 2–4 units per acre, proposed density range would be 1–4 units per acre.
- Multi-Family Medium Density: existing density range is 12–18 units per acre, proposed density range would be 12–20 units per acre.
- Multi-Family High Density: existing density range is 18–25 units per acre, proposed density range would be 20–30 units per acre.

These changes would result in an increase of the potential maximum population in some areas of the existing City. A discussion of the potential impacts of this change is included in Section 3A.10, "Land Use and Agricultural Resources – Land."

2.9.2 CHANGES TO THE TRAFFIC LEVEL OF SERVICE STANDARD

The Folsom Specific Plan proposes an amended Level of Service (LOS) policy within the project area (the portion of the City of Folsom to be located south of U.S. 50), as follows:

> The City should strive to achieve at least a traffic Level of Service "C" within the Folsom South of US 50 Specific Plan. For roadways and intersections within the Specific Plan, LOS "D" conditions may be considered on a case by case basis if improvements required to meet LOS "C" exceeds the "normally accepted maximum" improvements established by the City. Complete Streets principles require that streets and intersections be designed with all transportation modes in mind, and that the road widths, delays, and safety impacts to pedestrians and bicycles make larger roadways and intersections incompatible with this philosophy. Coupled with the limited reduction in vehicular delay that such improvements would provide, the City has determined that the benefits of excessively wide roadways and intersections do not outweigh the impacts to the community. Therefore, "normally accepted maximum" improvements on arterial roadways include three through-lanes in each direction; and at intersections includes two left-turn lanes, three through-lanes and one right-turn lane on an approach.

The existing City of Folsom General Plan Policy 17.17, which addresses traffic LOS standards, will not change within the existing City of Folsom boundaries (i.e., north of U.S. 50).

2.10 INTEGRATION OF "LAND" AND "WATER" ALTERNATIVES FOR DEVELOPMENT

Under the No Project Alternative, the SPA could be developed with up to 44 rural residences on 80-acre parcels as currently zoned under the Sacramento County General Plan, and no off-site water facilities would be constructed because each rural resident would be responsible for developing his or her on-site well. Therefore, for purposes of this EIR/EIS, the No Project Alternative is evaluated in the 3A "Land" sections.

Under the No USACE Permit Alternative, there would be no placement of dredged or fill material into waters of the U.S. (including wetlands) from either the "Land" or "Water" portions of the project, thus eliminating the need for a USACE Section 404 CWA permit. In order to achieve "no fill," no development in the SPA would occur within 50 feet of a water of the United States, the water treatment plant (regardless of whether it is located off-site or on-site) would not be constructed within 50 feet of a water of the United States, and the off-site water conveyance pipeline would use trenchless construction methods (e.g., horizontal directional drilling or jack-and-bore) where the pipeline route intersected any water of the United States. Therefore, only the No USACE Permit Off-site Water Facility Alternative could be selected if the No USACE Permit "Land" Alternative were selected for development of the SPA.

Any of the other 10 off-site water alternatives described above could ultimately be implemented for either the Resource Impact Minimization, Centralized Development, or Reduced Hillside Development Alternative. Because the off-site water facilities are different from development of the SPA and would occur in locations that are further removed spatially from the SPA, the impacts of these water facilities are evaluated in the 3B "Water" sections of this EIR/EIS. However, the City and the USACE wish to make clear to the reader that the "project" as a whole consists of both development of the SPA and off-site facilities necessary to provide water in support of the SPA development. Thus, when considering impacts of the "project" as a whole, it is necessary to consider both the 3A and 3B impacts taken together.

2.11 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The State CEQA Guidelines require identification of an environmentally superior alternative from among the proposed project and the alternatives evaluated. Federal NEPA guidelines also recommend that an environmentally preferred alternative be identified; however, under NEPA, that alternative does not need to be identified until the final record of decision is published. Therefore, the discussion in this section of the environmentally superior alternative is intended to satisfy only the state CEQA requirements.

2.11.1 "LAND" ALTERNATIVES

Table 2-16 shows the overall level of significance for each issue area, and provides a comparison of CEQA significance determinations among the action alternatives (No USACE Permit, Proposed Project, Resource Impact Minimization, Reduced Hillside Development, Centralized Development) and the No Project Alternative for each of the 17 environmental issues evaluated in this EIR/EIS.

The No Project Alternative is defined in Chapter 2, "Alternatives" of this EIR/EIS as (1) no annexation of the SPA to the City, (2) potential development of up to 44 rural residences in the SPA under the existing Sacramento County zoning AG-80, and (3) no construction of any off-site water facilities. Therefore, "no project," from both a "Land" and "Water" perspective, is evaluated as one combined No Project Alternative in the 3A "Land" sections of this EIR/EIS. As shown in Table 2-16, the No Project Alternative would be the Environmentally Superior Alternative. This alternative provides the greatest opportunity for avoidance and/or substantial reduction in the significant environmental impacts of the project. However, this alternative would not meet the project purpose and need, nor would it meet any of the project objectives, as identified in Chapter 1 of this EIR/EIS.

In the event that the "No Project" Alternative is considered the environmentally superior alternative, the State CEQA Guidelines (CCR Section 15126[d][3]) require the identification of an environmentally superior "build alternative." As shown in Table 2-16, all five of the action alternatives (No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development) would have the same overall significance after mitigation in each of the issue areas. However, as described in more detail in the impact analysis contained in Sections 3A.1 through 3A.18, the following differences can be summarized:

- The No USACE Permit Alternative would avoid filling any jurisdictional waters of the U.S., including wetlands. This alternative would also result in the lowest GHG emissions, and has the lowest water demand of any of the five action alternatives.
- The Resource Impact Minimization Alternative would generate the lowest amount of PM_{10} and NO_x emissions among the five action alternatives. This alternative would preserve the most known cultural resources of any of the five action alternatives.
- The Centralized Development Alternative would preserve the largest amount of the hillside within the Sierra Nevada foothills among the five action alternatives. This alternative would also have the least amount of hazards from geologic conditions and soil erosion among the five action alternatives.

Therefore, for the reasons stated above, either the No USACE Permit, Resource Impact Minimization, or Centralized Development Alternative could be considered the "environmentally superior alternative" under CEQA for the "Land" portion of the project.

2.11.2 "WATER" ALTERNATIVES

As described above in Section 2.9.1, because no off-site water facilities would be constructed under the No Project Alternative, the combined impacts of "Land" and "Water" under are evaluated in Section 2.9.1 above and throughout the 3A "Land" sections of this DEIR/EIS.

Construction-related effects identified for the Proposed Off-site Water Facility Alternative and Off-site Water Facility Alternatives NCP, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A would be similar; however, the intensity of those activities is expected to be substantially less under Off-site Water Facility Alternative 2B and NCP. Off-site Water Facility Alternatives NCP, PA, 1, 1A, 2, 2A, 3, 3A, 4, and 4A would require much longer conveyance alignments as compared to Off-site Water Facility Alternative 2B. The No USACE Permit Off-site Water Facility Alternative would avoid potential direct impacts to waters of the U. S. and direct impacts to special status vernal pool species that could occur under the Proposed Off-site Water Facility Alternative and Off-site Water Facility

Table 2-16
Comparison of Impacts of the Proposed Project - Land After Mitigation Implementation to Those of the Alternatives Under Consideration[1]

Environmental Issue	Alternative					
	No Project	No USACE Permit	Proposed Project	Resource Impact Minimization	Centralized Development	Reduced Hillside Development
Aesthetics	LTS	S&U	S&U	S&U	S&U but lesser than Proposed Project and the other action alternatives	S&U
Air Quality	LTS	S&U	S&U	S&U but lesser than Proposed Project and the other action alternatives	S&U	S&U
Biological Resources	LTS	S&U but lesser than Proposed Project and the other action alternatives	S&U	S&U	S&U	S&U
Climate Change	LTS	S&U but lesser than Proposed Project and the other action alternatives	S&U	S&U	S&U	S&U
Cultural Resources	PS	S&U	S&U	S&U but lesser than Proposed Project and the other action alternatives	S&U	S&U
Environmental Justice	NI	LTS	LTS	LTS	LTS	LTS
Geology, Soils, Minerals, and Paleontological Resources	PS	LTS	LTS	LTS	LTS and less than Proposed Project and the other action alternatives	LTS
Hazards and Hazardous Materials	LTS	LTS	LTS	LTS	LTS	LTS
Hydrology and Water Quality	LTS	LTS	LTS	LTS	LTS	LTS
Land Use and Agricultural Resources	NI	S&U	S&U	S&U	S&U	S&U
Noise	LTS	LTS	LTS	LTS	LTS	LTS
Parks and Recreation	LTS	LTS	LTS	LTS	LTS	LTS

Table 2-16
Comparison of Impacts of the Proposed Project - Land After Mitigation Implementation to Those of the Alternatives Under Consideration[1]

Environmental Issue	Alternative					
	No Project	No USACE Permit	Proposed Project	Resource Impact Minimization	Centralized Development	Reduced Hillside Development
Population, Employment, and Housing	LTS	LTS	LTS	LTS	LTS	LTS
Public Services	LTS	LTS	LTS	LTS	LTS	LTS
Traffic and Transportation	LTS	S&U	S&U	S&U	S&U	S&U
Utilities and Service Systems	LTS	LTS	LTS	LTS	LTS	LTS
Water Supply	NI	LTS and has lowest water demand of action alts	LTS	LTS	LTS	LTS

Notes: LTS = less than significant, NI = no impact, PS = potentially significant, S = significant, SU = significant and unavoidable

[1] The overall impact conclusion for each issue area for each alternative was determined as follows: Separate tables were created for each issue area, and within each alternative, the number of each of the significance conclusions (LTS, PS, S, or NI) before the implementation of mitigation measures was added up and totaled. The significance conclusion that occurred the greatest number of times within each issue area was determined to be the overall impact conclusion for that alternative. For example, if there were four impacts determined to be LTS and two impacts determined to be PS, the impact conclusion would be LTS. In cases where the numbers were the same (i.e., two impacts determined to be LTS and two impacts determined to be PS), the more severe impact was used; in the case of this example, it would be PS. Impacts that are identified in the DEIR/DEIS as being SU after mitigation only because the mitigation is outside of the jurisdiction of the lead agency were assumed to be reduced to LTS for purposes of determining the environmentally superior alternative.

Source: Data compiled by AECOM in 2010

Alternatives 1, 1A, 2, 2A, 2B, 3, 3A, 4 and 4A. Off-site Water Facility Alternative 2B would avoid some of the more extensive wetland and, potentially, vernal pool impacts that could occur under the Proposed Off-site Water Facility Alternative and Off-site Water Facility Alternatives 1 and 1A. Table 2-17 provides a comparison of CEQA significance determinations among the Off-site Water Facility Alternatives.

Of the action alternatives described in Section 2.13 and analyzed in Chapter 3, Off-site Water Facility Alternative 2B is considered environmentally superior due to its further integration within existing water treatment facilities (e.g., Vineyard SWTP), and a substantially reduced conveyance alignment from the North Douglas Tanks. Alternative 2B would minimize many of the air quality and noise concerns associated with the placement of a WTP adjacent to areas planned for medium- and high-density residential housing, and would also avoid potential indirect and/or direct impacts to special status species, wetlands, and vernal pools along Eagles Nest, Excelsior, and Florin Roads. The No USACE Permit Alternative would provide for the avoidance of direct impacts to special status vernal pool species and waters of the U. S.; however, indirect impacts to waters of the U.S. would still occur, and the No USACE Permit Alternative would not achieve the reduction in air quality, noise, and land use impacts that would be achieved under Off-site Water Facility Alternative 2B.

Therefore, Off-site Water Facility Alternative 2B is considered environmentally superior for purposes of CEQA when compared to the Proposed Off-site Water Facility Alternative, the No USACE Permit Off-site Water Facility Alternative, and Off-site Water Facility Alternatives 1, 1A, 2, 2A, 3, 3A, 4, and 4A for both the construction and operation of the "Water" project.

Table 2-17
Comparison of Impacts of the Off-site Water Facility Alternatives Under Consideration[1]

Environmental Issue	Alternative										
	NCP	PA	1	1A	2	2A	2B	3	3A	4	4A
Air Quality	S	S	S	S	LTS	LTS	LTS	S	S	S	S
Biological Resources	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
Climate Change	S	S	S	S	S	S	S	S	S	S	S
Cultural Resources	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
Drainage, Hydrology, and Water Quality	PS	PS	PS	PS	LTS	LTS	LTS	PS	PS	PS	PS
Environmental Justice	NI	NI	NI	NI	NI	LTS	NI	NI	LTS	NI	LTS
Hazards and Hazardous Materials	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
Geology, Soils, and Mineral Resources	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
Land Use and Agriculture	PS	PS	S	S	LTS	LTS	LTS	S	S	S	S
Noise	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
Paleontological Resources	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
Parks and Recreation	PS	PS	PS	PS	PS	PS	LTS	PS	PS	PS	PS
Population, Employment, and Housing	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Public Services	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Traffic and Transportation	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
Utilities and Service Systems	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
Visual Resources	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS

Notes: NCP = No USACE Permit Alternative; PA = Proposed Off-site Water Facilities Alignment; LTS = less than significant, NI = no impact, PS = potentially significant, S = significant, SU = significant and unavoidable, B = Beneficial

[1] The overall impact conclusion for each issue area for each alternative was determined as follows: Separate tables were created for each issue area, and within each alternative, the number of each of the significance conclusions (LTS, PS, S, or NI) before the implementation of mitigation measures was added up and totaled. The significance conclusion that occurred the greatest number of times within each issue area was determined to be the overall impact conclusion for that alternative. For example, if there were four impacts determined to be LTS and two impacts determined to be PS, the impact conclusion would be LTS. In cases where the numbers were the same (i.e., two impacts determined to be LTS and two impacts determined to be PS), the more severe impact was used; in the case of this example, it would be PS.

Source: Data compiled by RMC Water and Environment in 2010

3 AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, AND MITIGATION MEASURES

3.1 APPROACH TO THE ENVIRONMENTAL ANALYSIS

3.1.1 INTRODUCTION

The California Environmental Quality Act (CEQA) Guidelines (State CEQA Guidelines) require an environmental impact report (EIR) to include an evaluation of potentially significant effects on the physical environment associated with the project and to identify feasible mitigation for those effects. All phases of the project, including planning, acquisition, development, and operation, including all off-site infrastructure and roadway improvements are evaluated in the analysis. California Code of Regulations (CCR) Title 14, Section 15126.2 (14 CCR Section 15126.2) states that:

> An EIR shall identify and focus on the significant environmental effects of the proposed project. In assessing the impact of a proposed project on the environment, the lead agency should normally limit its examination to changes in the existing physical conditions in the affected area as they exist at the time the notice of preparation is published, or where no notice of preparation is published, at the time environmental analysis is commenced. Direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects. The discussion should include relevant specifics of the area, the resources involved, physical changes, alterations to ecological systems, and changes induced in population distribution, population concentration, and human use of the land (including commercial and residential development), health and safety problems caused by the physical changes, and other aspects of the resource base such as water, historical resources, scenic quality, and public services. The EIR shall also analyze any significant environmental effects the project might cause by bringing development and people into the area affected.

An EIR must also discuss inconsistencies between the Proposed Project and applicable general plans and regional plans (14 CCR Section 15125[d]).

According to 14 CCR Section 15126.4, an EIR must describe potentially feasible measures that could avoid or minimize significant adverse impacts (CCR Section 15126.4[a][1]) and feasible and practicable measures that are fully enforceable through permit conditions, agreements, or other legally binding process (CCR Section 15126.4[a][2]). Mitigation measures are not required for effects that are found to be less than significant.

The Council on Environmental Quality (CEQ) regulations for implementing the National Environmental Policy Act (NEPA) (the "NEPA regulations") specify that a Federal agency preparing an environmental impact statement (EIS) must consider the effects of the proposed action and alternatives under consideration on the environment; these include effects on ecological, aesthetic, and historical and cultural resources, and economic, social, and health effects (defined below). An EIS must also discuss possible conflicts with the objectives of Federal, state, regional, and local adopted land use plans, policies, or controls for the area concerned; energy requirements and conservation potential; urban quality; the relationship between short-term uses of the environment and long-term productivity; and irreversible or irretrievable commitments of resources. An EIS must identify relevant, reasonable mitigation measures that are not already included in the proposed action or alternatives under consideration that could avoid, minimize, rectify, reduce, eliminate, or compensate for the project's adverse environmental effects (40 Code of Federal Regulations [CFR] 1502.14, 1502.16, 1508.8).

This draft document is known as a draft EIR/EIS (DEIR/DEIS). The following discussion introduces Chapter 3 of this EIR/EIS, which addresses the affected environment, environmental consequences, and mitigation measures for each environmental issue area, and explains the organization and general assumptions used in the analysis.

The reader is referred to the individual technical sections regarding specific assumptions and methodology and significance criteria (thresholds of significance) used in the analysis and determination of significance of impacts.

3.1.2 INTEGRATION OF "LAND" AND "WATER" ALTERNATIVES FOR DEVELOPMENT

Because the project includes both "Land" and "Water" components which have distinct sets of alternatives, the analysis in this chapter is split between "Land" sections (Sections 3A.1 through 3A.17) and "Water" sections (Sections 3B.1 through 3B.18).

Under the No Project Alternative, (1) the SPA would not be annexed to the City of Folsom, (2) the SPA could be developed with up to 44 rural residences as currently zoned under the Sacramento County General Plan AG-80, and (3) no off-site water facilities would be constructed. Therefore, for purposes of this EIR/EIS, "no project" from both a "Land" and "Water" perspective is evaluated as one combined No Project Alternative in the 3A "Land" sections.

Under the No USACE Permit Alternative, there would be no placement of dredged or fill material into waters of the U.S. (including wetlands) from either the "Land" or "Water" portions of the project, thus eliminating the need for a USACE Section 404 CWA permit. In order to achieve "no fill," no development in the SPA would not occur within 50 feet of a water of the United States, the water treatment plant (regardless of whether it is located on- or off-site) would not be constructed within 50 feet of a water of the United States, and the off-site water conveyance pipeline would use horizontal directional drilling (i.e., jack-and-bore) construction methods where the route intersected any water of the United States. Therefore, only the No USACE Permit "Water" Alternative could be implemented if the No USACE Permit "Land" Alternative were selected for development of the SPA.

Any of the other 10 off-site water alternatives described Chapter 2, "Alternatives," could ultimately be implemented for either the Resource Impact Minimization, Centralized Development, or Reduced Hillside Development Alternatives in the SPA. Because the off-site water facilities are different from development of the SPA and would occur in locations that are further removed spatially and temporally from the SPA, the impacts of these off-site water facilities are evaluated in the 3B "Water" sections of this EIR/EIS. However, the City and the USACE wish to make clear to the reader that the "project" as a whole consists of both development of the SPA and off-site facilities necessary to provide water in support of SPA development. Thus, when considering impacts of the "project" as a whole, it is necessary to consider both the 3A and 3B impacts taken together.

Each of the 3A and 3B Sections of this EIR/EIS present a discussion of existing conditions, environmental impacts associated with implementation of the Proposed Project and alternatives under consideration, mitigation measures to avoid or reduce the level of impact, and residual significant impacts (i.e., impacts that would be significant and unavoidable despite the imposition of feasible mitigation measures). Issues evaluated in these sections consist of a full range of environmental topics originally identified for review in the notice of preparation (NOP) prepared under CEQA requirements for the project and identified in scoping comments on the NOP and notice of intent (NOI), as required under NEPA. The NOP and NOI are included within the scoping report prepared for the project (Appendix B). Each of the 3A and 3B Sections include the components described below.

3.1.3 SECTION CONTENTS AND DEFINITION OF TERMS

For ease of reference and to prevent confusion, the environmental setting, impacts, and mitigation measures required by CEQA have been prepared largely using NEPA terminology (e.g., affected environment, environmental consequences, and mitigation measures) but all sections comply with CEQA and NEPA regulations. The terms "Effect" and "Impact" are synonymous as used herein (40 CFR 1508.8). This chapter is organized by issue area, generally corresponding to topics in the CEQA Environmental Checklist (State CEQA Guidelines Appendix G, as amended), with the addition of "Environmental Justice," which is required in the NEPA analysis pursuant to Presidential Executive Order 12898. As described below, each section follows the same format.

AFFECTED ENVIRONMENT

The "Affected Environment" subsection provides an overview of the baseline physical environmental conditions (i.e., the environmental baseline) on the project study sites, and surrounding areas as appropriate, in accordance with NEPA regulations (40 CFR 1502.10) and 14 CCR Section 15125, at the time the NOP was published on September 12, 2008.

This approach is consistent with the State CEQA Guidelines (14 CCR Section 15125. NEPA requires a description of the Affected Environment, which is the environment of the area(s) to be affected or created by the alternatives under consideration. The baseline physical conditions required under CEQA will ensure compliance with the NEPA requirement for Affected Environment. This approach also has the virtue of avoiding the potential confusion that might result from using different baselines for CEQA and NEPA purposes.

REGULATORY FRAMEWORK

The "Regulatory Framework" subsection identifies the plans, policies, laws, regulations, and ordinances that are relevant to each topical section and describes required authorizations, permits, and other approvals necessary to implement the project. As noted above, the EIR/EIS needs to address possible conflicts between the Proposed Project or alternatives under consideration and the objectives of Federal, state, regional, or local formally adopted land use plans, policies, or controls for the area.

Conflicts with any Federal, state, or local formally adopted land use plans, policies, or controls for the area are considered appropriate topics under NEPA and must be addressed in the EIS (40 CFR 1502.16[c]). The City has analyzed the project for consistency with the policies of the adopted City General Plan for the action alternatives, and for consistency with the policies of the adopted Sacramento County General Plan for the No Project Alternative and for the water supply and conveyance alternatives, since the project site would not be annexed into the City of Folsom under this alternative, and the water supply and conveyance alternatives occur in areas that would remain under Sacramento County jurisdiction. Some of the water supply and conveyance alternatives also include project components that would be located within the City of Rancho Cordova. According to State CEQA Guidelines CCR Section 15125(d), an EIR "shall discuss any inconsistencies between the proposed project and applicable general plans and regional plans." Although the EIR/EIS discusses inconsistencies with applicable plans and policies for several jurisdictions, the final authority for interpreting policy statements and determining the project's consistency with adopted policies rests with the governing body of the jurisdiction in question, either the City Council or the County Board of Supervisors.

The project would affect a variety of geographical areas, and several general plans are applicable to different parts of the project, including the Folsom General Plan, the Sacramento County General Plan, and the El Dorado County General Plan. For some issue areas there may not be any applicable policies of a particular jurisdiction's general plan based on the type of improvements or changes proposed within that jurisdiction. Where this is the case, the "Regulatory Framework" section includes a note that there are no applicable policies from this jurisdiction's general plan.

ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

The "Environmental Consequences and Mitigation Measures" subsection identifies the impacts of the project on the existing human and natural environment, in accordance with the State CEQA Guidelines (CCR Sections 15125 and 15143) and NEPA regulations (40 CFR 1502.16). The following discussions are included in this subsection.

- **Thresholds of Significance** provide criteria established by the lead agencies to define at what level an impact would be considered significant in accordance with CEQA. Thresholds may be quantitative or qualitative; they may be based on examples found in CEQA regulations or the State CEQA Guidelines; scientific and

factual data relative to the lead agency's jurisdiction; legislative or regulatory performance standards of Federal, state, regional, or local agencies relevant to the impact analysis; City goals, objectives, and policies (e.g., City General Plan); views of the public in the affected area; the policy/regulatory environment of affected jurisdictions; or other factors. Generally, however, the thresholds of significance used are derived from Appendix G of the State CEQA Guidelines, as amended; a Federal agency's NEPA regulations, where defined; factual or scientific information and data; and regulatory standards of Federal, state, regional, and local agencies. These thresholds also include the factors taken into account under NEPA to determine the significance of the action in terms of the context and the intensity of its effects.

- **Analysis Methodology** describes the methods, process, procedures, and/or assumptions used to formulate and conduct the impact analysis.

- **Impact Analysis** provides an assessment of the potential impacts of the project (including off-site infrastructure and roadway improvements) and alternatives on the affected environment. This assessment also specifies why impacts are found to be significant and unavoidable, significant or potentially significant, or less than significant, or why there is no environmental impact. Some of the potential impacts that may result from implementation of the Proposed Project and action alternatives may be temporary and short-term effects resulting from construction activities. However, impacts related to most agricultural and open space land conversion; modification and loss of habitats, including fill of waters of the U.S.; and disturbance of cultural resources would be permanent. The program-level impact analysis, which covers the entire 3,510-acre project area, is prepared in accordance with the State CEQA Guidelines (CCR Sections 15152 and 15168) and NEPA regulations (40 CFR 1500.4[i], 1502.4[b], and 1502.20).

- **Project impacts** are organized under "Impacts and Mitigation Measures," and "Cumulative Impacts." In some 3A "Land" topic sections, impacts have been analyzed at an additional level of detail beyond program-level analysis. Where this additional level of impact analysis was conducted, a statement that impacts under the additional detailed analysis would be the same as impacts under the program-level analysis is presented at the beginning of each 3A "Land" topic area. Project impacts are organized into three categories: direct, indirect, and cumulative impacts. Direct impacts are those that would be caused by the action and would occur at the same time and place. Indirect effects are reasonably foreseeable consequences that may occur at a later time, or at a distance that is removed from the project site. Examples of indirect effects include growth-inducing effects and other effects related to changes in land use patterns, population density, or growth rate, and related effects on the physical environment. A cumulative impact is an impact that would result from the incremental impact of the action when compounded with other past, present, and reasonably foreseeable future actions. Cumulative impacts associated with the project are discussed in a separate chapter in the EIS/EIR (Chapter 4, "Other Regulatory Requirements").

  The impacts are listed numerically and sequentially throughout each section. For example, impacts in Section 3A.3 are identified as 3A.3-1, 3A.3-2, and so on and are identified by the alternative that is applicable to the impact. For example, for the "Land" portion of the project, "NP" refers to the No Project Alternative, "NCP" refers to the No USACE Permit Alternative, "PP" refers to the Proposed Project Alternative, "RIM" refers to the Resource Impact Minimization Alternative, "CD" refers to the Centralized Development Alternative, and "RHD" refers to the Reduced Hillside Development Alternative. For the "Water" portion of the project, the alternatives are referred to as the "Proposed Off-Site Water Facility Alternative;" and Off-Site Water Facility Alternatives 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A.

  An impact statement precedes the discussion of each impact and provides a summary of the impact. The discussion that follows the impact statement includes the evidence on which a conclusion is based regarding the level of impact. Impact conclusions are made using the significance criteria described above and include consideration of the "context" of the action and the "intensity" (severity) of its effects in accordance with NEPA guidance (40 CFR 1508.27).

The level of impact of the Proposed Project Alternative and alternatives under consideration is determined by comparing estimated effects with baseline conditions. Under CEQA, the environmental setting as it exists at the time the NOP is published (as defined above and as described in the "Affected Environment" sections of Chapter 3) normally represents baseline physical conditions. Under NEPA, the No Action Alternative (expected future conditions without the project) is the baseline against which the effects of a Proposed Action and action alternatives are compared. Although, in some instances, a NEPA "no action" scenario can involve significant anticipated changes to existing conditions based on actions taken by nonfederal parties, here the NEPA no action scenario is the same as the CEQA no project scenario. This approach, being conservative from an impact assessment standpoint, is permissible under NEPA and avoids any confusion that might be caused if this document used separate CEQA and NEPA baselines. Expected future conditions without the project would be development of up to 44 individual rural residences on 80-acre parcels in the SPA as contemplated under the existing Sacramento County General Plan, and no off-site water facilities would be constructed.

- **Mitigation measures** to avoid, minimize, rectify, reduce, or compensate for significant and potentially significant impacts of the project, in accordance with the State CEQA Guidelines (14 CCR Sections 15370, 15002[a][3], 15021[a][2], and 15091[a][1]) and with NEPA regulations (40 CFR Part 1508, Section 20), where feasible, are recommended for each significant impact. Each mitigation measure is identified numerically to correspond with the number of the impact being reduced by the measure. For example, Impact 3.3-1 would be mitigated by Mitigation Measure 3.3-1. Where no mitigation is required because the impact conclusion is "less than significant," then the statement "no mitigation measures are required" is provided. Where no feasible mitigation is available to reduce impacts to a less-than-significant level, the impacts are identified as remaining "significant and unavoidable" and the statement "no mitigation measures are available" is provided with an explanation. (In some cases, all feasible and available mitigation measures are not sufficient to reduce an impact to a "less-than-significant" level. When this occurs, the impacts are described as remaining "significant and unavoidable.") No mitigation measures are proposed for the No Project Alternative; in this alternative, the project site would not be annexed by the City of Folsom, and the City has no authority or jurisdiction over any actions that would occur on the project site in this alternative. As discussed in Chapter 2, "Alternatives" the No Project Alternative assumes that the historic agricultural activities in the SPA would continue (i.e., livestock grazing) and no off-site water facilities would be constructed; therefore, no wetlands would be filled. Significant and unavoidable impacts are also summarized in Chapter 4, "Other Statutory Requirements," under the subsection "Significant and Unavoidable Adverse Impacts."

- The **Residual Significant Impacts** subsection identifies any significant impacts that would still be significant even after implementation of the mitigation measures.

3.1.4 TERMINOLOGY USED TO DESCRIBE IMPACTS

IMPACT LEVELS

The EIR/EIS for the project uses the following terminology to denote the significance of environmental impacts of the project:

- **No impact** indicates that the construction, operation, and maintenance of the project would not have any direct or indirect effects on the environment. It means no change from existing conditions. This impact level does not need mitigation.

- A **less-than-significant impact** is one that would not result in a substantial or potentially substantial adverse change in the physical environment. This impact level does not require mitigation, even if feasible, under CEQA.

- A **significant impact** is defined by CEQA Section 21068 as one that would cause "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project." Levels of significance can vary by project, based on the change in the existing physical condition. This EIR/EIS uses the CEQA definition of significant impact because it is more stringent than that of NEPA. Under CEQA, mitigation measures or alternatives to the Proposed Project must be provided, where feasible, to reduce the magnitude of significant impacts.

- A **potentially significant impact** is one that, if it were to occur, would be considered a significant impact as described above; however, the occurrence of the impact cannot be immediately determined with certainty. For CEQA purposes, a potentially significant impact is treated as if it were a significant impact.

- A **significant and unavoidable impact** is one that would result in a substantial or potentially substantial adverse effect on the environment, and that could not be reduced to a less-than-significant level even with any feasible mitigation. Under CEQA, a project with significant and unavoidable impacts could proceed, but the lead agency would be required to prepare a "statement of overriding considerations" in accordance with State CEQA Guidelines CCR Section 15093, explaining why the lead agency would proceed with the project in spite of the potential for significant impacts.

- A **beneficial impact** is an impact that is considered to cause a positive change or improvement in the environment and for which no mitigation measures are required.

- An impact may have a level of significance that is too uncertain to be reasonably determined, which would be designated **too speculative for meaningful evaluation**, in accordance with State CEQA Guidelines Section 15145. Where some degree of evidence points to the reasonable potential for a significant effect, the EIR/EIS may explain that a determination of significance is uncertain, but is still assumed to be "potentially significant," as described above. In other circumstances, after thorough investigation, the determination of significance may still be too speculative to be meaningful. This is an effect for which the degree of significance cannot be determined for specific reasons, such as because aspects of the impact itself are either unpredictable or the severity of consequences cannot be known at this time.

IMPACT MECHANISMS

Mechanisms that could cause impacts are discussed for each issue area. General categories of impact mechanisms are construction of the project and activities related to future operations, as described in Chapter 2, "Alternatives."

If the project is approved, site work could begin as early as 2011. The environmental analysis focuses on baseline at the time the NOP was published (2008). The project is expected to be built out over approximately 20 years. Project effects fall into the following three categories:

- A **temporary effect** would occur only during construction or demolition activities. The environmental analysis addresses potentially significant impacts from the direct effects of construction at the project site, including but not limited to: demolition of existing structures and buildings, direct effects associated with site development and required on- and off-site infrastructure and roadway improvements, and indirect construction impacts associated with the proposed construction staging areas, fill activities, and construction traffic.

- A **short-term effect** would last from the time construction ceases to within 3 years following construction.

- A **long-term effect** would last longer than 3 years following completion of construction. In some cases, a long-term effect could be considered a permanent effect.

- A **direct effect** is an effect that would be caused by an action and would occur at the same time and place as the action.

- An **indirect effect** is an effect that would be caused by an action but would occur later in time, or at another location, yet is reasonably foreseeable in the future.

In accordance with California Public Resources Code Section 21081.6(a), the City Council, if it approves the project, will adopt a mitigation monitoring and reporting program (MMRP) at the time that it certifies the EIR. The City Council will also be required to adopt findings identifying each significant effect of the project and the extent to which feasible mitigation measures have been adopted. (California Public Resources Code Section 21081.) USACE will also issue a record of decision (ROD) that will reflect USACE's final decision, the rationale behind the decision, and a commitment to monitoring and mitigation. According to Section 1505.2 of the NEPA regulations adopted by the CEQ, the ROD must do all of the following:

(a) State what the decision was.

(b) Identify all alternatives considered by the agency in reaching its decision, specifying the alternative or alternatives which were considered to be environmentally preferable. An agency may discuss preferences among alternatives based on relevant factors including economic and technical considerations and agency statutory missions. An agency shall identify and discuss all such factors including any essential considerations of national policy which were balanced by the agency in making its decision and state how those considerations entered into its decision.

(c) State whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why they were not. A monitoring and enforcement program shall be adopted and summarized where applicable for any mitigation.

The following terms are also used in the impact analysis:

- A **cumulative impact** is a project impact that is cumulatively considerable (and thus significant) when compounded with impacts from other past, present, and reasonably foreseeable future projects. A project's incremental effects are not "cumulatively considerable" solely because other projects would have a significant cumulative impact; rather, the project would also need to contribute considerably to worsening these impacts.

- **Construction** applies to activities associated with ground disturbance, construction of new structures and supporting infrastructure and roadways, and the demolition of existing structures and buildings.

- **No mitigation measures are required** is stated in the discussion of mitigation if the impact is considered minimal or less than significant and does not require mitigation.

- **No feasible mitigation measures are available** is stated in the discussion of mitigation if the impact is considered significant and unavoidable, and there is no feasible mitigation available to reduce the magnitude of the impact to a less-than-significant level.

3.1.5 Topics with Less Than Significant or No Impacts from the Project That are Not Carried Forward for Further Analysis in the EIR/EIS

Land

The "Land" sections of this chapter analyze all of the required topic areas under CEQA. With respect to NEPA analysis, a discussion of Indian Trust Assets is excluded from the "Land" discussions. Indian Trust Assets are legal interests in property or rights held by the United States for Indian Tribes or individuals. Trust status originates from rights imparted by treaties, statutes, or executive orders. Examples of Indian Trust Assets are lands, including reservations and public domain allotments; minerals; water rights, hunting and fishing rights, or other natural resources; and money or claims. Assets can be real property, physical assets, or intangible property

rights. Indian Trust Assets cannot be sold, leased, or otherwise alienated without Federal approval. Indian Trust Assets do not include things in which a tribe or individuals have no legal interest such as off-reservation sacred lands or archaeological sites in which a tribe has no legal property interest. No Indian Trust Assets have been identified within the Folsom sphere of influence or adjacent areas. As a result, the "Land" components of the project would have no adverse effects on Indian Trust Assets.

Tribal lands are lands that have been deeded to tribes or upon which tribes have a historical claim. There are no such lands within the Folsom sphere of influence, therefore, this issue is not addressed further in this EIR/EIS.

WATER

Based on an objective review of the Off-site Water Facility Alternatives, including responses to the NOP, a number of resource areas are not expected to have any significant program-level or cumulative impacts, when compared to existing conditions. This EIR/EIS does not contain any further analysis of the impacts of the "Water" components on the issue areas identified below. For each issue area, a brief explanation is provided for why these issue areas are not carried forward into the environmental analysis of the Off-site Water Facility Alternatives. Because these issue areas are excluded from further analysis, there is no section 3B.13, "Population, Employment, and Housing" and therefore is not analyzed for the "Water" components). The discussion of public services impacts of the "Water" components is grouped with "Utilities and Service Systems" in Section 3B.16, therefore, there is no Section 3B.14.

Mineral Resources

Sacramento County contains a wide variety of mineral resources. Both the U.S. Geological Survey and California Geological Survey have evaluated the potential locations and production capacity of various types of extractive resources throughout Sacramento County. A review of available County mineral resource maps indicates that facilities proposed as part of the "Water" components would not impede access to these delineated mineral resources within the eastern portions of Sacramento County. Although portions of the conveyance pipeline alternatives would travel in close proximity to several areas identified as containing mineral resources classified as Mineral Resource Zone (MRZ)-2; given that these alignments would be confined to the existing road right-of-way, their location would not contribute to any increased losses in the availability of known mineral resources. Based on these circumstances, no impact is expected and no mitigation is required.

Population and Housing

No single- or multi-family residential homes are located on the alternative water treatment plant (WTP) sites or within the Off-site Water Facility Alternative conveyance pipeline alignments. The water facilities would be generally constructed in roadway rights-of-way, and so would not affect planned housing units. As a result, the "Water" portion of the project would not displace existing housing or a substantial number of people necessitating the construction of replacement housing elsewhere. Thus, no impact would occur and no mitigation is required.

Issues related to the "Water" component's potential to facilitate growth-inducing and related secondary impacts are addressed in Chapter 4, "Other Required Analyses."

Public Services

The "Water" components of the project would not directly generate population growth or require new public services. The "Water" components would allow the City to provide water service to new development within the Folsom SPA, consistent with the requirements of Measure W. New development within the SPA will be subject to the requirements of the Folsom Specific Plan, which identifies performance standards and funding mechanisms to support the demand for the kinds of public services that would support new residents within the SPA, such as schools, parks, fire, police, or other public facilities. In this context, the "Water" components would have no adverse impacts on existing public services and no mitigation is required.

Issues related to the provision of emergency access and response is addressed in Section B3.15, "Traffic and Transportation – Water," of this chapter.

Indian Trust Assets

No Indian Trust Assets have been identified in the Offsite Water Facilities Study Area. As a result, the "Water" components of the project would have no adverse effects on Indian Trust Assets. Tribal lands are lands that have been deeded to tribes or upon which tribes have a historical claim. There are no such lands within the Offsite Water Facilities' area of potential effect or Study Area, therefore, this issue is not addressed further in this EIR/EIS.

3.1.6 MITIGATION MEASURES OUTSIDE LEAD AGENCY JURISDICTION

Improvements in the Off-site Water Facilities Study Area described in the "Water" sections of Chapter 3 (and some off-site improvements described in the "Land" sections) are outside the jurisdiction of the City of Folsom. These improvements would fall under the jurisdiction of other agencies, including Sacramento and El Dorado Counties, the City of Rancho Cordova, the City of Sacramento, and the California Department of Transportation (Caltrans). Neither the City of Folsom nor the project applicant(s) could control the timing or implementation of project components or mitigation measures which would take place outside of the City of Folsom's jurisdiction. Although the City would be responsible for implementing mitigation measures associated with the water supply facilities, nearly all of the improvements and mitigation actions necessary to provide water to the project site require improvements that would occur outside of the City of Folsom jurisdictional boundaries. In cases where the City is responsible for implementing mitigation outside of its jurisdiction, the City is also responsible for coordinating with the affected jurisdiction(s) to ensure that the mitigation measures proposed in this EIR/EIS may be implemented as described.

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3A.1 AESTHETICS – LAND

This section contains a program-level evaluation of visual resources. However, impacts to visual resources would be the same under each individual development phase as under the program (entire SPA) analysis.

3A.1.1 AFFECTED ENVIRONMENT

VISUAL ASSESSMENT AND VISUAL QUALITY CRITERIA

The aesthetic quality of an area is determined through the variety and contrasts of the area's visual features, the character of those features, and the scope and scale of the scene. The aesthetic quality of an area depends on the relationships between its features and their importance in the overall view. Evaluating scenic resources requires a method that characterizes visual features, assesses their quality in relation to the visual character of the surrounding area, and identifies their importance to the individuals viewing them. This process is derived from established procedures for visual assessment developed by Federal agencies, and is commonly used for a variety of project types.

Both natural and created features in a landscape contribute to its visual quality. Landscape characteristics influencing visual quality include geologic, hydrologic, botanical, wildlife, recreation, and urban features. Several sets of criteria have been developed for defining and evaluating visual quality. The criteria developed by the Federal Highway Administration in 1981, which are used in this analysis, include the concepts of vividness, intactness, and unity. According to these criteria, none of these is itself equivalent to visual quality; all three must be considered high to indicate high quality. These terms are defined as follows:

- "Vividness" is the visual power or memorability of landscape components as they combine in striking and distinctive visual patterns.

- "Intactness" is the visual integrity of the natural and human-built landscape and its freedom from encroaching elements.

- "Unity" is the visual coherence and compositional harmony of the landscape considered as a whole.

The analysis of visual resources for this project uses a qualitative approach for characterizing and evaluating the visual resources of the areas that could be affected by the project. The quality of views of areas that could be affected by the project is evaluated based on the relative degree of vividness, intactness, and unity apparent in views. Viewer sensitivity, also considered in relation to these criteria, is a function of several factors, including the following:

- visibility of the landscape,
- proximity of viewers to the visual resources,
- frequency and duration of views,
- number of viewers,
- types of individuals and groups of viewers, and
- viewers' expectations as influenced by their activity.

The viewer's distance from landscape elements plays an important role in the determination of an area's visual quality. Landscape elements are considered higher or lower in visual importance based on their proximity to the viewer. Generally, the closer a resource is to the viewer, the more dominant, and therefore visually important, it is to the viewer. The U.S. Forest Service (USFS) separates landscapes into foreground, middleground, and background views. Although this should be considered on a case-by-case basis, in general, the foreground is characterized by clear details (within 0.25 or 0.5 mile from the viewer); the middleground is characterized by loss of clear texture within a landscape creating a uniform appearance (foreground to 3–5 miles in the distance); and

the background extends from the middleground to the limit of human sight (USFS 1974). The USFS foreground, middleground, and background view approach is used in this analysis.

REGIONAL SETTING

The SPA is located in eastern Sacramento County, immediately south of the Folsom city limits. The SPA is generally bounded by U.S. Highway 50 (U.S. 50) to the north, White Rock Road to the south, Prairie City Road to the west, and the Sacramento/El Dorado County line to the east.

The SPA is located partially within in the Sierra Nevada foothills and partially within the eastern edge of the Sacramento Valley. The Sierra Nevada foothills consist of gently rolling terrain that grades upward to the east into the higher mountain elevations. The Sacramento Valley is a nearly flat alluvial plain that extends almost 180 miles from the Sacramento–San Joaquin Delta on the south and the city of Redding on the north, and approximately 50 miles from the Sierra Nevada mountains on the east and the Coast Range on the west.

VISUAL CHARACTER OF THE SPA

Visual Character

The SPA consists of over 3,500 acres of undeveloped grasslands that is currently used for cattle grazing. The City of Folsom is located to the north (Viewpoint 1, Exhibit 3A.1-1), the community of El Dorado Hills is located to the east (Viewpoint 2, Exhibit 3A.1-1), land owned by Aerojet General Corporation is located to the west (Viewpoint 3, Exhibit 3A.1-1), and undeveloped land within the unincorporated area of Sacramento County is located south of the SPA (Viewpoint 4, Exhibit 3A.1-1). In the background, the Rancho Seco Nuclear Generating Station (a decommissioned nuclear power plant), appears on the skyline to the south; on clear days, the skyscrapers of downtown Sacramento are visible to the southwest; the Sierra Nevada mountain range can be seen to the southeast; and the Coast Range is within view to the west (Viewpoint 5, Exhibit 3A.1-1).

Developed land north and east of the SPA consists of large residential and commercial developments, several of which are currently under construction. Neighborhoods and shopping centers are generally concentrated as units, and are separated by areas of open space. General visual uniformity between developments exists with use of color schemes that tend to be limited to browns, reds, and neutrals (Viewpoint 6, Exhibit 3A.1-1).

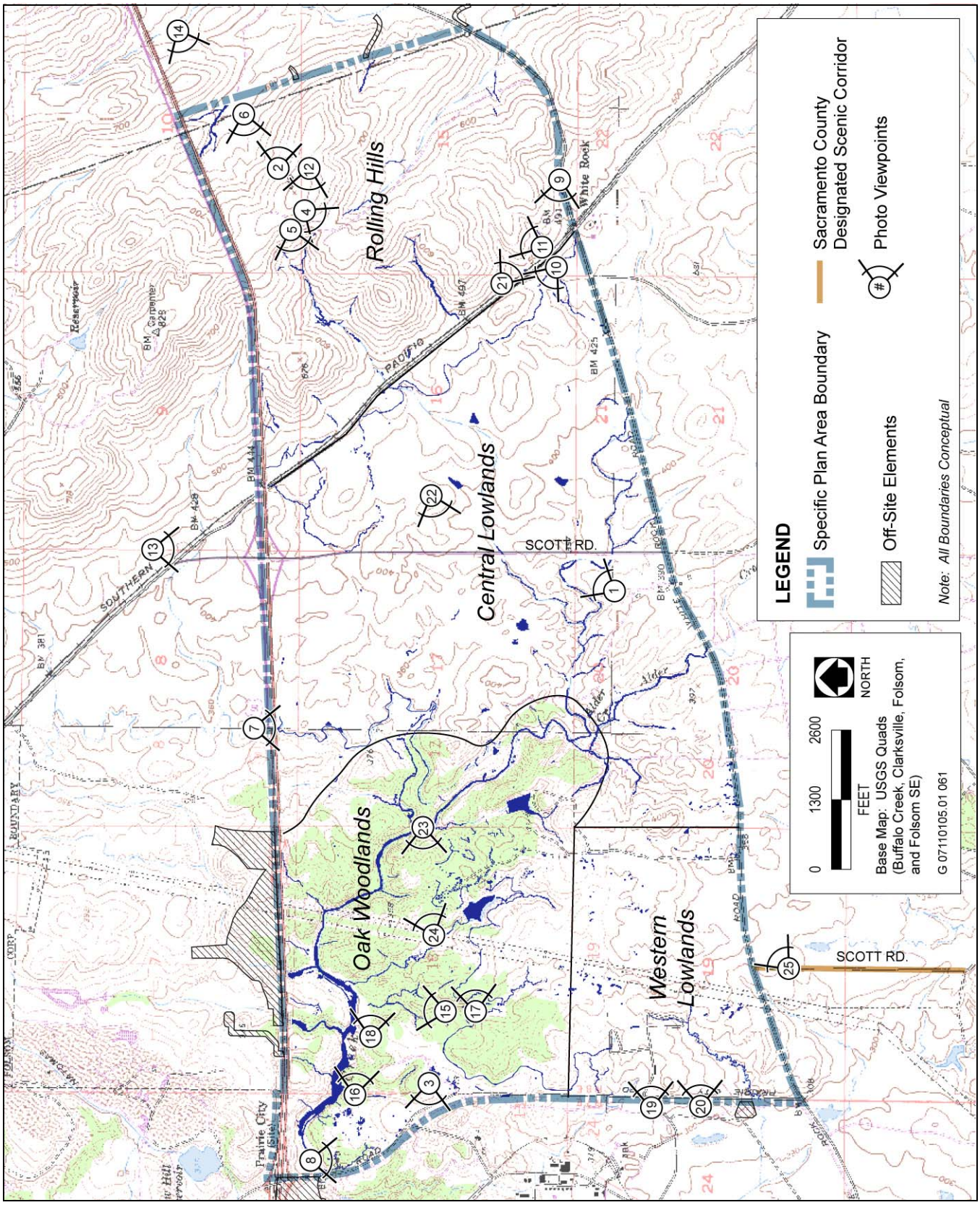
The SPA, as a whole, contains high levels of vividness, intactness, and unity. Because the visual character of this SPA is of high quality, and it is part of a large stretch of undeveloped land along U.S. 50 in eastern Sacramento County that contains oak woodlands and rock outcroppings, it is considered to be a scenic vista.

Sensitive Viewers

As described above, viewer sensitivity is related to the values and opinions of a particular group and can be generally characterized by the viewer activity, awareness, and local significance of a site. The SPA can be seen by two types of sensitive viewer groups: travelers on roadways and people within the City of Folsom.

Travelers include both the drivers and passengers on the following routes:

- U.S. 50 (Viewpoint 7, Exhibit 3A.1-1);
- Prairie City Road (Viewpoint 8, Exhibit 3A.1-1);
- White Rock Road (Viewpoint 9, Exhibit 3A.1-1);
- Scott Road (Viewpoint 10, Exhibit 3A.1-1); and
- Placerville Road (Viewpoint 11, Exhibit 3A.1-1).



Source: Sacramento Area Council Of Governments 2006, RRM Design Group 2008, and AECOM 2009

Landscapes and Viewpoints **Exhibit 3A.1-1**

Viewpoint 1: Viewpoint from the central lowlands, looking north towards the City of Folsom. Ephemeral drainage and oak trees are visible in the foreground, and Scott Road is visible in the middleground. (AECOM 2009)

Viewpoint 2: Viewpoint from the rolling hills area in the eastern portion of the SPA looking southeast toward the community of El Dorado Hills in the middleground. Rock outcroppings are visible in the foreground. (AECOM 2009)

Representative Photographs (Viewpoints 1 and 2) **Exhibit 3A.1-1**

Viewpoint 3: Viewpoint from the oak woodlands at the western SPA boundary, looking northwest toward the entrance to Aerojet General Corporation facilities west of the SPA. Prairie City Road is in the foreground, oak woodlands on Aerojet General Corporation property are in the middleground, and the City of Folsom is visible in the background. (AECOM 2009*)*

Viewpoint 4: View from the rolling hills in the eastern portion of the SPA, looking south. An ephemeral drainage, a dirt road, and agricultural fencing are located in the foreground, the central lowlands and oak woodland areas of the SPA are located in the middleground, and the Sacramento Valley is located in the background. (AECOM 2009)

Representative Photographs (Viewpoints 3 and 4) **Exhibit 3A.1-1**

Viewpoint 5: View from the rolling hills looking west. The central and eastern lowlands, and oak woodlands on the SPA are visible in the middleground. The Sacramento Valley and the Coast Range are located in the background. (AECOM 2009)

Viewpoint 6: View from the rolling hills near the El Dorado County line towards the community of El Dorado Hills and the Stonebrier residential development. (AECOM 2009)

Representative Photographs (Viewpoints 5 and 6) **Exhibit 3A.1-1**

Viewpoint 7: View from the north side of U.S. 50 looking toward the SPA. Note the oak woodlands in the middleground and high-voltage electrical transmission lines and towers in the background. (AECOM 2009)

Viewpoint 8: View from Prairie City Road looking south. Alder Creek is visible in the foreground, the oak woodlands area of the SPA is located on the left side of the photograph, and Aerojet General Corporation property (which is part of the Easton development project) is located on the right side of the photograph. (AECOM 2009)

Representative Photographs (Viewpoints 7 and 8) **Exhibit 3A.1-1**

Viewpoint 9: View of the SPA from White Rock Road looking west. Note the quartz rock outcropping on the right side of the photograph. The central lowlands, eastern lowlands, and oak woodlands are located in the middleground of the photograph. (AECOM 2009)

Viewpoint 10: View of the SPA from Scott Road looking northwest. The central lowlands are located in the foreground and middleground, and the City of Folsom is located in the background. (AECOM 2009)

Representative Photographs (Viewpoints 9 and 10) **Exhibit 3A.1-1**

Viewpoint 11: View of the SPA from Scott Road looking northeast. Note the radio towers in the middleground, located within the rolling hills area. The City of Folsom is partially visible in the background. (AECOM 2009)

Viewpoint 12: View of the radio towers located within the rolling hills in the eastern portion of the SPA. (AECOM 2009)

Representative Photographs (Viewpoints 11 and 12) **Exhibit 3A.1-1**

Viewpoint 13: View from Handy Family Park, located within the City of Folsom. The middleground contains a view of the central lowlands and oak woodlands portion of the SPA. The Coast Range is located in the background. (AECOM 2009)

Viewpoint 14: View from Town Center Boulevard in El Dorado Hills. The radio towers located within the rolling hills area of the SPA are within view in the middleground of the photograph. (AECOM 2009)

Representative Photographs (Viewpoints 13 and 14) **Exhibit 3A.1-1**

Viewpoint 15: View of oak trees and water feature within the oak woodlands area of the central portion of the SPA. (AECOM 2009)

Viewpoint 16: View of Alder Creek from within the SPA, looking east. (AECOM 2009)

Representative Photographs (Viewpoints 15 and 16) **Exhibit 3A.1-1**

Viewpoint 17: View within the oak woodland area of the SPA, looking east. Electrical transmission lines in the foreground are oriented in an east-west direction, and the high-voltage electrical transmission lines in the middleground are oriented in a north-south direction. (AECOM 2009)

Viewpoint 18: View of the SPA from within the oak woodlands. Note rock outcroppings. (AECOM 2009)

Representative Photographs (Viewpoints 17 and 18) **Exhibit 3A.1-1**

Viewpoint 19: View from Prairie City Road, looking east toward the eastern lowlands area of the SPA. Note the scattered oak trees, high-voltage electrical transmission lines, and electrical transmission towers. (AECOM 2009)

Viewpoint 20: View from Prairie City Road looking toward on-site monitoring wells, used to assess the status of remediation of the Area 40 Superfund Site. (AECOM 2009)

Representative Photographs (Viewpoints 19 and 20) **Exhibit 3A.1-1**

Viewpoint 21: View from within the central lowlands portion of the SPA, east of Scott Road. Note the rock outcroppings and agricultural fencing in the foreground, and oak woodlands in the background. (AECOM 2009)

Viewpoint 22: View from Placerville Road looking south onto the eastern portion of the SPA. Note the electrical power lines and railroad tracks. (AECOM 2009)

Representative Photographs (Viewpoints 21 and 22) **Exhibit 3A.1-1**

Viewpoint 23: View from Scott Road looking west toward the oak woodlands on the SPA. Note the agricultural fencing and rock outcroppings in the foreground. (AECOM 2009)

Viewpoint 24: View from the oak woodlands, just east of the high-voltage electrical transmission lines, looking east. The radio towers in the rolling hills are visible on the horizon, and U.S. 50 is within view on the left side of the photograph. (AECOM 2009)

Representative Photographs (Viewpoints 23 and 24) **Exhibit 3A.1-1**

Viewpoint 25: View from Scott Road, south of White Rock Road, looking toward the eastern side of the SPA. Middleground views include the central lowland and the radio towers on the rolling hills. (AECOM 2009)

Representative Photographs (Viewpoint 25) **Exhibit 3A.1-1**

Sensitive viewer groups within the city of Folsom, community of El Dorado Hills, and unincorporated portions of Sacramento County include:

- Residents (Viewpoint 13, Exhibit 3A.1-1); and
- Employees and patrons at businesses (Viewpoint 14, Exhibit 3A.1-1).

For the purposes of this discussion, the SPA is separated into four distinct landscape areas: oak woodlands, western lowlands, central lowlands, and rolling hills (see Exhibit 3A.1-1). The following is a discussion of each landscape area that considers visual quality and viewer sensitivity.

Oak Woodlands

Visual Character

The oak woodlands are located in the northwestern portion of the SPA. The landscape of this area is characterized by low hills covered with oak trees, and narrow valleys containing ephemeral drainages and creeks (Viewpoint 14, Exhibit 3A.1-1). Views from within the oak woodlands are generally limited to the foreground, and include oak trees, Alder Creek, drainages, ponds, swales, and grassy hills. High-voltage electrical transmission lines and towers run through the middle of this area in a north-south direction, and electrical transmission lines on wooden poles run in an east-west direction (Viewpoint 17, Exhibit 3A.1-1). These are visible from certain viewpoints, although the topography and concentration of trees in this area provides a barrier against these encroachments from the majority of perspectives. Similarly, the City of Folsom and U.S. 50, visible to the north, and radio towers equipped with lights to provide airspace safety are located on the rolling hills area to the east, are visible only from certain locations within the oak woodlands, and are not substantial encroachments on far-reaching views (Viewpoint 24, Exhibit 3A.1-1). In addition, one rural residence is located within the south-eastern corner of the

oak woodlands; however, it is not visible from any existing public roadways or people located within the city of Folsom.

Because the oak woodlands are located within gently rolling terrain, the edges of this area and some peaks in elevation provide broad views of thousands of acres of open space. Although development exists to the east of the SPA, it is not visible to viewers within the oak woodlands, and the resulting view is that of vast undeveloped land. The southern edge of the oak woodlands provides a middleground view of the eastern lowland and a background of gently rolling grasslands. This presents the viewer with a sense of continuous, undeveloped open space covered in low-lying vegetation. Although industrial buildings on Aerojet General Corporation property are visible at some locations across Prairie City Road, views to the west are dominated by oak woodlands and grass-covered hills. (Viewpoint 8, Exhibit 3A.1-1.) The oak woodlands are viewed by travelers on U.S. 50, Prairie City Road south of U.S. 50, rural residents near and within the SPA, and people in the southern portion of the City of Folsom. It is an area of high visual quality. The visual assessment criteria for the oak woodlands landscape area are provided below.

- **Vividness:** The oak woodlands are essentially covered in vegetation consisting of grasslands and tree cover. This landscape is traversed by numerous water features including seasonal wetlands, stock ponds, creeks, ephemeral drainage, and most notably Alder Creek, located at the northern extent of the oak woodlands (Viewpoint 16, Exhibit 3A.1-1). The vividness of this landscape remains year-round. During the winter months, the oak trees lose their leaves and the annual grasses become green, while during summer months when the oak trees are covered in leaves, the grasses lose their color, becoming light brown. In contrast, the alluvial plain created by Alder Creek remains vegetated year-round, and provides an undeveloped riparian landscape. Vegetation near Alder Creek includes oak trees, shrubs such as blackberry, and riparian vegetation including cattails. Two sets of electrical transmission lines travel through the oak woodlands: one in a north-south (high-voltage lines) direction and the other in an east-west direction. The north-south line is the larger encroachment of the two, consisting of two sets of towers standing well above the tree line, as compared to the east-west line, which tends to blend in the with the surrounding landscape (Viewpoint 17, Exhibit 3A.1-1). Although these electrical transmission lines are substantial encroachments on the oak woodland landscape from points where they are visible, in general they do not impede the view. Because the oak woodlands offer a memorable landscape that provides a distinct pattern within the project vicinity, it is considered to have high levels of vividness.

- **Intactness:** As described above, two sets of electrical transmission lines exist within the oak woodlands. These, in addition to agricultural accessories, including fences and dirt roadways, disrupt the integrity of the landscape. However, the oak woodlands cover approximately one-quarter of the SPA, and although both sets of electrical transmission lines bisect this area and other encroachments exist, the trees and topography generally obstruct their view. In addition, water features such as ponds, Alder Creek, and seasonal wetlands, compliment the landscape and provide a sense of visual order (Viewpoint 18, Exhibit 3A.1-1). Therefore, although encroachments exist within the oak woodlands, due to their locations and the nature of the landscape, they do not substantially degrade the visual integrity of the area.

- **Unity:** Unity within the oak woodlands is marked by gently rolling hills covered with trees, grasses, and a variety of water features. Similar to the discussion above, encroachments, including electrical transmission lines, dirt roadways, and agricultural accessories do not substantially disrupt the coherence of the view. The overall view of the oak woodlands provides a sense of visual coherence and compositional harmony.

Viewer Sensitivity

Travelers on U.S. 50, Prairie City Road, and White Rock Road; residents and people within the City of Folsom; and a rural residence located on the SPA, have a clear view of the oak woodland area (Viewpoint 8, Exhibit 3A.1-1). Encroachments may be visible to the motorist, but do not intrude upon the landscape to a degree that would destroy the vividness, intactness, or unity of the site. In addition, the view of the SPA is located along the

longest stretch of undeveloped land on U.S. 50 within eastern Sacramento County, of which several miles are oak woodlands, which is viewed every day by thousands of motorists traveling into and out of Sacramento during the daily working commute. For these reasons, viewer sensitivity is considered to be high.

Western Lowlands

Visual Character

The western lowlands are located in the southeastern portion of the SPA. The landscape of this area is characterized by less topographical variation than other areas of the SPA (i.e., oak woodlands and rolling hills), and is covered with annual grasses and scattered trees (Viewpoint 19, Exhibit 3A.1-1). Views within the western lowlands are generally limited to the middleground and background, due to the generally flat land. Foreground views are limited to annual grasses and scattered trees. Views to the south and east of the western lowlands provide a continuation of open space. To the west, scattered industrial buildings, dirt piles, and chain-link fencing, located on Aerojet General Corporation property, are visible. These industrial buildings and structures are located more than one-quarter mile from the edge of the SPA, and while they are visible, they are not a substantial disruption to the views from the area as a whole. In the background, the City of Folsom is visible to the north; and on clear days, one can see the Sierra Nevada mountain range to the east and Mount Diablo to the southwest. As described below, the vividness, unity, and intactness are considered to be of high value. The visual assessment criteria for the western lowlands landscape area are provided below.

- **Vividness:** As described above, the western lowlands are characterized by a relatively flat area of the SPA, covered with annual grasses and scattered trees. Various encroachments exist in this part of the SPA, including fencing for agricultural purposes, electrical transmission lines, and monitoring wells installed in Area 40 (a Federally listed Superfund Site) (Viewpoint 20, Exhibit 3A.1-1). However, these items are located in close proximity to each other in the western portion of the site and do not provide a substantial distraction to the landscape as a whole. Furthermore, views from the SPA adjacent to White Rock Road and Prairie City Road provide an expansive view of agricultural land to the south and east, characterized by flat vegetation and terrain. Certain vantage points in this area offer a rare opportunity to view undisturbed open space with a clear view of the Sacramento Valley to the south, the undeveloped foothills of the Sierra Nevada mountains to the east, and oak woodlands to the north.

- **Intactness:** As described above, multiple encroachments exist within the western lowlands (Viewpoint 19, Exhibit 3A.1-1). However, the majority of this area provides vast views of undeveloped grasslands, which most people would consider to be aesthetically pleasing. Although encroachments exist, they are few in number, and are concentrated in the western portion of the western lowlands area, resulting in an overall highly intact landscape.

- **Unity:** The western lowlands as a landscape provide a viewer with high levels of visual coherence. This area is exemplary of California's Central Valley rangeland, including gently rolling hills, which contrasts with development in the area. Although there are several encroachments within the area, they are few in number and do not detract from the overall sense of unity; furthermore, the area is essentially surrounded by open space, allowing for scenery with high levels of visual coherence and compositional harmony.

Viewer Sensitivity

Viewers of the western lowlands include travelers along Prairie City Road and White Rock Road. Viewers on both roads can see encroachments (fences and electrical transmission lines) from certain vantage points that degrade the view. However, the general experience of driving on both Prairie City Road and White Rock Road includes far-reaching views of pristine, gently rolling hills covered in annual grasses, and the presence of the Sierra Nevada and Coast Range in the distance. Motorists are likely to find this area to be highly aesthetically pleasing and a welcome change to dense development in nearby areas; thus, viewer sensitivity is considered to be high.

Central Lowlands

Visual Character

The central lowlands are located in the middle portion of the SPA. The landscape of this area is characterized by gently rolling hills covered with annual grasses and scattered trees, water features, and rock outcroppings (Viewpoint 21, Exhibit 3A.1-1). Foreground views consist of far-reaching grassland, rock outcroppings, agricultural fencing, scattered ruins of former structures, various ephemeral drainages, and ponds. Middle ground views consist of farmland to the south, oak woodlands to the west, the City of Folsom and U.S. 50 to the north, and the rolling hills area of the SPA to the east. In the background, the Sierra Nevada mountains are visible to the east, and Mount Diablo is within view to the southwest. As described below, the vividness, intactness, and unity of this area is considered to be of high value. The visual assessment criteria for the central lowlands landscape area are provided below.

- **Vividness:** The central lowlands are characterized by a relatively flat area of the SPA that is covered with annual grasses and the occasional oak tree. In contrast to the western lowlands, the central lowlands have more topographical variation, and contain more water features, agricultural accessories, and rock outcroppings. Encroachments consist of agricultural fencing, electrical transmission lines, remnants of buildings, Scott Road, Placerville Road, and abandoned railroad tracks (Viewpoint 22, Exhibit 3A.1-1). However, even with these encroachments, the majority of this area provides expansive views of undeveloped grasslands dotted with rock outcroppings and oak woodlands (Viewpoint 23, Exhibit 3A.1-1). The view is memorable and highly vivid.

- **Intactness:** As described above, fencing, electrical transmission lines, building remnants, roadways, and abandoned railroad tracks encroach upon the landscape of this area. These types of structures often exist within agricultural land and do not act as a substantial distraction to the landscape as a whole. Furthermore, the topography of the area shields views of these encroachments at many locations within the area, resulting in high levels of intactness.

- **Unity:** The shallow hills and valleys, water features, and agricultural features within the central lowlands provide a classic view of California annual grassland. This area has high levels of unity.

Viewer Sensitivity

Travelers along U.S. 50 have views of both the developed City of Folsom to the north and the open space at the SPA to the south. Some motorists and passengers may be visually drawn toward the large buildings, lighting, and other human-made structures within the City of Folsom. However, the central lowlands appear as the beginning of the Sierra Nevada mountains while traveling east, and of the Sacramento Valley while traveling west. Due to the change in landscape, viewers are likely to be drawn toward the SPA, rather than the City of Folsom while traveling adjacent to this area. Similarly, travelers on the majority of Scott and Placerville Roads have expansive views of the entire SPA, which most people would consider to be highly aesthetically pleasing. In addition, the City of Folsom, located north of the SPA, has been developed at a higher elevation than the central lowlands area, and many homes and businesses contain windows that face toward the SPA. This orientation indicates a visual preference toward the SPA, and therefore high viewer sensitivity.

Rolling Hills

Visual Character

The rolling hills area is located in the eastern portion of the SPA, in the foothills of the Sierra Nevada mountains. The landscape of this area is characterized by steep hills and shallow narrow valleys, containing ephemeral drainages and creeks, and covered with annual grasses and scattered oak trees (Viewpoint 22, Exhibit 3A.1-1). Foreground views consist of grassland, rock outcroppings, agricultural accessories, various ephemeral drainages,

and ponds. Middleground views consist of farmland to the south and west, the City of Folsom and U.S. 50 to the north, and the community of El Dorado Hills to the east. In the background, the Sierra Nevada mountains are visible to the southeast, grasslands and agricultural fields to the south, and the Coastal Range to the west. On a clear day, skyscrapers within the City of Sacramento, and Mount Diablo, are visible to the southwest. As described below, the vividness, intactness, and unity of this area is considered to be of high value. The visual assessment criteria for the rolling hills landscape area are provided below.

- **Vividness:** The rolling hills are covered in annual grasses, scattered trees, and several ephemeral drainages and perennial marshes. The hills offer a vantage point for views of the Sacramento Valley, and thousands of acres of undeveloped grasslands and oak woodlands. Views toward this portion of the SPA provide striking and distinctive views of essentially pristine rolling hills. Motorists, in particular, are likely to appreciate the contrast between this portion of the SPA and nearby developed land. The rolling hills are a unique feature, bordered on the north and east with developments, and open space and farmland to the south and west. This area is considered to be highly vivid.

- **Intactness:** Radio towers equipped with lighting to provide airspace safety are located in the northeastern corner of the rolling hills are visible due to placement at a relatively higher elevation than the rest of the SPA (Viewpoint 11, Exhibit 3A.1-1). As with other areas within the SPA, fencing and dirt roads also act as encroachments. However, the landscape is generally unchanged from its natural state. With the exception of the immediate land surrounding the radio towers and corresponding service road, there is no grading or other human-caused alteration to this area. Because the existing encroachments are minor, this area is considered to have high levels of intactness.

- **Unity:** As discussed above, the rolling hills are essentially free from discernible encroachments. The landscape is characterized by grassy hillsides, exemplary of the Sierra Nevada foothills. With the exception of the northern and eastern edge of this area where one may be visually drawn toward nearby developments, the landscape as a whole contains high levels of visual coherence and compositional harmony.

Viewer Sensitivity

Travelers along U.S. 50 may be visually drawn toward development within the City of Folsom to the north. However, the presence of unaltered open space is likely to be appreciated in a region that has become increasingly more developed in recent years. Additionally, nearby housing units are directed toward the SPA, which is likely due to the spectacular view offered by the SPA as a whole. The rolling hills area is integral to this view, as it contains only a minimal amount of grading and the radio towers. Most people would look upon this area with appreciation for its natural beauty. Viewer sensitivity is considered to be high.

SCENIC ROADWAY DESIGNATION

Scott Road, from White Rock Road south to Latrobe Road, is a designated scenic corridor in the Sacramento County General Plan (Exhibit 3A.1-1, Viewpoint 25). While this portion of Scott Road is not located within the SPA, the rolling hills, central lowlands, and western lowlands of the SPA are visible from the scenic corridor. According to the Scenic Highways Element of the Sacramento County General Plan, the visual character of the roadway, characterized as grasslands and cattle-grazing lands, was considered to be particularly scenic and thus warranted scenic corridor protection.

3A.1.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

No Federal plans, policies, regulations, or laws are applicable to the Proposed Project or alternatives under consideration.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

California Department of Transportation

The California Department of Transportation (Caltrans) manages the California Scenic Highway Program. The goal of the program is to preserve and protect scenic highway corridors from changes that would affect the aesthetic value of the land adjacent to designated highways. However, there are no state-designated scenic highways in the vicinity of the SPA (Caltrans 2008).

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

Sacramento County General Plan

The following goals and policies of the Sacramento County General Plan (1993) are applicable only to the Proposed Project and the other alternatives under consideration.

Conservation Element

GOAL: Open space lands in Sacramento permanently protected through coordinated use of regulation, acquisition, density transfer, and incentive programs.

- **Policy OS-1:** Permanently protect, as open space, areas of natural resource value, including wetlands preserves, riparian corridors, woodlands, and floodplains.

- **Policy OS-2:** Maintain open space and natural areas that are interconnected and of sufficient size to protect biodiversity, accommodate wildlife movement and sustain ecosystems.

Scenic Highways Element

GOAL 1: To preserve and enhance the aesthetic quality of scenic roads without encouraging unnecessary driving by personal automobile.

- **Policy 10:** To provide scenic corridor protection for Scott Road from White Rock Road south to Latrobe Road, Michigan Bar Road, and Twin Cities Road from Highway 160 east to Highway 99.

El Dorado County General Plan

The following goals and policies of the El Dorado County General Plan (2004) are applicable only to the two local roadway connections from the Folsom Heights property off-site into El Dorado Hills under the Proposed Project Alternative. There are no El Dorado County goals and policies that are applicable to the No Project Alternative or the other four action alternatives.

Land Use Element

Topography and Native Vegetation

- **Policy 2.3.1.1:** The County shall continue to enforce the tree protection provisions in the Grading Erosion and Sediment Control Ordinance and utilize the hillside road standards.

Hillsides and Ridge Lines

- **Policy 2.3.2.1:** Disturbance of slopes thirty (30) percent or greater shall be discouraged to minimize the visual impacts of grading and vegetation removal.

Corridor Viewsheds

- **Policy 2.6.1.2:** Until such time as the Scenic Corridor Ordinance is adopted, the County shall review all projects within designated State Scenic Highway corridors for compliance with State criteria.

Lighting Standards

- **Policy 2.8.1.1:** Development shall limit excess nighttime light and glare from parking area lighting, signage, and buildings. Consideration will be given to design features, namely directional shielding for street lighting, parking lot lighting, sport field lighting, and other significant light sources, that could reduce effects from nighttime lighting. In addition, consideration will be given to the use of automatic shutoffs or motion sensors for lighting features in rural areas to further reduce excess nighttime light.

Conservation and Open Space Element

Wetlands

- **Policy 7.3.3.5:** Rivers, streams, lakes and ponds, and wetlands shall be integrated into new development in such a way that they enhance the aesthetic and natural character of the site while disturbance to the resource is avoided or minimized and fragmentation is limited.

City of Folsom General Plan

The following goals and policies of the City of Folsom General Plan (1993) are applicable to the Proposed Project and the other four action alternatives. There are no City of Folsom goals and policies that are applicable to the No Project Alternative.

Open Space and Conservation Element

- **Policy 1.1:** New developments shall preserve and/or enhance to the maximum degree feasible, the existing natural vegetation, landscape features and open space, consistent with the Goals and Policies of this Plan.

- **Policy 1.2:** Existing viewsheds and opportunities for viewsheds should be incorporated into the design of new developments.

- **Policy 3.2:** Developments should be compatible with the natural features and the buildings that surround them. Compatibility will be measured by the size and configuration of buildings in a project, the use of materials and landscaping, the preservation of existing vegetation and landscape features, and the location of entrance and exit routes on the SPA.

- **Policy 6.1:** The Sphere of Influence shall include those parcels of land adjacent to the city limit whose development could have significant visual, traffic, service and environmental impacts on Folsom so that the City may influence the ultimate development of those parcels.

City of Folsom Hillside Development Guidelines

On February 14, 1995, the City of Folsom Planning Department adopted Resolution No. 4604—Hillside Development Guidelines—the purpose of which is to illustrate key design principles and issues that City staff will use in evaluating applications for development of any site within hillside areas of the City. The guidelines address street design, grading, site design, parking, drainage, architecture, landscaping, visual impact, and preservation of natural features, and are based on the City's Hillside Development Procedures and Standards Ordinance (Ordinance No. 798).

3A.1.3 Environmental Consequences and Mitigation Measures

Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. These thresholds also encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. The Proposed Project or alternatives under consideration were determined to result in a significant impact related to aesthetic resources if they would do any of the following:

- have a substantial adverse effect on a scenic vista;
- substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- substantially degrade the existing visual character or quality of the site and its surroundings; or
- create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Analysis Methodology

This visual impact analysis is based on field observations conducted by AECOM in February 2009 and a review of maps and aerial photographs. Analysis of the project's impacts was based on evaluation of the changes to the existing visual resources that would result from project implementation. In making a determination of the extent and implications of the visual changes, consideration was given to:

- specific changes in the visual composition, character, and valued qualities of the affected environment;
- the visual context of the affected environment;
- the extent to which the affected environment contained places or features that have been designated in plans and policies for protection or special consideration; and
- the numbers of viewers, their activities, and the extent to which these activities are related to the aesthetic qualities affected by the project-related changes.

It should be noted that an assessment of visual quality is a subjective matter, and reasonable people can disagree as to whether alteration in the visual character of the SPA would be adverse or beneficial. For this analysis, a conservative approach was taken, and the potential for substantial change to the visual character of the SPA is generally considered a significant impact.

Impact Analysis

Impacts that would occur under each alternative development scenario are identified as follows: NP (No Action/No Project), NCP (No USACE Permit), PP (Proposed Project), RIM (Resource Impact Minimization), CD (Centralized Development), and RHD (Reduced Hillside Development). The impacts for each alternative are compared relative to the PP at the end of each impact conclusion (i.e., similar, greater, lesser).

IMPACT 3A.1-1 Substantial Adverse Effect on a Scenic Vista. *Project implementation would result in the degradation of the visual quality of a scenic vista.*

On-Site and Off-Site Elements

NP

The high scenic quality of the landscape at the SPA is based on the existing vast views of grasslands, rolling hills, and oak woodlands. The No Project Alternative could include development of up to approximately 44 residential units and associated agricultural land uses in Sacramento County under the existing AG-80 zoning, but no off-site water facilities would be developed. The development of rural housing and associated agricultural activities would not substantially degrade the scenic quality of the SPA, because the general character would remain intact. Under the No Project Alternative, scenic vistas in the SPA would generally remain the same as under the existing conditions. Therefore, this **direct** impact would be **less-than-significant. No indirect** impacts would occur. ***[Lesser]***

On-Site Elements

NCP, PP, RIM, RHD

A scenic vista is generally considered a view of an area that has remarkable scenery or of a resource that is endemic to the area. The SPA is located on approximately 3,500 acres of undeveloped open space. The scenery consists of grasslands on rolling hills and narrow valleys, waterways, and oak woodlands. Existing development is generally limited to the perimeter, and includes agricultural fencing, electrical transmission lines, and radio towers. Because the SPA contains high levels of vividness, intactness, and unity, and due to its location along U.S. 50 where it is seen by thousands of motorists, viewer sensitivity is considered to be high. This region is part of the Sierra Nevada foothills and the Central Valley, and is exemplary of those landscapes and of resources that are endemic to the area.

Project implementation would substantially degrade this scenic vista. The compositional harmony of this area relies upon the flow of oak woodlands, to gently rolling grasslands, to steep vegetation-covered hillsides. The No USACE Permit, Proposed Project, Resource Impact Minimization, and Reduced Hillside Development Alternatives would include a minimum of 30% open space pursuant to the LAFCo Resolution, which would therefore provide preservation of the existing scenic qualities on over 1,000 acres of the SPA. However, the scenic qualities of the SPA are reliant on coherence between the different landscape types (see Viewpoint 21, Exhibit 3A.1-1.) Furthermore, while implementation of the No USACE Permit or Resource Impact Minimization Alternative would result in an additional several hundred acres of open space as compared to the Proposed Project Alternative, they would not result in substantially less alteration of scenic vistas. Views along nearby roadways would change to housing developments, schools, and general commercial endeavors. In addition, viewsheds that include the SPA are part of thousands of acres of open space that would no longer exist. Instead, this area would contain development that would substantially degrade the existing scenic view of the landscape. This area would become of similar visual quality to nearby developed land, and would no longer be considered a unique or scenic vista.

Because the project-related alterations would have a substantial adverse effect on a scenic vista, this **direct** impact is **significant**. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure 3A.1-1: Construct and Maintain a Landscape Corridor Adjacent to U.S. 50.

The project applicant(s) for all project phases shall fund, construct, and maintain a landscaped corridor within the SPA, south of U.S. 50. This corridor shall be 50 feet wide, except that the landscaped corridor width shall be reduced to 25 feet adjacent to the proposed regional mall. Landscaping plans and specifications shall be approved by Caltrans and the City of Folsom, and constructed by the project applicant(s) before the start of earthmoving activities associated with residential or commercial units. Landscaped areas would not be required within the preserved oak woodlands. As practicable, landscaping shall primarily contain native and/or drought tolerant plants. Landscaped corridors shall be maintained in perpetuity to the satisfaction of the City of Folsom.

Implementation: Project applicant(s) of all project phases.

Timing: 1. Plans and specifications: before approval of grading plans and building permits

2. Construction: before the start of earthmoving activities associated with residential and commercial units

3. Maintenance: in perpetuity

Enforcement: City of Folsom Community Development Department and Caltrans

CD

The Centralized Development Alternative would contain approximately 40% more open space than the Proposed Project Alternative. Development would be concentrated toward the center of the SPA, leaving the oak woodlands and rolling hills portions less developed than under the Proposed Project Alternative. However, because commercial development in the rolling hills would still occur south of U.S. 50, the majority of the sensitive viewers (commuters traveling along U.S. 50), would likely consider the scenic qualities to be degraded. Viewers within the community of El Dorado Hills and motorists traveling within the southern portion of Scott Road (past the commercial development) and along White Rock Road would see the preserved view of the hillside.

The existing SPA is considered to be of high quality. This designation is reliant on sweeping views of the Central Valley, and the vividness, intactness, and unity of the existing SPA as a whole. Although preservation of the majority of the rolling hills and oak woodlands would leave certain scenic vistas within the SPA, in general, scenic views would be substantially altered. This impact would be **direct** and **significant. No indirect** impacts would occur **[*Lesser*]**.

Mitigation Measure: Implement Mitigation Measure 3A.1-1.

Off-Site Elements

The proposed off-site detention basin would be located on Aerojet General Corporation property, west of Prairie City Road. This landscape is similar to the western lowlands with the exception of an approximately 8-foot-high chain link fence surrounding its perimeter. The detention basin would be constructed with bermed sides, and would therefore appear as a steeply graded hill of bare soil. Although this would degrade the landscape, this area is not particularly scenic due to fencing and industrial buildings visible in the background. Because the area associated with the detention basin is not a scenic vista, impacts associated with construction of the detention basin would be **direct** and **less than significant**. **No indirect** impacts would occur.

The proposed freeway interchange improvements, the El Dorado County road connections, and the Rowberry Drive Overcrossing would be located in areas that are currently surrounded by existing urban development that

does not contain a scenic vista. Therefore, the impacts would be **direct** and **less than significant**. **No indirect** impacts would occur.

Construction of the proposed sewer force main underneath U.S. 50 would require digging a trench for pipeline placement, then back filling and completely covering all disturbed ground. Because these impacts would be short-term, temporary impacts, and no longer visible upon completion of construction, and because they would occur in a developed urban area that does not contain a scenic vista, they would be **direct** and **less than significant**. **No indirect** impacts would occur.

Mitigation Measure: No mitigation measures are required.

Implementation of the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternative would permanently and substantially alter the scenic vista at the SPA. Implementation of Mitigation Measure 3A.1-1 would reduce the impact of substantial alteration of a scenic vista, but not to a less-than-significant level. No other feasible mitigation measures are available to reduce impacts associated with the alteration of scenic vistas from project development to a less-than-significant level. Therefore, this impact remains **significant and unavoidable**.

IMPACT 3A.1-2 Damage to Scenic Resources Within a Designated Scenic Corridor. *Project implementation could damage the character of the viewshed from a County-designated scenic corridor.*

On-Site and Off-Site Elements

NP

Although the SPA does not contain, nor is it visible from, a state-designated scenic highway, Scott Road south of White Rock Road is a designated scenic corridor in Sacramento County because it is considered to be located within an especially scenic rural portion of Sacramento County. The Scenic Highways Element of the Sacramento County General Plan describes views from this roadway as consisting of grasslands and cattle-grazing lands. The No project alternative could include development of up to approximately 44 residential units and associated agricultural land uses in Sacramento County under the existing AG-80 zoning, but would not include the construction of any off-site water facilities. However, the development of up to 44 rural residences scattered over 3,500 acres would have little or no impact on the existing grasslands and cattle-grazing lands in the SPA; therefore, this **direct** impact would be **less-than-significant**. **No indirect** impacts would occur. ***[Lesser]***

On-Site Elements

NCP, PP, RIM, CD, RHD

Views of the SPA from Scott Road, south of White Rock Road, consist of grasslands on rolling hills and scattered oak trees. Encroachments of these views are generally limited to agricultural fencing, electrical transmission lines, and radio towers; all of which are typical of rural landscapes. As discussed above under the No Project Alternative, the Scenic Highways Element of the Sacramento County General Plan describes views from this roadway to consist of grasslands and cattle-grazing lands. These views are exemplary of rural Sacramento County landscape.

Project implementation would substantially damage views from the portion of Scott Road designated as a scenic corridor. The Proposed Project and the other four action alternatives would result in conversion of the existing grassland and cattle grazing land to urban development over several thousand acres. After project implementation, the site would contain views of housing developments, landscaping, and alteration of topography from grading activities that would no longer provide exemplary views of rural Sacramento County landscape that would

substantially damage the existing character of the landscape. These views would damage the scenic character of the northern portion of Scott Road.

Because the project-related alterations would have a substantial damage on scenic resources within a County-designated scenic corridor, this **direct** impact would be **significant**. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure: No feasible mitigation measures are available.

Off-Site Elements

The off-site elements would not be visible from the portion of Scott Road that is designated as a scenic corridor in the Sacramento County General Plan. Therefore, there would be **no direct** or **indirect impact**.

Mitigation Measure: No mitigation measures are required.

Implementation of the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives would permanently and substantially alter the scenic character of the SPA from open space to urban development, and would therefore substantially damage the viewshed from the northern portion of Scott Road. These changes are inherent to the change from a rural to urban development pattern, and no feasible mitigation measures are available to reduce impacts associated with the damage of scenic resources within a County-designated scenic corridor. Therefore, this impact remains **significant and unavoidable**.

IMPACT 3A.1-3 Substantial Degradation of Existing Visual Character or Quality of the Site and its Surroundings. *Project implementation would substantially degrade the visual character of the SPA through conversion of rolling hills and oak woodland to developed urban uses.*

On-Site and Off-Site Elements

NP

The No Project Alternative could include development of up to approximately 44 residential units and associated agricultural land uses in Sacramento County under the existing AG-80 zoning, but no off-site water facilities would be constructed. Because the site is generally suitable only for dryland farming (i.e., livestock grazing), agricultural activities are likely to be similar to those already occurring on the SPA. However, the additional rural residences, agricultural buildings, and other agricultural development that could occur would still degrade the visual character of the SPA from open space to rural housing and associated agricultural land uses, although to a much lesser extent than under the Proposed Project. Therefore, this **direct** impact would be **significant. No indirect** impacts would occur. ***[Lesser]***

On-Site Elements

NCP, PP, RHD, RIM

The SPA consists of approximately 3,500 acres of grasslands and oak woodlands set on undeveloped rolling hills. Under the Proposed Project, Resource Impact Minimization, Reduced Hillside Development, and No USACE Permit Alternatives, substantial alterations would occur to all landscape areas within the SPA. At full buildout, the visual character of the SPA would consist of developed urban land uses with small areas of open space and parks. The majority of the existing oak woodlands in the central portion of the SPA would also be retained.

SPA development, upon annexation to the City of Folsom, is required to preserve at least 30% as natural open space. Under the No USACE Permit and Resource Impact Minimization Alternatives, open space preservation

would be increased by several hundred acres. This would be driven primarily by avoidance of existing water features (i.e., wetlands) and would entail less commercial and residential developments. However, the visual character would not be substantially more preserved than the Proposed Project. Although there would be an overall increase in open space preservation, this would generally occur as pathways between residential and commercial development. Motorists on surrounding roadways and other sensitive viewers would no longer have views of expansive grasslands within the SPA. Increasing the space between dwelling units, schools, and other buildings would not substantially decrease the resulting degradation of visual character within the SPA.

Implementation of the No USACE Permit, Proposed Project, Resource Impact Minimization, and Reduced Hillside Development Alternatives would result in conversion of grassy hillsides to urban areas, generally consisting of housing units and commercial developments. Views would be permanently altered to urban development, substantially degrading viewsheds located on Scott Road, Placerville Road, White Rock Road, U.S. 50, and for people located within the community of El Dorado Hills, the City of Folsom, and nearby rural residences.

Reasonable people may differ as to the aesthetic value of undeveloped grasslands and oak woodlands, and whether development of urban uses in the SPA would constitute a substantial degradation of the existing visual character or quality of the site and its surroundings. However, given the large scale of this urban development and the rural nature of its setting, a conservative approach has been taken for this analysis, and the degradation of visual character at the SPA is considered to be substantial, and impacts on visual resources from project implementation are considered to be **direct** and **significant. No indirect** impacts would occur. ***[Similar]***

Mitigation Measure: Implement Mitigation Measures 3A.1-1 and 3A.7-4.

CD

The Centralized Development Alternative would preserve a substantial portion of the rolling hills in the eastern portion of the SPA. To achieve this preservation, the residential development that would be constructed on the hillside under the other action alternatives would be shifted to the central portion of the SPA. However, commercial development would still occur on the hillsides along U.S. 50. Because of the commercial development in the rolling hills that would occur south of U.S. 50, the majority of the sensitive viewers, which are commuters traveling along U.S. 50, would not be able to see any preserved viewshed. Only those motorists traveling further south on Scott Road (past the proposed commercial development) or motorists along White Rock Road would see the preserved view of the hillside.

At full build-out, approximately 75% of the rolling hills area would be preserved under this alternative, thus keeping a substantial portion of the SPA as open space and preserving its visual character. However, the remaining two-thirds of the SPA would still be developed with urban uses. The sweeping view of the Central Valley, coupled with oak woodlands and grass-covered hillsides, creates the visual character of the SPA as a whole. By developing the central and western lowlands, these views would no longer exist as they do now. Housing units, commercial developments, and other structures would take the place of open space. Development in the central portion of the SPA would disrupt the existing landscape components, alter the visual coherence, and create substantial encroachments on viewsheds, all of which would degrade the visual character of the SPA. Therefore, this impact is considered **direct** and **significant**. **No indirect** impacts would occur. ***[Lesser]***

Mitigation Measure: Implement Mitigation Measures 3A.1-1 and 3A.7-4.

Off-Site Elements

The landscape at the proposed detention basin site is similar to the western lowlands with the exception of an approximately 8-foot-high chain link fence. The detention basin would be constructed with bermed sides, and would therefore appear as a steeply graded hill. The basin would be highly visible to motorists traveling on White

Rock Road and Prairie City Road, and would result in a **direct, significant** impact from degradation of the existing visual character. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure: No feasible mitigation measures are available.

The proposed freeway interchange improvements, El Dorado County road connections, and the Rowberry Drive Overcrossing would be built in landscaped areas that are already surrounded by urban development. Construction of these features would not substantially alter the visual character because the footprint of these features is already located with a developed area. Therefore, this **direct** impact would be **less than significant**. Construction of the proposed force main underneath U.S. 50 would require digging a trench for pipeline placement, then back filling and completely covering all disturbed ground. Because these impacts would be temporary, short-term impacts, and no longer visible upon completion of construction, and would occur in an area that already consists of urban development, they would be **direct** and **less than significant**. **No indirect** impacts would occur.

Mitigation Measure: No mitigation measures are required.

Implementation of Mitigation Measures 3A.1-1 and 3A.7-4 would reduce significant impacts associated with substantial adverse effects on a scenic vista under the No USACE Permit, Proposed Project, Resource Impact Minimization, and Reduced Hillside Development, and Alternatives by reducing the extent of grading within the SPA and providing a 50-foot-wide landscaped corridor between U.S. 50 and the SPA. However, views of new housing developments, schools, and general commercial endeavors would only be slightly obstructed and hillside grading would remain pronounced. Once open space is converted to urban land uses, it is a permanent change in land use and to the visual character. Project implementation would still substantially alter a scenic vista. Therefore, this direct is considered **significant and unavoidable**.

IMPACT 3A.1-4 Temporary, Short-Term Degradation of Visual Character for Developed Project Land Uses During Construction. *Project implementation would involve four phases of construction over a 20-year-buildout period. Construction activity would involve the temporary and short-term use of staging areas for construction equipment and materials, which would be visible to adjacent project land uses that have already been developed.*

On-Site and Off-Site Elements

NP

The No Project Alternative could include development of up to approximately 44 residential units and associated agricultural land uses in Sacramento County under the existing AG-80 zoning, but no off-site water facilities would be constructed. Development of these 44 rural residences would be minor considering the size of the SPA, would be scattered over approximately 3,500 acres, would involve very small amounts of scattered construction activity at different times, and views during construction would likely be blocked by the varied topography and oak woodlands. Therefore, this **direct** impact would be **less than significant. No indirect** impacts would occur. ***[Lesser]***

NCP, PP, RIM, CD, RHD

The presence and movement of heavy construction equipment and staging areas could temporarily degrade the existing visual character and/or quality of the SPA and surrounding area for existing developed land uses. Project implementation would involve four phases of similar types of construction over a 20-year-buildout period. During this time, adjacent project development, including sensitive land uses such as residential housing, schools, and parks, would be occupied while construction is occurring in a different phase.

Construction activities would require the use of various types of equipment, such as scrapers, graders, dozers, and trucks as well as signs, cones, and trash receptacles. Project construction would involve the temporary use of fenced staging areas for construction equipment and materials. Although these staging areas would be located in disturbed areas, construction equipment and materials would be visible to residents, employees at existing businesses, and at parks and school sites over a 20-year duration.

Thus, construction activities would temporarily degrade the existing visual character of the SPA in the vicinity of developed areas. This impact is **direct** and **significant**. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure 3A.1-4: Screen Construction Staging Areas.

The project applicant(s) for all project phases shall locate staging and material storage areas as far away from sensitive biological resources and sensitive land uses (e.g., residential areas, schools, parks) as feasible. Staging and material storage areas shall be approved by the appropriate agency (identified below) before the approval of grading plans and building permits for all project phases and shall be screened from adjacent occupied land uses in earlier development phases to the maximum extent practicable. Screens may include, but are not limited to, the use of such visual barriers such as berms or fences. The screen design shall be approved by the appropriate agency to further reduce visual effects to the extent possible.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries shall be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties, and Caltrans).

Implementation: Project applicant(s) of all project phases.

Timing: Before approval of grading plans and building permits and during construction for all project phases.

Enforcement:

1. For those improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department.

2. For the two local roadway connections from Folsom Heights into El Dorado Hills: El Dorado County Community Services Department.

3. For the U.S. 50 interchange improvements: Caltrans.

Implementation of Mitigation Measure 3A.1-4 would reduce significant impacts associated with temporary visual-quality degradation for developed land uses from concurrent construction staging areas under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives by providing visual screening. However, because screening may not always be feasible (i.e., projects covering a large area or tall buildings); this temporary, short-term impact is considered **potentially significant and unavoidable**. Additionally, some of the off-site elements fall under the jurisdiction of El Dorado County or Caltrans; therefore, neither the City nor the project applicant(s) would have control over their timing or implementation.

IMPACT 3A.1-5 Creation of a New Source of Substantial Light or Glare that would Adversely Affect Day or Nighttime Views in the Area. *Project implementation would require lighting of new development, which would cause new and increased light and glare.*

On-Site and Off-Site Elements

NP

The No Project Alternative could include development of up to approximately 44 rural residential units in Sacramento County under the existing AG-80 zoning, but no off-site water facilities would be constructed. Development of the 44 rural residences would be scattered over approximately 3,500 acres, the amount of new light and glare would be minimal, and most views would be blocked by the varied topography and oak woodlands. Therefore, this **direct** impact is considered **less than significant. No indirect** impacts would occur. ***[Lesser]***

NCP, PP, RIM, CD, RHD

Light associated with urban development can result in spillover lighting and glare effects. Spillover lighting is artificial lighting that spills over onto adjacent properties and could cause an annoyance to neighboring residents by disturbing sleep patterns. Glare is intense light that shines directly, or is reflected off a surface, into a person's eyes. Use of building materials such as reflective glass and polished surfaces can cause glare. During daylight hours, the amount of glare depends on the intensity and direction of sunlight. Glare is particularly acute at sunrise and sunset because of the low angle of the sun in the sky.

Currently, the SPA consists of grasslands and oak woodlands, with a few utility-related structures (e.g., electrical transmission lines, radio towers). With the exception of lighting used on tall structures for airspace safety purposes and one on-site rural residence, there are currently no artificial light installations. Implementation of proposed development would require lighting for roadways; commercial, office, and industrial buildings; parking lots; residences; and other public facilities such as schools and parks. In addition, nighttime lighting or the presence of reflective surfaces on buildings in the commercial, office, and industrial areas (e.g., reflective window glazing) may result in light and glare shining onto motorists on U.S. 50, White Rock Road, Placerville Road, Scott Road, and Prairie City Road, and to residences within the City of Folsom and the community of El Dorado Hills.

Because of the scale of proposed development and because project implementation would introduce a substantial quantity of light into a rural landscape, overall light and glare effects are considered **significant** and **direct**. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure 3A.1-5: Establish and Require Conformance to Lighting Standards and Prepare and Implement a Lighting Plan.

To reduce impacts associated with light and glare, the City shall:

- Establish standards for on-site outdoor lighting to reduce high-intensity nighttime lighting and glare as part of the Folsom Specific Plan design guidelines/standards. Consideration shall be given to design features, namely directional shielding for street lighting, parking lot lighting, and other substantial light sources, that would reduce effects of nighttime lighting. In addition, consideration shall be given to the use of automatic shutoffs or motion sensors for lighting features to further reduce excess nighttime light.

- Use shielded or screened public lighting fixtures to prevent the light from shining off of the surface intended to be illuminated.

To reduce impacts associated with light and glare, the project applicant(s) of all project phases shall:

- Shield or screen lighting fixtures to direct the light downward and prevent light spill on adjacent properties.
- Place and shield or screen flood and area lighting needed for construction activities, nighttime sporting activities, and/or security so as not to disturb adjacent residential areas and passing motorists.
- For public lighting in residential neighborhoods, prohibit the use of light fixtures that are of unusually high intensity or brightness (e.g., harsh mercury vapor, low-pressure sodium, or fluorescent bulbs) or that blink or flash.
- Use appropriate building materials (such as low-glare glass, low-glare building glaze or finish, neutral, earth-toned colored paint and roofing materials), shielded or screened lighting, and appropriate signage in the office/commercial areas to prevent light and glare from adversely affecting motorists on nearby roadways.
- Design exterior on-site lighting as an integral part of the building and landscape design in the SPA. Lighting fixtures shall be architecturally consistent with the overall site design.
- Lighting of off-site facilities within the City of Folsom shall be consistent with the City's General Plan standards.
- Lighting of the off-site detention basin shall be consistent with Sacramento County General Plan standards.
- Lighting of the two local roadway connections from Folsom Heights off-site into El Dorado Hills shall be consistent with El Dorado County General Plan standards.

A lighting plan for all on- and off-site elements within the each agency's jurisdictional boundaries (specified below) shall be submitted to the relevant jurisdictional agency for review and approval, which shall include the above elements. The lighting plan may be submitted concurrently with other improvement plans, and shall be submitted before the installation of any lighting or the approval of building permits for each phase. The project applicant(s) of all project phases shall implement the approved lighting plan.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties).

Implementation: Project applicant(s) of all project phases.

Timing: Before approval of building permits for each project phase.

Enforcement:

1. For all on-site and off-site facilities that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department.
2. For the off-site detention basin: Sacramento County Planning Department.
3. For the two local roadways off-site into El Dorado Hills: El Dorado County Community Services Department.

Implementation of Mitigation Measure 3A.1-5 would reduce significant impacts associated with effects from new sources of light and glare to a **less-than-significant** level under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives by establishing on-site lighting standards in the specific plan, requiring conformance with established general plan standards, and requiring the project applicant(s) of all project phases to prepare and implement lighting plan. However, some of the off-site elements (two roadway connections in El Dorado County and detention basin in Sacramento County) fall under the jurisdiction of El Dorado and Sacramento Counties; therefore, neither the City nor the project applicant(s) would have control over their timing or implementation.

IMPACT 3A.1-6 New Skyglow Effects. *Project implementation would require lighting of new development that would result in the generation of new and increased skyglow effects, obscuring views of stars, constellations, and other features of the night sky.*

On-Site and Off-Site Elements

NP

Skyglow is artificial lighting from urbanized uses that alters the rural landscape and, in sufficient quantity, lights up the nighttime sky, thus reducing the visibility of astronomical features. The No Project Alternative could include development of up to approximately 44 rural residential units in Sacramento County under the existing AG-80 zoning, but no off-site water facilities would be constructed under this alternative. Development of these 44 rural residences would be scattered over approximately 3,500 acres, and the amount of nighttime lighting would be minimal (likely limited to security lighting at front or back doorways). Therefore, this **direct** impact is considered to be **less than significant. No indirect** impacts would occur. ***[Lesser]***

NCP, PP, CD, RHD, RIM

The SPA consists of undeveloped agricultural grazing land, radio towers on the hillside, and electrical transmission lines. Existing light sources are associated with one rural residence and lighting on utility towers to provide airspace security. The existing land uses are not a substantial source of nighttime lighting. Therefore, these areas generate no substantial sources of skyglow into the night sky. However, a substantial increase in the amount of nighttime light would result from the development of the SPA with urban land uses including residences, commercial and industrial land uses, and schools and parks over approximately 2,500 acres, which would obscure views of the stars, constellations, and other features of the night sky.

Because project implementation would introduce a substantial quantity of nighttime light over a large area of a rural landscape that is essentially dark under existing conditions, overall skyglow effects are considered a **significant** and **direct** impact. **No indirect** impacts would occur.

Mitigation Measure: Implement Mitigation Measure 3A.1-5.

Implementation of Mitigation Measure 3A.1-5 would partially reduce significant impacts associated with effects from skyglow under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives. Mitigation Measure 3A.1-5 would require the development and implementation of an on-site lighting plan and by requiring conformance with general plan standards for the off-site facilities. However, because of the scale and location of the SPA and the off-site elements, screening or shielding of light fixtures to direct light downward or the use of low-pressure sodium or other lighting would not reduce the effects of new skyglow on the night sky to a less-than-significant level. Therefore, impacts would remain **significant and unavoidable**.

3A.1.4 RESIDUAL SIGNIFICANT IMPACTS

Implementation of mitigation measures contained in this section would reduce impacts associated with new light and glare to a less-than-significant level. Impacts related to substantial alteration of a scenic vista, damage to designated scenic corridor, and substantial degradation of visual character due to development would be significant and unavoidable because no feasible mitigation measures are available to reduce these impacts to a less-than-significant level. Implementation of Mitigation Measure 3A.1-4 would help to reduce the temporary, short-term degradation of visual character during construction; however, additional feasible mitigation measures are not available to reduce these impacts to a less-than-significant level. Although Mitigation Measure 3A.1-5 may reduce impacts associated with the new skyglow effect, additional feasible mitigation measures are not available to reduce these impacts to a less-than-significant level. Therefore, these impacts would remain potentially significant and unavoidable.

In addition, some of the off-site elements (two roadway connections in El Dorado County and detention basin in Sacramento County) fall under the jurisdiction of El Dorado and Sacramento Counties; therefore, neither the City nor the project applicant(s) would have control over the timing or implementation of mitigation measures for these off-site elements. Because the City does not control implementation of mitigation measures for off-site improvements constructed in areas under the jurisdiction of El Dorado and Sacramento Counties, Impacts 3A.1-4 and 3A.1-5 are considered potentially significant and unavoidable for off-site improvements which would be located in Sacramento or El Dorado County jurisdiction.

This section was prepared by RMC Water and Environment.

3B.1 AESTHETICS – WATER

This section provides a description of the existing visual and aesthetic resources within the "Water" Study Area. In the context of the actions proposed as part of the Off-site Water Facility Alternatives, emphasis is placed on portions of the "Water" Study Area where physical environmental changes would occur. As provided in Chapter 2, "Alternatives," physical improvements associated with the Off-site Water Facility Alternatives are limited to areas within Zone 4; whereas no physical improvements are proposed within Zones 1, 2, or 3. For this reason, the "Aesthetics" analysis for the "Water" project is focused primarily on Zone 4. Secondary emphasis is also placed on Zone 2 in the context of the potential changes in flow that could occur within the Sacramento River as a result of long-term operation of the Off-site Water Facilities.

3B.1.1 AFFECTED ENVIRONMENT

VISUAL ASSESSMENT AND VISUAL QUALITY CRITERIA

The analysis of visual resources for the Off-site Water Facility Alternatives uses a qualitative approach for characterizing and evaluating the visual resources as described in Section 3A.1. This approach applies specific criteria developed by the Federal Highway Administration in 1981 that include the concepts of vividness, intactness, and unity. According to these criteria, none of these is itself equivalent to visual quality; all three must be considered high to indicate high quality. These terms are defined as follows:

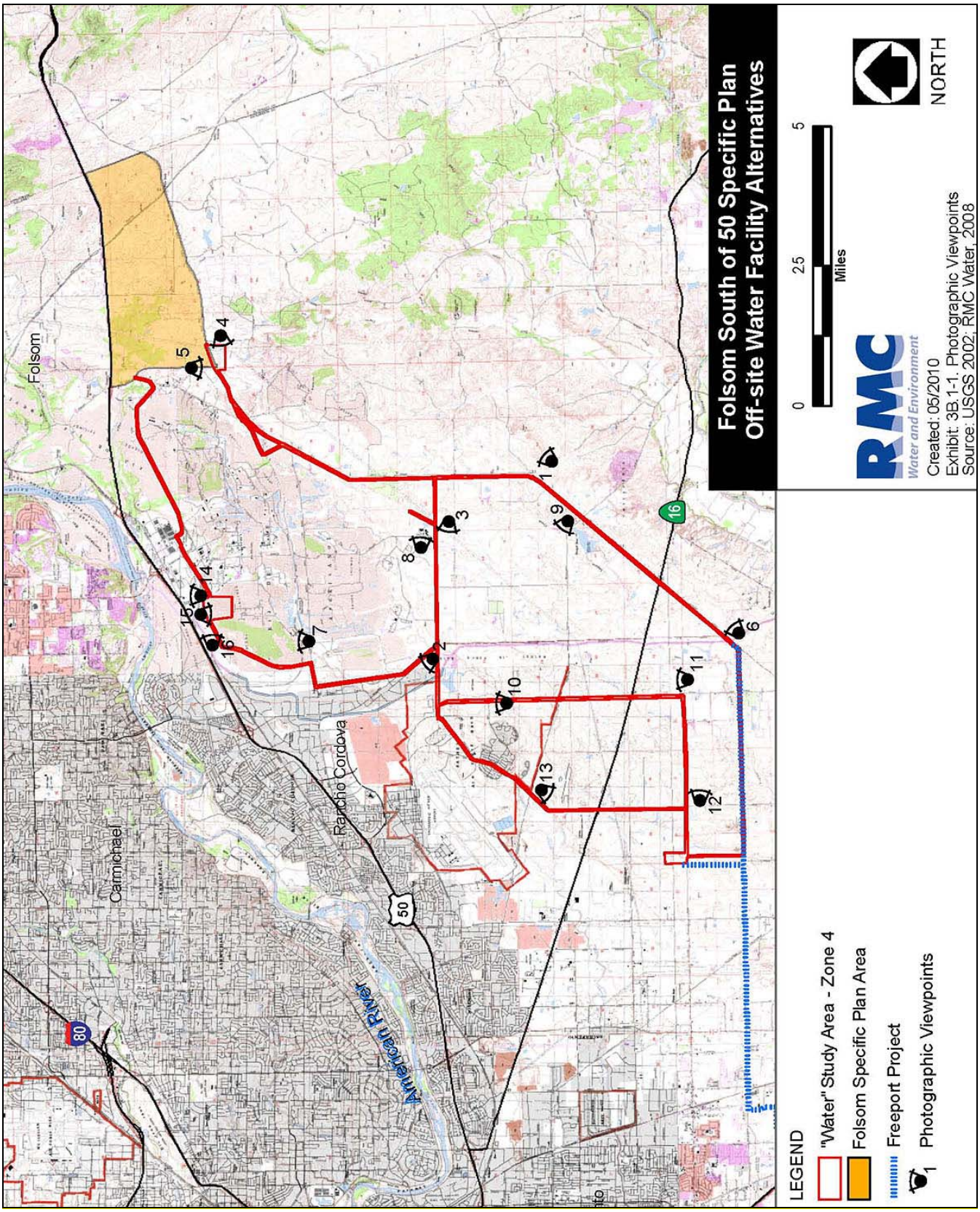
- "Vividness" is the visual power or memorability of landscape components as they combine in striking and distinctive visual patterns.
- "Intactness" is the visual integrity of the natural and human-built landscape and its freedom from encroaching elements.
- "Unity" is the visual coherence and compositional harmony of the landscape considered as a whole.

REGIONAL SETTING

The regional setting description provided in Section 3A.1 would also generally apply to the "Water" Study Area. Improvements proposed as part of the Off-site Water Facility Alternatives span portions of eastern Sacramento Valley near the base of the Sierra Nevada foothills. The terrain within this portion of the valley gradually transitions from relatively level areas, west of Grant Line Road, to undulating and rolling hills further east (see Viewpoint 1, Exhibit 3B.1-1). In general, the landscape within Zone 4 is undergoing a transition from rural and agricultural uses to more urban uses including residential, commercial, and industrial uses.

VISUAL CHARACTER WITHIN ZONE 4 OF THE "WATER" STUDY AREA

Urban forms of development within Zone 4 of the "Water" Study Area are generally west of Sunrise Boulevard and north of Douglas Road (see Viewpoint 2, Exhibit 3B.1-1). Views from any given location may include commercial and industrial facilities, office parks, residential subdivisions, roadway and utility corridors, agricultural fields, creek and river corridors, mine tailings, and views of the Sierra Nevada foothills (see Viewpoint 3, Exhibit 3B.1-1). Low-level hill features, large trees, and existing buildings limit long-range views in many locations.



Viewpoints from within Zone 4 of the "Water" Study Area **Exhibit 3B.1-1**

Prominent features within the eastern portions of Zone 4 include a joint Sacramento Municipal Utilities District SMUD) and Pacific Gas and Electric (PG&E) power transmission line corridor, which is situated to the east of Grant Line Road and diagonally bisects the White Rock WTP site (see Viewpoint 4, Exhibit 3B.1-1). The visual character along White Rock, Grant Line, and Prairie City Roads within the "Water" Study Area is rural with intermixed industrial uses, such as security fencing around the Aerojet property, graded dirt roads, and large aggregate processing facilities (see Viewpoint 5, Exhibit 3B.1-1). Undeveloped, rural grassland comprises the largest part of the foreground views in the eastern portion of the Off-site Water Facilities Study Area, with scattered trees and rural residences in the background (see Viewpoint 6, Exhibit 3B.1-1).

Areas to the north of Douglas Road, west of Grant Line Road, and south of Folsom Boulevard have been substantially altered by historic gold mining activities that occurred approximately 50 to 100 years ago. These areas are comprised of mine tailings, which consist of piles of cobblestones laid down in rows, thereby forming a long series of shallow ridges (see Viewpoints 7, Exhibit 3B.1-1). In certain areas, these dredge tailings form broad mounds that are up to 30 feet tall with vegetation, primarily consisting of cottonwood trees, shrubs, and annual grasses growing in depressional areas between the dredge tailings. The 15-story concrete Security Park building is also a prominent feature in this area, just north of Douglas Road (see Viewpoint 8, Exhibit 3B.1-1).

Approximately 2 miles west of Grant Line Road along Douglas Road, the most prominent features to the south include new residential development and associated construction equipment in the Anatolia housing development (see Viewpoint 9, Exhibit 3B.1-1). Sunrise Boulevard and a commercial and industrial corridor are located in the central portion of Zone 4 of the "Water" Study Area (see Viewpoint 2, Exhibit 3B.1-1). Prominent visual features along Sunrise include corrugated metal and concrete buildings, heavy equipment, transport trucks, metal storage bins painted various colors, chain-link fencing, and high-mast lighting. Some of the buildings are partially screened by trees and shrubs. Further west are Mather Regional Park and Mather Airport (see Viewpoint 10, Exhibit 3B.1-1).

Further south and along Gerber, Excelsior, Florin, and Eagles Nest Roads, the visual resources of Zone 4 of the "Water" Study Area consist of grazing lands, dotted with vernal pools, irrigated farmlands, nurseries, rural residences, and natural vegetation along the creeks (see Viewpoints 11, 12, and 13, Exhibit 3B.1-1). However, this area is rapidly changing from a rural, pastoral landscape of rangeland and open space to an urbanized landscape. Currently, there is limited built landscape, consisting mainly of ranchettes, electrical towers, overhead utility lines supported generally by single wood poles, and two-lane roads (e.g., Florin Road, Gerber Road). However, these areas are planned for urban forms of development based on current land use maps being developed in conjunction with the County's General Plan Update.

In the northern section of Zone 4, Folsom Boulevard near U.S. 50 is characterized by the visually intensive Folsom Auto Mall to the northwest; woodlands and the light rail track to the southeast; and U.S. 50 (including on-ramps and off-ramps) to the north (see Viewpoint 14, Exhibit 3B.1-1). Numerous other existing light sources are located along the Folsom Boulevard corridor and include overhead street lights, overhead fixtures at the light rail station and parking lot, outdoor security lighting in the apartment complex and the mobile home park, and lighted signs, parking lot lights, and exterior lights at the Nimbus Winery shopping center. To the south of Folsom Boulevard and in the vicinity of the Folsom Boulevard WTP, the landscape retains an opened space and rural character (see Viewpoints 15 and 16, Exhibit 3B.1-1).

The visual assessment criteria for the Zone 4 landscape area are provided below.

- **Vividness:** The vividness of the Zone 4 landscape is marked by large expanses of annual grasslands with distinct stands of oak and eucalyptus trees, scattered rural residences, vernal pools and wetlands, and/or roadways/above-ground utilities present in the foreground. Along the eastern edge of Zone 4, two sets of electrical transmission lines dominate the foreground: one in a north-south (high-voltage lines) direction and the other in an east-west direction. The north-south line is the larger of the two and consists of two sets of towers standing well above the undulating hillslopes (Viewpoint 4, Exhibit 3B.1-1). Although these electrical

transmission lines are substantial encroachments on the Zone 4 landscape and are readily visible from multiple vantages, in general they do not impede the view. However, since views from multiple vantages within the Zone 4 landscape provide an expansive view of agricultural and open space lands to the south and east along with similar views within the southern portions of Zone 4, the Zone 4 landscape is considered to have high levels of vividness.

- **Intactness:** As described above, two sets of electrical transmission lines exist within the eastern portion of the Zone 4 landscape. These, in addition to agricultural accessories, including fences and dirt roadways, disrupt the integrity of the landscape. These types of structures often exist within agricultural land and do not act as a substantial distraction to the landscape as a whole. However, when combined within new and existing development in central portions of the Zone 4 landscape (e.g., Security Park structure), these encroachments contribute to a moderate level of intactness.

- **Unity:** The Zone 4 landscape is exemplary of California's Central Valley rangeland, including gently rolling hills, which contrasts with development in the western portions of Zone 4. Although there are several encroachments within the Zone 4 landscape, they do not detract from the overall sense of unity; especially in eastern portions of the Zone 4 landscape. The Zone 4 landscape is essentially surrounded by open space to the east and urban development to the west allowing for moderate levels of visual unity.

Sensitive Viewers

As described in Section 3A.1, viewer sensitivity is related to the values and opinions of a particular group and can be generally characterized by the viewer activity, awareness, and local significance of a site. The "Water" Study Area can be seen by two types of sensitive viewer groups: travelers on roadways and people within the City of Folsom. Travelers include both the drivers and passengers on the following routes:

- White Rock Road (Viewpoints 4, 5, and 7, Exhibit 3B.1-1);
- Scott Road (Viewpoints 4 and 5, Exhibit 3B.1-1);
- Douglas Road (Viewpoints 2, 3, and 8, Exhibit 3B.1-1);
- Prairie City Road (Viewpoint 5, Exhibit 3B.1-1);
- Folsom Boulevard (Viewpoints 14, 15, and 16, Exhibit 3B.1-1);
- Grant Line Road (Viewpoints 1, 6, and 9, Exhibit 3B.1-1);
- Sunrise Boulevard (Viewpoints 2 and 7, Exhibit 3B.1-1);
- Jackson Highway (SR 16) (Viewpoint 6, Exhibit 3B.1-1);
- Florin Road (Viewpoint 12, Exhibit 3B.1-1);
- Eagles Nest Road (Viewpoints 10 and 11, Exhibit 3B.1-1);
- U.S. 50 (Viewpoints 13 and 15, Exhibit 3B.1-1); and
- Excelsior Road (Viewpoints 13, Exhibit 3B.1-1).

Sensitive viewer groups within the cities of Folsom and Rancho Cordova, the community of El Dorado Hills, and unincorporated portions of Sacramento County include:

- Residents (Viewpoints 3, 6, 9, 12, 13, and 14, Exhibit 3B.1-1); and

- Employees and patrons at businesses (Viewpoints 2, 8, and 10, Exhibit 3B.1-1).Visual Character within Zone 2 of the "Water" Study Area.

Zone 2 of the "Water" Study Area includes portions of the Sacramento River between NCMWC's service area and Freeport. The visual character of Zone 2 is dominated by riverine elements, including the river surface, which varies between 10 and 20 feet mean sea level, steep levee banks and riparian vegetation, docks and marines, and bridge overcrossings. Portions of the Zone 2 contain dense vegetation, which may include an assortment of shrubs and trees along the riverside of the levee, such as at Discovery Park in the City of Sacramento and along the Garden Highway north of Bryte Bend Park in the City of West Sacramento. Other locations are completely

Viewpoint 1: Viewpoint from Grant Line Road looking east-northeast towards the foothills of the Sierra Nevada. Grant Line Road, property fencing, and local utilities are visible in the foreground. Small clusters of oak and eucalyptus trees are visable in the background. (RMC, 2008)

Viewpoint 2: Viewpoint from Douglas Road, looking north towards existing development along the Sunrise Boulevard corridor. Existing structures are visible in the background. Undeveloped lands within the Rio del Oro Specific Plan Area to the east. (RMC, 2008)

Representative Photographs 1 and 2 **Exhibit 3B.1-1**

Viewpoint 3: Viewpoint from Douglas Road looking west towards the Sunrise Boulevard corridor. Douglas Road, recently constructed low-density residential housing, traffic signlas, and local utilities are visible in the foreground. (RMC, 2008)

Viewpoint 4: Viewpoint from Scott Road, looking west across the northern portions of the White Rock WTP site. Existing electrical transmission lines and oak trees are visible in the middleground. (RMC, 2008)

Representative Photographs 3 and 4 **Exhibit 3B.1-1**

Viewpoint 5: Viewpoint from Priare City Road looking south towards White Rock Road. Security fencing along the Aerojet property along with rural dirt roads used for fuel breaks are visible in the foreground. The eletrical transmission lines and lattice structures are visable in the middleground. (RMC, 2008)

Viewpoint 6: Viewpoint from Grant Line Road, looking northeast. Annual grasslands dominate the foreground with local distributiion lines and clusters of oak trees visible in the middleground. Hilslopes of the Sierra fothills are visable in the background. (RMC, 2008)

Representative Photographs 5 and 6 **Exhibit 3B.1-1**

Viewpoint 7: Viewpoint from White Rock Road looking north at the Aerojet Property. Remnant dredge tailings are present in the foreground and middleground. Rocket testing facilities are slightly visable in the background. (RMC, 2008)

Viewpoint 8: Viewpoint from Douglas Road, looking east. Industrial areas north of Dougals Road and local above-ground utilities are visible in the middleground. The Sierra foothills are visable in the background. (RMC, 2008)

Representative Photographs 7 and 8 **Exhibit 3B.1-1**

Viewpoint 9: Viewpoint from Grant Line Road looking north at new residential development in the background within the Sunrise-Douglas Community Plan Area to the northwest. Annual grasslands and associated vernal pool complexes are present in the foreground and middleground. (RMC, 2008)

Viewpoint 10: Viewpoint from Eagles Nest Road, looking north. The south end of Mather Regional Park and Golf Course are visible in the middleground. (RMC, 2008)

Representative Photographs 9 and 10 **Exhibit 3B.1-1**

Viewpoint 11: Viewpoint from Eagles Nest Road looking north. Annual grasslands and agricultural grazing lands are present in the foreground and middleground. Oak tree canopies are visable in the background. (RMC, 2008)

Viewpoint 12: Viewpoint from Florin Road looking east. Agricultural grazing, local electrical distribution lines, and roadside ditches are visible in the middleground. Rural residences are visable in the background. (RMC, 2008)

Representative Photographs 11 and 12 **Exhibit 3B.1-1**

Viewpoint 13: Viewpoint from Excelsior Road looking south. Agricultural lands, local electrical distribution lines, and rural residences and associated landscaping are present in the foreground. (RMC, 2008)

Viewpoint 14: Viewpoint from Folsom Boulevard looking north. U. S. Highway 50 and existing sound walls, Folsom Boulevard and landscaped median, and low-density residential housing are visible in the foreground. (RMC, 2008)

Representative Photographs 13 and 14 **Exhibit 3B.1-1**

Viewpoint 15: Viewpoint from the Beck's Furniture parking lot looking south at the Folsom Boulevard WTP Site. Annual grassland, dredge tailings, and oak trees are present in the foreground and middleground. (RMC, 2008)

Viewpoint 16: Viewpoint from Folsom Boulevard at Buffalo Creek, looking east. U. S. Highway 50, Folsom Boulevard, the Light Rail tracks, and Buffalo Creek are visible in the foreground. (RMC, 2008)

Representative Photographs 15 and 16 **Exhibit 3B.1-1**

devoid of vegetation or limited to ruderal or annual grassland vegetation. North of Freeport, urban areas generally dominate the riverfront and extend up through to the Cities of West Sacramento and Sacramento and are comprised of a wide range of land uses, including heavy and light industrial, waterfront marinas, and high- and low-density residential housing. A uniform and undeveloped, riverine corridor emerges north of Sacramento and continues north to I-5. This riparian landscape transitions north of I-5 to residential housing along the levee north through the NCMWC service area.

The visual assessment criteria for the Zone 2 landscape area are provided below.

- **Vividness:** The vividness of the Zone 2 landscape is marked by large expanses of open water bordered by riparian trees and clusters of residential, commercial, and industrial development. Since views from multiple vantages within the Zone 2 landscape provide an expansive views of riverine habitats, the Zone 2 landscape is considered to have high levels of vividness.

- **Intactness:** As described above, the Zone 2 landscape consists of riverine habitats that are partially disrupted by existing structures, roadways, and bridges. However, these types of structures can often complement natural riverine habitats and do not act as a substantial distraction to the landscape as a whole. The Zone 2 landscape is considered to have a high level of intactness.

- **Unity:** The Zone 2 landscape is exemplary of the Sacramento River corridor and, although there are several encroachments within the Zone 2 landscape, they do not detract from the overall sense of unity; especially in northern portions of the Zone 2 landscape. The Zone 2 landscape is essentially surrounded by open space to the west and urban development to the east allowing for high levels of visual unity.

NIGHTTIME VIEWS OF ZONE 4 OF THE "WATER" STUDY AREA

Nighttime views in Zone 4 of the Off-site Water Facilities Study Area include lights from commercial corridors along Folsom and Sunrise Boulevards, commercial and office uses in the Cities of Rancho Cordova and Folsom, vehicle lights from local roadways; and lighting fixtures on industrial and commercial buildings and structures within and outside the Off-site Water Facilities Study Area. Few to no light sources are located on the undeveloped lands east of Prairie City Road or south White Rock Road, east of Grant Line Road. The exception to this is several large aggregate processing facilities along Scott and Grant Line Roads.

SCENIC HIGHWAYS AND CORRIDORS

Sacramento County contains one eligible route for the State Scenic Highway Program. This route is referred to as River Road (State Routes 160 and 84), which runs along the Sacramento River levees in the Delta from the Sacramento city limits at the northern edge of Freeport to the southern tip of the Delta at the Antioch Bridge. Although the Sacramento River borders SR 160, including portions of Zone 2 of the Off-site Water Facilities Study Area, no physical improvements are proposed in the Sacramento River and therefore, no further consideration of this roadway is necessary.

Scott Road, from White Rock Road south to Latrobe Road, is a designated scenic corridor in the Sacramento County General Plan.

3B.1.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

No Federal plans, policies, regulations, or laws are applicable to the Off-site Water Facility Alternatives under consideration.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

The following State plans, policies, regulations, and laws related to visual resources are relevant to the Off-site Water Facility Alternatives, and are described in detail in Section 3A.1, "Aesthetics – Land:"

- California Scenic Highway Program

No other State plans, policies, regulations, or laws are applicable to the Off-site Water Facility Alternatives under consideration.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

Sacramento County General Plan

The Sacramento County General Plan Land Use Element includes policies to diminish the aesthetic and safety impacts of glare by minimizing reflecting surfaces, shading and directing overhead light fixtures away from residences, and requiring exterior lighting to be low-intensity and only used where necessary for safety and security purposes (Sacramento County 1993). The Open Space Element also contains policies to protect open space with the intent of preserving natural and scenic areas and encourage preservation of open space in developed areas for its scenic qualities. The Land Use, Open Space, and Conservation Elements of the County's General Plan are described in Sections 3A.1, "Aesthetics – Land," and 3A.10, "Land Use and Agricultural Resources – Land." Additional applicable polices specific to the placement of the White Rock WTP are identified below.

Objective: Low glare external building surfaces and light fixtures that minimize reflected light and focalize illumination.

- **LU-22.** Exterior building materials on nonresidential structures shall be composed of a minimum of 50 percent low-reflectance, non-polished finishes.

- **LU-23.** Bare metallic surfaces such as pipes, flashing, vents, and light standards on new construction shall be painted so as to minimize reflectance.

- **LU-24.** Require overhead light fixtures to be shaded and directed away from adjacent residential areas.

- **LU-25.** Require exterior lighting to be low-intensity and only used where necessary for safety and security purposes.

Objective: Appropriate urban and rural development clustered to provide open space resource protection.

- **OS-11.** Permit development clustering in rural areas where grouping units at a higher density would create an open space buffer protecting intensive farming activities, provided that:

    a. Clustered residential lots are adjacent to and comparable in lot size to existing agricultural areas.

    b. Septic disposal systems are not concentrated in a manner which increases the potential for groundwater contamination.

    c. General Plan policies pertaining to floodplain or natural preserves would not preclude development of the proposed use in the area to be protected as open space.

    d. The project complies with any applicable development credits transfer ordinance relating to density bonuses.

e. Development rights for the open space area are permanently dedicated and appropriate long-term management is provided for by either a public agency, private homeowners association, or other appropriate entity.

f. The overall average density of the project is comparable to the average lot sizes in the area.

CITY OF RANCHO CORDOVA GENERAL PLAN

The City of Rancho Cordova General Plan provides policies for the preservation and enhancement of the City. The following policies and plans are applicable to portions of the Off-site Water Facilities Study Area that cross the City limits of Rancho Cordova:

Folsom South Canal Roadmap

The Folsom South Canal Partners was formed to explore ways to enhance the Folsom South Canal and the relationship to its surroundings. The Folsom South Canal Roadmap compiles information about the canal, outlines the goals and vision of the Partners, identifies a framework for future partnerships and agreements, and informs and guides a more detailed future planning effort. The Folsom South Canal Partners includes Caltrans, the City of Rancho Cordova, GenCorp, Sacramento County, Sacramento County Regional Parks, and Sacramento Regional Transit.

Rancho Cordova Design Guidelines

The Citywide Design Guidelines identify objectives, standards, and guidelines that are intended to encourage, promote, and require high-quality, pedestrian-oriented development while allowing flexibility in the design solutions. Design concepts of project and community identity and public gathering places should be applied to the City's parks and open space areas.

- **Policy UD.1.4** – Develop vibrant urban cores (village centers and local town centers) as the primary activity centers of each district within the City.

- **Policy UD.1.5** – Encourage project compatibility, interdependence, and support with neighboring uses, especially between commercial and mixed-use centers and the surrounding residential neighborhoods. Uses should relate to one another with pedestrian connections, shared parking, landscaping, public spaces, and the orientation and design of buildings.

- **Policy UD.3.1** – Ensure quality design of new development and redevelopment with an integrated architectural style.

- **Policy UD.3.4** – Require the provision of public art in all public and private development and redevelopment projects.

- **Policy UD.4.2** – Design new development to be compatible with surrounding development in ways that contribute to the desired character of the City and District.

3B.1.3 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. These thresholds also encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its

impact. For the purposes of this analysis, the City's proposed Off-site Water Facilities would result significant environmental effects to visual resources and aesthetics if they would:

- have a substantial adverse effect on a scenic vista;
- substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a state scenic highway;
- substantially degrade the existing visual character or quality of the site and its surroundings; or
- create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

ANALYSIS METHODOLOGY

This visual impact analysis is based on field observations conducted by RMC Water and Environment (RMC) in October 2008 and a review of local maps (e.g., general plans) and aerial photographs. Similar to the assessment of visual resources in Impact 3A.1-1, this analysis uses a common methodology that entails three key steps: (1) identifying the visual character and quality of visual resources within the Off-site Water Facilities Study Area; (2) identifying the type, exposure, and sensitivity of viewers; and (3) identifying the potential change in visual resources. All three of these elements are considered when determining the level of visual impact resulting from the Off-site Water Facilities. The actual impacts of the Off-site Water Facilities were determined based on potential changes to existing environmental conditions in the context of the applied significance criteria, as provided below. Where appropriate, the City has also considered approved, future projects that are not constructed to account for potential adverse affects to approved, adjacent land uses that are not reflected in existing environmental conditions.

IMPACT ANALYSIS

Impacts that would occur under each of the Off-site Water Facility Alternatives are identified as follows:

NCP (No USACE Permit Alternative)

PA (Proposed Off-site Water Facility Alternative)

1 (Off-site Water Facility Alternative 1 – Raw Water Conveyance – Gerber/Grant Line Road Alignment and White Rock WTP)

1A (Off-site Water Facility Alternative 1A Raw Water Conveyance – Gerber/Grant Line Road Alignment Variation and White Rock WTP)

2 (Off-site Water Facility Alternative 2 Treated Water Conveyance – Douglas Road Alignment and Vineyard SWTP)

2A (Off-site Water Facility Alternative 2A Treated Water Conveyance – Excelsior Road Alignment Variation and Vineyard SWTP)

2B (Off-site Water Facility Alternative 2B Treated Water Conveyance – North Douglas Tanks Variation and Vineyard SWTP)

3 (Off-site Water Facility Alternative 3 Raw Water Conveyance – Excelsior Road Alignment and White Rock WTP)

3A (Off-site Water Facility Alternative 3A Raw Water Conveyance – Excelsior Road Alignment Variation and White Rock WTP)

4 (Off-site Water Facility Alternative 4 Raw Water Conveyance – Easton Valley Parkway Alignment and Folsom Boulevard WTP)

4A (Off-site Water Facility Alternative 4A Raw Water Conveyance – Easton Valley Parkway Alignment Variation and Folsom Boulevard WTP).

The impacts for each alternative are compared relative to the PA at the end of each impact conclusion (i.e., similar, greater, lesser).

ISSUES NOT DISCUSSED FURTHER IN THIS EIR/EIS

Scenic Highways—As provided in the description of the affected environment, no scenic highways are identified within Zone 4 of the Off-site Water Facilities Study Area. Therefore, physical improvements associated with all the Off-site Water Facility alternatives would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a state or locally-designated scenic highway. Based on this context, no impact would occur and this EIR/EIS provides no additional discussion of this issue area.

IMPACT 3B.1-1 Substantial Adverse Effect on a Scenic Vista. *Implementation of the Off-site Water Facility Alternatives would not result in the degradation of the visual quality of a scenic vista.*

NCP, PA, 2, 2A, and 2B

No formally designated scenic vistas exist within the "Water" Study Area, according to the Sacramento County General Plan (1993) and, therefore, the Off-site Water Facilities would not result in an adverse impact to a scenic vista. However, eastern portions of Zone 4 of the "Water" Study Area are readily visible from hillsides to the northeast and open space areas along Scott Road south of White Rock Road are identified as a scenic corridor in the Sacramento County General Plan. Additionally, views to the south of the Folsom Lake State Recreation Area (SRA) include the eastern portions of Zone 4 of the "Water" Study Area. Construction activities and, to a lesser extent, permanent facilities proposed as part of the No USACE Permit Alternative, Proposed Off-site Water Facility Alternative, and Off-site Water Facility Alternatives 2, 2A, and 2B would be visible from these ridgelines and the SRA.

Under the No USACE Permit Alternative and Proposed Off-site Water Facility Alternative, most of the above ground facilities would be contained within the SPA and, therefore, the impact discussion related to new development within the SPA is provided in Section 3A.1, "Aesthetics – Land." Facilities outside the SPA under the No USACE Permit Alternative and Proposed Off-site Water Facility Alternative would be mainly limited to buried pipelines and the booster pumping station. Similarly, new, permanent above-ground facilities would be limited under Off-site Water Facility Alternatives 2, 2A, and 2B by further integrating the City's water supply infrastructure with SCWA. Based on these considerations, **direct** and **indirect** impacts to existing scenic vistas under these alternatives would be **less than significant**. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

1, 1A, 3, 3A, 4, and 4A

Construction activities and permanent facilities proposed as part of the Off-site Water Facility Alternatives 1, 1A, 3, and 3A (e.g., WTP) would be visible from these ridgelines and the SRA. Views of and through the Off-site Water Facilities Study Area would be altered by new above-ground facilities, landscaping, and other site improvements where proposed. However, it is expected that new Off-site Water Facilities structures would be partially masked by intervening topography, existing vegetation, and development within the Folsom SPA. Given

that the conveyance pipeline under any alternative would be installed underground and its trench backfilled, this Off-site Water Facility feature would not be visible at the close of construction.

Based on these considerations, the scenic impact of new structural facilities proposed as part of the Off-site Water Facilities would be minor and more sparsely spaced than existing structures within the viewshed. As described in the affected environment discussion, these existing structures include power transmission lines, aggregate processing facilities, and commercial and industrial buildings that already impair the quality of the viewshed. Given the degree of this existing impairment, the change to the landscape as a result of the Off-site Water Facilities would be considered minor and, therefore, would not constitute a substantial adverse effect. In addition, once constructed, the Off-site Water Facilities would appear visually similar and consistent with the existing and planned development within the "Water" Study Area. Based on these factors, the **direct** and **indirect** impacts related to alteration of a scenic vista under Off-site Water Facility Alternatives 1, 1A, 3, 3A, 4, and 4A are considered **less than significant**. ***[Greater]***

Mitigation Measures: No mitigation measures are required.

IMPACT 3B.1-2 Substantial Degradation of Existing Visual Character or Quality of the "Water" Study Area. *Implementation of the Off-site Water Facility Alternatives could substantially degrade the existing visual character or quality of the "Water" Study Area and its surroundings.*

NCP, PA, 1, 1A, 3, and 3A

The Off-site Water Facilities would include several new facilities that would result in minor changes to the existing landscape and visual character of portions of Zone 4 of the "Water" Study Area. By virtue that the proposed conveyance pipeline would be installed underground and not visible at the surface following construction, this Off-site Water Facilities feature would have no long-term visual impacts. Although construction activities associated with the conveyance pipeline would result in disruptions to the visual character of areas in close proximity to the alignment, these disruptions would be temporary and dispersed along the conveyance alignment. Construction of the conveyance pipeline would involve temporary negative aesthetic effects, including clearing and grading as well as the presence of construction equipment and materials. Off-site Water Facilities construction activities would result in temporary exposure of graded surfaces, construction debris, and the presence of construction equipment and heavy truck traffic. Following construction, the surface would be restored to preproject conditions and no substantial changes to the existing visual character of areas within close proximity to the conveyance alignments are anticipated.

In relation to the WTP, these Off-site Water Facility Alternatives would involve the construction of several new facilities that would change the existing visual character of the of the On-site WTP or White Rock WTP site(s). From White Rock and Prairie City Roads, the WTP structures that would be most noticeable include: new water storage tank(s), the proposed gravity thickener tanks, the proposed dewatering building, and new office/ maintenance building(s). Once constructed, the On-site and White Rock WTP site(s) would have an industrial appearance that would blend with the SPA and overhead transmission line corridor.

Although the Off-site Water Facilities would change the visual character of the WTP site, the extent and magnitude of this change is not considered substantial in relation to other adjacent uses, which include OHV use and aggregate mining. However, the design of the WTP could be inconsistent with the development proposed within the Folsom SPA. In addition, the WTP would be located outside and to the south of the delineated Urban Services Boundary as proposed in the current Sacramento County General Plan Update and the WTP could degrade the existing visual character of the study area in the vicinity of the urban-rural interface that will ultimately transition through the WTP site. Therefore, the **direct** and **indirect** impacts from implementation of the No USACE Permit Alternative, Proposed Off-site Water Facility Alternative, and Off-site Water Facility Alternatives 1, 1A, 3, and 3A are considered **potentially significant**. ***[Similar]***

Mitigation Measure 3B.1-2a: Enhance Exterior Appearance of Structural Facilities.

The external appearance of above-ground facilities, including the choice of color and materials, shall seek to reduce the visual impact of the proposed WTP, pump station, and above-ground storage tank facilities. Bright reflective materials and colors shall be avoided. As appropriate, the exterior design of these facilities should follow design guidelines provided in applicable land use plans. Minimum exterior design requirements shall include, but are not limited to, the following:

- painting (with earth-colored tones) of structural façades to blend with surrounding land uses,
- use of fencing or structural materials similar to those used by nearby land uses,
- installation of berms and/or landscaping around the facility (see Mitigation Measure 3B.2-2b for additional detail), and
- clustering of structural facilities to maximize open space buffering.

Implementation: City of Folsom Utilities Department

Timing: Prior to approval of grading plans and building permits for WTP, pump stations, and storage tank facilities.

Enforcement:

1. For structural improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department.
3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.

Mitigation Measure 3B.1-2b: Prepare Landscaping Plan.

The City shall develop a landscaping plan for each structural facility site that uses a combination of locally derived native vegetation, earthen features (e.g., boulders), and, if appropriate, topographical separations (e.g., berms) to maximize site appearance and shield the new facilities from nearby sensitive receptors to the extent feasible. In addition to complying with local standards, the landscaping plan shall require the following at each site:

- Vegetation shall be arranged in a hierarchy of plant groupings to enhance the visual and scenic qualities of the site(s). To the extent practical, the design will minimize the need for supplemental irrigation.
- New or replacement vegetation shall be compatible with surrounding vegetation and shall be adaptable to the site with regard to rainfall, soil type, exposure, growth rate, erosion control, and energy conservation purposes.
- Plant materials chosen shall be species which do not present any safety hazards, which allow native flora to reestablish in the area, and which require minimal maintenance, including watering, pest control, and clean-up of litter from fruit and droppings.

Implementation: City of Folsom Utilities Department

Timing: Prior to approval of grading plans and building permits for WTP, pump stations, and storage tank facilities.

Enforcement:

1. For structural improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department.
3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.

2, 2A, and 2B

The discussion provided for Proposed Off-site Water Facility Alternative and Off-site Water Facility Alternatives 1 and 1A as it relates to the construction and operation of the proposed conveyance pipeline would also apply to Off-site Water Facility Alternatives 2, 2A, and 2B. However, these alternatives would not involve the construction of a new WTP and, therefore, the impacts identified for the WTP under the Proposed Off-site Water Facility Alternative and Alternatives 1 and 1A would not apply to Off-site Water Facility Alternatives 2, 2A, and 2B. However, storage tank and pump station facilities under Off-site Water Facility Alternatives 2, 2A, and 2B could substantially alter the visual character of Zone 4 of the "Water" Study Area. Both **direct** and **indirect** impacts would be **potentially significant**. ***[Lesser]***

Mitigation Measure: Implement Mitigation Measures 3B.1-2a and 3B.2-2b.

4 and 4A

The discussion provided for the Proposed Off-site Water Facility Alternative and Off-site Water Facility Alternatives 1 and 1A as it relates to the construction and operation of the proposed conveyance pipeline would also apply to Off-site Water Facility Alternatives 4 and 4A. Under Off-site Water Facility Alternatives 4 and 4A, the Folsom Boulevard WTP would be constructed south of Folsom Boulevard and within an undeveloped portion of the Aerojet Property, just south of Becks Furniture. This area is planned for various forms of urban development in conjunction with the Westborough Specific Plan. As a result, the design of the Folsom WTP could be inconsistent with other existing development proposed in the surrounding vicinity of the Folsom Boulevard WTP site. Therefore, **direct** and **indirect** impacts associated with the implementation of Off-site Water Facility Alternatives 4 and 4A would be **potentially significant**. ***[Greater]***

Mitigation Measure: Implement Mitigation Measures 3B.1-2a and 3B.2-2b.

Implementation of Mitigation Measures 3B.1-2a and 3B.1-2b would reduce potentially significant direct and indirect impacts associated with visual quality degradation to a **less-than-significant** level by ensuring structural elements of the WTP, pump stations, and storage tanks blend with the development patterns proposed for the Folsom SPA and within adjacent jurisdictions through the provision of visual screening.

IMPACT 3B.1-3 Creation of a New Source of Substantial Light or Glare that would Adversely Affect Day or Nighttime Views in the "Water" Study Area. *Implementation of the Off-site Water Facility Alternatives would create new sources of substantial light or glare, which could adversely affect day or nighttime views in the "Water" Study Area.*

Construction can involve numerous potential sources of nighttime lighting, including earthmoving and other construction equipment, temporary construction trailers, employee vehicles, and flood and security lighting. Nighttime construction along the conveyance alignments could adversely affect single-family residences along Gerber, Florin, Excelsior, Grant Line, Eagles Nest, and Grant Line Roads and could interfere with the nighttime vision of drivers using these roadways. Because nighttime construction lighting could adversely affect nearby residents and drivers on adjacent roads, this **direct** impact would be **potentially significant**. **No indirect** impacts would result. ***[Similar]***

The WTP under the No USACE Permit Alternative, Proposed Off-site Water Facility Alternative, and Alternatives 1, 1A, 3, and 3A would be constructed in an undeveloped area that has minimal to no existing sources of light and glare. As a result, the WTP would generate new sources of night lighting and glare within an area that currently lacks these sources, thereby, incrementally increasing the amount of light generated within the immediate vicinity of the WTP. Although light generated by the WTP would be typical of similar industrial development to the south, such as existing aggregate processing, by virtue that the new source of illumination would originate from a different location, potentially affecting previously unaffected residences. This **direct** impact would be **potentially significant**. **No indirect** impacts would result. ***[Similar]***

Mitigation Measure 3B.1-3a: Conform to Construction Lighting Standards.

The City shall limit construction to daylight hours to the extent possible. If nighttime lighting or construction is necessary, the City shall ensure that unshielded lights, reflectors, or spotlights are not located and directed to shine toward or be directly visible from adjacent properties or streets. To the extent possible, the City shall minimize the use of nighttime construction lighting within 500 feet of existing residences. This measure shall be identified on grading plans and in construction contracts.

Implementation: City of Folsom Utilities Department

Timing: Prior to approval of grading plans and building permits for WTP, pump stations, and storage tank facilities.

Enforcement:

1. For structural improvements that would be located within the City of Folsom: City of Folsom Community Development Department.

2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department.

3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.

Mitigation Measure 3B.1-3b: Prepare and Submit a Lighting Master Plan.

The City shall prepare a Lighting Master Plan that covers all Off-site Water Facilities-related outdoor light sources. The Lighting Master Plan shall include the following minimum requirements:

- outdoor lighting shall be properly shielded and installed to prevent light trespass on adjacent properties;

- flood or spot lamps installed as part of the Off-site Water Facilities shall be aimed no higher than 45 degrees above straight down (half-way between straight down and straight to the side) when the source is visible from any off-site residential property or public roadway;

- prohibit the use of harsh mercury vapor, low-pressure sodium, or fluorescent bulbs for public lighting in residential neighborhoods; and
- comply with requirements of local jurisdiction, if applicable.

Implementation: City of Folsom Utilities Department

Timing: Prior to approval of grading plans and building permits for WTP, pump stations, and storage tank facilities.

Enforcement:
1. For structural improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department.
3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.

2, 2A, and 2B

The discussion provided for Proposed Off-site Water Facility Alternative and Alternatives 1 and 1A in relation to pipeline construction and potential for sources of nighttime lighting to disrupt adjacent residences and vehicle traffic would apply to Off-site Water Facility Alternatives 2, 2A, and 2B. The implementation of the recommended mitigation would be required to minimize these direct impacts to a less-than-significant level. In contrast, these alternatives do not include the construction of a new WTP, but could involve the use of nighttime lighting at the pump station and storage facilities. For this reason, this **direct** impact is considered **potentially significant**. **No indirect** impact would result. ***[Lesser]***

Mitigation Measure: Implement Mitigation Measures 3B.1-3a and 3B.1-3b.

4 and 4A

The discussion provided for the Proposed Off-site Water Facility Alternative in relation to pipeline construction and potential for sources of nighttime lighting to disrupt adjacent residences and vehicle traffic would apply to Off-site Water Facility Alternatives 4 and 4A.

In relation to the Folsom Boulevard WTP site under these alternatives, the WTP would be constructed on an undeveloped site that is bordered by several existing sources of light and glare, including commercial billboards, street lamps along Folsom Boulevard and within the Aerojet Property, and lighting sources associated with adjacent commercial and industrial facilities. These uses would generally not be sensitive to new sources of light and glare. However, as indicated in Section 3B.10, "Land Use and Agricultural Resources – Water," planned uses adjacent to the WTP include medium- and high-density residential uses. As a result, the development of the WTP under Off-site Water Facility Alternatives 4 and 4A would generate sources of nighttime light and glare that may be disruptive to the residential areas planned adjacent to site and, therefore this **direct** impact would be **potentially significant**. **No indirect** impacts would result. ***[Similar]***

Mitigation Measure: Implement Mitigation Measures 3B.1-3a and 3B.1-3b.

Implementation of Mitigation Measures 3B.1-3a and 3B.1-3b would reduce potentially significant impacts associated with the temporary use of construction lighting to a **less-than-significant** level through adherence to

construction lighting standards and preparation and implementation of a lighting master plan for operational, above-ground facilities.

3B.1.4 RESIDUAL SIGNIFICANT IMPACTS

Implementation of the mitigation measures contained in this section would reduce impacts associated with the appearance of the new structural facilities and associated new light and glare to a less-than-significant level. Impacts related to substantial alteration of a scenic vista and damage to designated scenic corridor would be less than significant and no additional mitigation measures are required. Based on these conclusions, implementation of the Off-site Water Facility Alternatives would not result in residual significant unavoidable impacts to the visual character of the "Water" Study Area or add substantial amounts of light and glare.

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3A.2 AIR QUALITY – LAND

3A.2.1 AFFECTED ENVIRONMENT

The SPA is located in Sacramento County, California, which is under the jurisdiction of the Sacramento Metropolitan Air Quality Management District (SMAQMD). SMAQMD is the primary local agency with respect to air quality for all of Sacramento County. Sacramento County is within the Sacramento Valley Air Basin (SVAB), which also includes all of Butte, Colusa, Glenn, Shasta, Sutter, Tehama, Yolo, and Yuba Counties, the western portion of Placer County, and the eastern portion of Solano County. Off-site elements of the project are located in Sacramento and El Dorado Counties, for which air quality is also regulated by the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (ARB); at a local level, air quality in these two counties is regulated by SMAQMD and the El Dorado County Air Quality Management District (EDCAQMD), respectively. Each of these agencies develops rules, regulations, policies, and/or goals to comply with applicable legislation. Although EPA regulations may not be superseded, both state and local regulations may be more stringent. Applicable regulations associated with criteria air pollutant, TAC, and odor emissions are described separately below. Air quality in this area is determined by such natural factors as topography, climate, and meteorology, in addition to the presence of existing air pollution sources and conditions. These factors are discussed below.

TOPOGRAPHY, CLIMATE, AND METEOROLOGY

The SVAB is relatively flat, bordered by mountains to the east, west, and north. Air flows into the SVAB through the Carquinez Strait, the only breach in the western mountain barrier, and moves across the Sacramento–San Joaquin River Delta, bringing with it pollutants from the heavily populated San Francisco Bay Area. The climate is characterized by hot, dry summers and cool, rainy winters. Periods of dense and persistent low-level fog that are most prevalent between storms are characteristic of SVAB winter weather. From May to October, the region's intense heat and sunlight lead to high ozone concentrations. Summer inversions are strong and frequent, but are less troublesome than those that occur in the fall. Autumn inversions, formed by warm air subsiding in a region of high pressure, have accompanying light winds that do not provide adequate dispersion of air pollutants.

Most precipitation in the area results from air masses that move in from the Pacific Ocean during the winter months. These storms usually move from the west or northwest. More than half the total annual precipitation falls during the winter rainy season (November–February); the average winter temperature is a moderate 49 degrees Fahrenheit (°F). During the summer, daily temperatures range from 50°F to more than 100°F. The inland location and surrounding mountains shelter the area from much of the ocean breezes that keep the coastal regions moderate in temperature.

Regional flow patterns affect air quality patterns by moving pollutants downwind of sources. Localized meteorological conditions, such as moderate winds, disperse pollutants and reduce pollutant concentrations. An inversion layer develops when a layer of warm air traps cooler air close to the ground. Such temperature inversions hamper dispersion by creating a ceiling over the area and trapping air pollutants near the ground. During summer mornings and afternoons, these inversions are present over the SPA. During summer's longer daylight hours, plentiful sunshine provides the energy needed to fuel photochemical reactions between reactive organic gases (ROGs) and oxides of nitrogen (NO), which results in ozone formation.

In the winter, temperature inversions dominate during the night and early morning hours but frequently dissipate by afternoon. The greatest pollution problems during this time of year are from carbon monoxide (CO) and NO_X. High CO concentrations occur on winter days with strong surface inversions and light winds. CO transport is extremely limited.

The local meteorology of the project area is represented by measurements recorded at the Folsom Dam station. The normal annual precipitation, which occurs primarily from November through March, is approximately 24 inches (Western Regional Climate Center 2009). January temperatures range from an average minimum of 37.9°F

to an average maximum of 53.7°F. July temperatures range from an average minimum of 60.3°F to an average maximum of 94.5°F (Western Regional Climate Center 2009). The predominant wind direction and speed is from the south-southwest at approximately 10 mph (ARB 1994).

EXISTING AIR QUALITY—CRITERIA AIR POLLUTANTS

California and National Ambient Air Quality Standards

ARB and EPA currently focus on the following air pollutants as indicators of ambient air quality: ozone, CO, nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM), and lead. Because these are the most prevalent air pollutants known to be deleterious to human health and extensive health-effects criteria documents are available, they are commonly referred to as "criteria air pollutants."

EPA has established primary and secondary national ambient air quality standards (NAAQS) for the following criteria air pollutants: ozone, CO, NO_2, SO_2, respirable particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), and lead. The primary standards protect the public health and the secondary standards protect public welfare. In addition to the NAAQS, ARB has established California ambient air quality standards (CAAQS) for sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing particulate matter, and the above-mentioned criteria air pollutants. In most cases the CAAQS are more stringent than the NAAQS. Differences in the standards are generally explained by the health-effects studies considered during the standard-setting process and the interpretation of the studies. In addition, the CAAQS incorporate an additional margin of safety to protect sensitive receptors, particularly children and infants (ARB 2009a). The NAAQS and CAAQS as discussed above are listed in Table 3A.2-1.

Ozone

Ozone is a photochemical oxidant, a substance whose oxygen combines chemically with another substance in the presence of sunlight, and the primary component of smog. Ozone is not directly emitted into the air but is formed through complex chemical reactions between precursor emissions of ROGs and NO_X in the presence of sunlight. ROGs are volatile organic compounds (VOCs) that are photochemically reactive. ROG emissions result primarily from incomplete combustion and the evaporation of chemical solvents and fuels. NO_X are a group of gaseous compounds of nitrogen and oxygen that results from the combustion of fuels.

A highly reactive molecule, ozone readily combines with many different components of the atmosphere. Consequently, high levels of ozone tend to exist only while high ROG and NO_X levels are present to sustain the ozone formation process. After the precursors have been depleted, ozone levels rapidly decline. Because these reactions occur on a regional scale, ozone is a regional pollutant.

Ozone located in the upper atmosphere (stratosphere) acts in a beneficial manner by shielding the earth from harmful ultraviolet radiation that is emitted by the sun. However, ozone located in the lower atmosphere (troposphere) is a major health and environmental concern. Meteorology and terrain play a major role in ozone formation. Generally, low wind speeds or stagnant air coupled with warm temperatures and clear skies provide the optimum conditions for ozone formation. As a result, summer is generally the peak ozone season. Because of the reaction time involved, peak ozone concentrations often occur far downwind of the precursor emissions. In general, ozone concentrations over or near urban and rural areas reflect an interplay of emissions of ozone precursors, transport, meteorology, and atmospheric chemistry (Godish 2004).

Table 3A.2-1
Summary of Ambient Air Quality Standards and Attainment Designations

Pollutant	Averaging Time	California		National Standards[1]		
		Standards [2,3]	Attainment Status (Sacramento County) [4]	Primary [3,5]	Secondary [3,6]	Attainment Status (Sacramento County) [7]
Ozone	1 hour	0.09 ppm (180 µg/m^3)	N	–	–	–
	8 hours	0.07 ppm (137 µg/m^3)	–	0.08 ppm (157 µg/m^3)	Same as primary standard	N
Carbon monoxide (CO)	1 hour	20 ppm (23 mg/m^3)	A	35 ppm (40 mg/m^3)	–	U/A
	8 hours	9 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)		
Nitrogen dioxide (NO_2) [8]	Annual arithmetic mean	0.030 ppm (56 µg/m^3)	–	0.053 ppm (100 µg/m^3)	Same as primary standard	U/A
	1 hour	0.18 ppm (338 µg/m^3)	A	–		–
Sulfur dioxide (SO_2)	Annual arithmetic mean	–	–	0.030 ppm (80 µg/m^3)	–	U
	24 hours	0.04 ppm (105 µg/m^3)	A	0.14 ppm (365 µg/m^3)	–	
	3 hours	–	–	–	0.5 ppm (1,300 µg/m^3)	
	1 hour	0.25 ppm (655 µg/m^3)	A	–	–	–
Respirable particulate matter (PM_{10})	Annual arithmetic mean	20 µg/m^3	N	-	Same as primary standard	N
	24 hours	50 µg/m^3		150 µg/m^3		
Fine particulate matter ($PM_{2.5}$)	Annual arithmetic mean	12 µg/m^3	N	15 µg/m^3	Same as primary standard	U/A
	24 hours	–	–	35 µg/m^3		
Lead [9]	30-day average	1.5 µg/m^3	A	–	–	–
	Calendar quarter	–	–	1.5 µg/m^3	Same as primary standard	
Sulfates	24 hours	25 µg/m^3	A	No national standards		
Hydrogen sulfide	1 hour	0.03 ppm (42 µg/m^3)	U			
Vinyl chloride [9]	24 hours	0.01 ppm (26 µg/m^3)	U/A			

Table 3A.2-1
Summary of Ambient Air Quality Standards and Attainment Designations

Pollutant	Averaging Time	California		National Standards[1]		
		Standards [2,3]	Attainment Status (Sacramento County) [4]	Primary [3,5]	Secondary [3,6]	Attainment Status (Sacramento County) [7]
Visibility-reducing particle matter	8 hours	Extinction coefficient of 0.23 per kilometer—visibility of 10 miles or more (0.07—30 miles or more for Lake Tahoe) because of particles when the relative humidity is less than 70%.	U		No national standards	

Notes: $\mu g/m^3$ = micrograms per cubic meter; ppm = parts per million.

[1] National standards (other than those for ozone and particulate matter and those based on annual averages or annual arithmetic means) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. The PM_{10} 24-hour standard is attained when 99% of the daily concentrations, averaged over 3 years, are equal to or less than the standard. The $PM_{2.5}$ 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the U.S. Environmental Protection Agency for further clarification and current Federal policies.

[2] California standards for ozone, CO (except Lake Tahoe), SO_2 (1- and 24-hour), NO_2, particulate matter, and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[3] Concentration expressed first in units in which it was issued (i.e., parts per million [ppm] or micrograms per cubic meter [$\mu g/m^3$]). Equivalent units given in parentheses are based on a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; "ppm" in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[4] Unclassified (U): The data are incomplete and do not support a designation of attainment or nonattainment.
Attainment (A): The state standard for that pollutant was not violated at any site in the area during a 3-year period.
Nonattainment (N): There was at least one violation of a state standard for that pollutant in the area.

[5] National primary standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

[6] National secondary standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[7] Nonattainment (N): Any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant.
Attainment (A): Any area that meets the national primary or secondary ambient air quality standard for the pollutant.
Unclassifiable (U): Any area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant.

[8] On February 19, 2008, the Office of Administrative Law approved a new NO_2 ambient air quality standard that lowers the 1-hour standard to 0.19 ppm and establishes a new annual standard of 0.030 ppm. These changes became effective March 20, 2008.

[9] ARB has identified lead and vinyl chloride as toxic air contaminants with no threshold of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Source: ARB 2008a, ARB 2008b

The adverse health effects associated with exposure to ozone pertain primarily to the respiratory system. Scientific evidence indicates that ambient levels of ozone affect not only sensitive receptors, such as asthmatics and children, but healthy adults. Exposure to ambient levels of ozone ranging from 0.10 part per million (ppm) to 0.40 ppm for 1–2 hours has been found to substantially alter lung functions by increasing respiratory rates and pulmonary resistance, decreasing tidal volumes (the amount of air inhaled and exhaled), and impairing respiratory mechanics. Ambient levels of ozone above 0.12 ppm are linked to such symptoms as throat dryness, chest tightness, headache, and nausea. In addition to these adverse health effects, evidence exists relating ozone exposure to an increase in the permeability of respiratory epithelia; such increased permeability leads to an increased response of the respiratory system to challenges and a decrease in the immune system's ability to defend against infection (Godish 2004).

In 1997, EPA promulgated a new 8-hour standard in recognition of impacts resulting from daylong exposure. On April 15, 2004, EPA designated areas of the country that exceed the 8-hour standard ozone standard as nonattainment. The designations were in place as of February 2009. These designations have triggered new planning requirements for the 8-hour standard.

On-road motor vehicles and other mobile sources are by far the largest contributors to NO_X emissions. According to the 2008 emissions inventory for Sacramento County, approximately 58% of NO_X emissions in Sacramento County are generated by on-road motor vehicles (ARB 2009b). More stringent mobile source emission standards and cleaner burning fuels have largely contributed to the decline in NO_X emissions. ROG emissions have been decreasing for the last 30 years because of more stringent motor vehicle standards and new rules for control of ROG from various industrial coating and solvent operations (ARB 2008c). Even so, the ozone problem in the SVAB ranks among the most severe in the state. Peak ozone values in the SVAB have not declined as quickly over the last several years as they have in other urban areas. The peak 8-hour indicator remained fairly constant from 1987 to 1990. Since 1990, the peak 8-hour indicator has decreased slightly, and the overall decline for the 20-year period is almost 13%. Looking at the number of days above the state and national standards, the trend is much more variable. However, the number of 8-hour exceedance days has declined by more than 50% since 1988 (ARB 2008c).

Nitrogen Dioxide

NO_2 is a brownish, highly reactive gas that is present in all urban environments. The major human-made sources of NO_2 are combustion devices, such as boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines. Combustion devices emit primarily nitric oxide (NO), which reacts through oxidation in the atmosphere to form NO_2 (EPA 2009a). The combined emissions of NO and NO_2 are referred to as NO_X and reported as equivalent NO_2. Because NO_2 is formed and depleted by reactions associated with photochemical smog (ozone), the NO_2 concentration in a particular geographical area may not be representative of the local NO_X emission sources.

Inhalation is the most common route of exposure to NO_2. Because NO_2 has relatively low solubility in water, the principal site of toxicity is in the lower respiratory tract. The severity of the adverse health effects depends primarily on the concentration inhaled rather than the duration of exposure. An individual may experience a variety of acute symptoms, such as coughing, difficulty with breathing, vomiting, headache, and eye irritation, during or shortly after exposure. After a period of approximately 4–12 hours, an exposed individual may experience chemical pneumonitis or pulmonary edema with breathing abnormalities, cough, cyanosis, chest pain, and rapid heartbeat. Severe, symptomatic NO_2 intoxication after acute exposure has occasionally been linked with prolonged respiratory impairment with such symptoms as chronic bronchitis and decreased lung function (EPA 2009a).

Carbon Monoxide

CO is a colorless, odorless, and poisonous gas produced by incomplete burning of carbon in fuels, primarily from mobile (transportation) sources. In fact, 56% of the nationwide CO emissions are from on-road mobile sources

and 22% from non-road engines and vehicles such as construction equipment and boats. Other sources of CO emissions include industrial processes (such as metals processing and chemical manufacturing), residential wood burning, and natural sources such as forest fires.

CO enters the bloodstream through the lungs by combining with hemoglobin, which normally supplies oxygen to the cells. However, CO combines with hemoglobin much more readily than oxygen does, resulting in a drastic reduction in the amount of oxygen available to the cells. Adverse health effects associated with exposure to CO concentrations include such symptoms as dizziness, headaches, and fatigue. CO exposure is especially harmful to individuals who suffer from cardiovascular and respiratory diseases (EPA 2009a).

The highest CO concentrations are generally associated with cold, stagnant weather conditions that occur during winter. In contrast to problems caused by ozone, which tends to be a regional pollutant, CO problems tend to be localized.

Sulfur Dioxide

SO_2 is produced by such stationary sources as coal and oil combustion, steel mills, refineries, and pulp and paper mills. The major adverse health effects associated with SO_2 exposure pertain to the upper respiratory tract. SO_2 is a respiratory irritant; constriction of the bronchioles occurs with inhalation of SO_2 at 5 ppm or more. On contact with the moist mucous membranes, SO_2 produces sulfurous acid, which is a direct irritant. Concentration rather than duration of exposure is an important determinant of respiratory effects. Exposure to high SO_2 concentrations may result in edema of the lungs or glottis and respiratory paralysis.

Particulate Matter

Respirable particulate matter with an aerodynamic diameter of 10 micrometers or less is referred to as PM_{10}. PM_{10} consists of particulate matter emitted directly into the air, such as fugitive dust, soot, and smoke from mobile and stationary sources; construction operations; fires and natural windblown dust; and particulate matter formed in the atmosphere by condensation and/or transformation of SO_2 and ROG (EPA 2009a). Fine particulate matter ($PM_{2.5}$) is a subgroup of PM_{10}, consisting of smaller particles that have an aerodynamic diameter of 2.5 micrometers or less (ARB 2008c).

The adverse health effects associated with PM_{10} depend on the specific composition of the particulate matter. For example, health effects may be associated with metals, polycyclic aromatic hydrocarbons (PAH), and other toxic substances adsorbed onto fine particulate matter (referred to as the "piggybacking effect") or with fine dust particles of silica or asbestos. Generally, effects may result from both short-term and long-term exposure to elevated concentrations of PM_{10} and may include breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular diseases, alterations to the immune system, carcinogenesis, and premature death (EPA 2008a). $PM_{2.5}$ poses an increased health risk because the particles can deposit deep in the lungs and may contain substances that are particularly harmful to human health. Direct emissions of PM_{10} and $PM_{2.5}$ increased in the SVAB 1975 and 2005 and are projected to continue increasing through 2020 (ARB 2008c).

Direct emissions of both PM_{10} and $PM_{2.5}$ increased in the SVAB between 1975 and 2005 and are projected to increase through 2020. These emissions are dominated by area wide sources, primarily because of development. Direct emissions of PM from mobile and stationary sources have remained relatively steady (ARB 2008c).

Lead

Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phase-out of leaded gasoline (discussed in detail below), metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers.

Twenty years ago, mobile sources were the main contributor to ambient lead concentrations in the air. In the early 1970s, EPA set national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. EPA banned the use of leaded gasoline in highway vehicles in December 1995 (EPA 2009a).

As a result of EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector have declined dramatically (by 95% between 1980 and 1999), and levels of lead in the air decreased by 94% between 1980 and 1999. Of all lead emissions, transportation sources, primarily airplanes, contribute only 13%. A recent National Health and Nutrition Examination Survey reported a 78% decrease in the levels of lead in human blood between 1976 and 1991. This dramatic decline can be attributed to the move from leaded to unleaded gasoline (as well as the removal of lead from soldered cans) (EPA 2009a).

The decrease in lead emissions and ambient lead concentrations over the past 25 years is California's most dramatic success story with regard to air quality management. The rapid decrease in lead concentrations can be attributed primarily to phasing out the lead in gasoline. This phase-out began during the 1970s, and subsequent ARB regulations have virtually eliminated all lead from gasoline now sold in California. All areas of the state are currently designated as attainment for the state lead standard (EPA does not designate areas for the national lead standard). Although the ambient lead standards are no longer violated, lead emissions from stationary sources still pose "hot spot" problems in some areas. As a result, ARB identified lead as a toxic air contaminant.

California and National Area Designations

Criteria air pollutant concentrations are measured at several monitoring stations in the SVAB. The Folsom-Natoma Street station is the closest monitoring station to the SPA with recent data for ozone, NO_2, and PM_{10}. The When data was not available at the Natoma Street station, as determined by ARB, air pollutant monitoring data was obtained from the Del Paso Manor station in Sacramento, which is the next closest monitoring station to the SPA. In general, the ambient air quality measurements from these monitoring stations are representative of the air quality in the vicinity of the SPA. Table 3A.2-2 summarizes the air quality data from the most recent 3 years for these two monitoring stations.

Both ARB and EPA use this type of monitoring data to designate the attainment status with respect to the CAAQS and NAAQS, respectively, for criteria air pollutants. The purpose of these designations is to identify those areas with air quality problems and thereby initiate planning efforts for improvement. The three basic designation categories are "nonattainment," "attainment," and "unclassified." The "unclassified" designation is used in an area that cannot be classified on the basis of available information as meeting or not meeting the standards. The Natomas Street station is "unclassified."

EXISTING AIR QUALITY—TOXIC AIR CONTAMINANTS

A toxic air contaminant (TAC), or in Federal terms a hazardous air pollutant (HAP), is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. In general, for those TACs that may cause cancer, there is no concentration that does not present some risk. In other words, there is no threshold level below which adverse health impacts may not be expected to occur. This contrasts with the criteria air pollutants for which acceptable levels of exposure can be determined and for which the ambient standards have been established (Table 3A.2-1).

According to the *California Almanac of Emissions and Air Quality 2008 Edition* (ARB 2008c), the majority of the estimated health risk from TACs can be attributed to relatively few compounds, the most important being PM from diesel-fueled engines (diesel PM). Diesel PM differs from other TACs in that it is not a single substance, but

Table 3A.2-2
Summary of Annual Ambient Air Quality Data (2006–2008)

	2006	2007	2008
Ozone			
Maximum concentration (1-hour/8-hour average, ppm)	0.133/0.110	0.129/0.123	0.166/0.123
Number of days state 1-hour standard exceeded	31	13	38
Number of days national 1-hour/8-hour standard exceeded	1/42	1/21	5/50
Nitrogen Dioxide (NO_2)			
Maximum concentration (1-hour, ppm)	0.044	0.049	0.042
Annual average concentration (ppm)	0.008	0.007	0.007
Number of days state 1-hour standard exceeded	0	0	0
Carbon Monoxide (CO) [a]			
Maximum concentration (1-hour/8-hour average, ppm)	4.4/3.49	3.5/2.90	2.9/2.49
Number of days state standard exceeded	0	0	0
Number of days national standard exceeded	0	0	0
Fine Particulate Matter ($PM_{2.5}$) [a]			
Maximum concentration ($\mu g/m^3$) [b]	78.0	61.0	74.4
Number of days national standard exceeded (measured [c])	19	22	8
Number of days national standard exceeded (estimated)	19.3	26.1	24.1
Respirable Particulate Matter (PM_{10})			
Maximum concentration ($\mu g/m^3$) [d]	67.0	75.0	72.0
Number of days state standard exceeded (measured) [c]	7	5	2
Number of days national standard exceeded (measured) [c]	0	0	0

Notes: $\mu g/m^3$ = micrograms per cubic meter; ppm = parts per million

[a] Data was obtained from the Del Paso Manor monitoring station in Sacramento, which is the closest monitoring station to the SPA that monitors for CO and $PM_{2.5}$.

[b] Maximum concentration shown are based on national monitoring methods.

[c] Measured days are those days that an actual measurement was greater than the level of the state daily standard or the national daily standard. Measurements are typically collected every 6 days. Calculated days are the estimated number of days that a measurement would have been greater than the level of the standard had measurements been collected every day. The number of days above the standard is not necessarily the number of violations of the standard for the year.

[d] Maximum concentrations shown are based on state monitoring methods.

Sources: ARB 2009c, EPA 2009b

rather a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, and lubricating oil, and whether an emission control system is present. Unlike the other TACs, no ambient monitoring data are available for diesel PM because no routine measurement method currently exists. However, ARB has made preliminary concentration estimates based on a PM exposure method. This method uses the ARB emissions inventory's PM_{10} database, ambient PM_{10} monitoring data, and the results from several studies on chemical speciation to estimate concentrations of diesel PM. In addition to diesel PM, benzene, 1, 3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent chromium, *para*-dichlorobenzene, formaldehyde, methylene

chloride, and perchloroethylene are the TACs for which data are available that pose the greatest existing ambient risk in California.

Diesel PM poses the greatest health risk among these 10 TACs mentioned. Based on receptor modeling techniques, ARB estimated its health risk to be 360 excess cancer cases per million people in the SVAB. Since 1990, the health risk associated with diesel PM has been reduced by 52%. Overall, levels of most TACs, except for *para*-dichlorobenzene and formaldehyde, have gone down since 1990 (ARB 2008c).

EXISTING AIR QUALITY—NATURALLY OCCURRING ASBESTOS

In addition, naturally occurring asbestos (NOA), which was identified as a TAC in 1986 by ARB, is located in many parts of California and is commonly associated with ultramafic rocks (Clinkenbeard et al. 2002). Asbestos is the common name for a group of naturally occurring fibrous silicate minerals that can separate into thin but strong and durable fibers. Ultramafic rocks form in high-temperature environments well below the surface of the earth. By the time they are exposed at the surface by geologic uplift and erosion, ultramafic rocks may be partially to completely altered into a type of metamorphic rock called serpentinite. Sometimes the metamorphic conditions are right for the formation of chrysotile asbestos or tremolite-actinolite asbestos in the bodies of these rocks or along their boundaries (Churchill and Hill 2000).

For individuals living in areas of NOA, there are many potential pathways for airborne exposure. Exposures to soil dust containing asbestos can occur under a variety of scenarios, including children playing in the dirt; dust raised from unpaved roads and driveways covered with crushed serpentine; grading and earth disturbance associated with construction activity; rock blasting; quarrying; gardening; and other human activities. For homes built on asbestos outcroppings, asbestos can be tracked into the home and can also enter as fibers suspended in outdoor air. Once such fibers are indoors, they can be entrained into the air by normal household activities, such as vacuuming (as many respirable fibers will simply pass through vacuum cleaner bags).

People exposed to low levels of asbestos may be at elevated risk (e.g., above background rates) of lung cancer and mesothelioma. The risk is proportional to the cumulative inhaled dose (quantity of fibers), and also increases with the time since first exposure. Although there are a number of factors that influence the disease-causing potency of any given asbestos (such as fiber length and width, fiber type, and fiber chemistry), all forms are carcinogens.

At the request of SMAQMD, the California Geological Survey (formerly the California Division of Mines and Geology) prepared a report called the *Relative Likelihood for the Presence of Naturally Occurring Asbestos in Eastern Sacramento County, California* (Higgins and Clinkenbeard 2006). According to the map presented in this report more than half of the SPA is located in "areas moderately likely to contain NOA." Although geologic conditions are more likely for asbestos formation in particular areas identified by the map, the presence thereof is not certain. (See Section 3A.7, "Geology, Soil, Minerals, and Paleontological Resources – Land" for additional information regarding NOA.)

EXISTING AIR QUALITY—ODORS

Typically odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another. It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is

because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

3A.2.2 REGULATORY FRAMEWORK

CRITERIA AIR POLLUTANTS

Federal Plans, Policies, Regulations, and Laws

At the Federal level, EPA has been charged with implementing national air quality programs. EPA's air quality mandates are drawn primarily from the Federal Clean Air Act (CAA), which was enacted in 1970. The most recent major amendments made by Congress were in 1990.

The CAA required EPA to establish primary and secondary NAAQS (Table 3A.2-1). The CAA also required each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The Federal Clean Air Act Amendments of 1990 (CAAA) added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is modified periodically to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. EPA has responsibility for reviewing all state SIPs to determine conformation to the mandates of the CAAA and determine whether implementation will achieve air quality goals. If EPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) that imposes additional control measures may be prepared for the nonattainment area. Failure to submit an approvable SIP or to implement the plan within the mandated time frame may result in application of sanctions to transportation funding and stationary air pollution sources in the air basin.

In addition, general conformity requirements were adopted by Congress as part of the CAAA and were implemented by EPA regulations in 1993. General conformity requires that all Federal actions conform to the SIP as approved or promulgated by EPA. The purpose of the general conformity program is to ensure that actions taken by the Federal government do not undermine state or local efforts to achieve and maintain NAAQS. Before a Federal action is taken, it must be evaluated for conformity with the SIP. All reasonably foreseeable emissions, both direct and indirect, predicted to result from the action are taken into consideration and must be identified as to location and quantity. If it is found that the action would create emissions above *de minimis* threshold levels specified in EPA regulations, or if the activity is considered regionally significant because its emissions exceed 10% of an area's total emissions, the action cannot proceed unless mitigation measures are specified that would bring the project into conformance.

General conformity applies in both Federal nonattainment and maintenance areas. Within these areas, it applies to any Federal action not specifically exempted by the CAA or EPA regulations. Emissions from construction activities are also included. General conformity does not apply to projects or actions that are covered by the transportation conformity rule. If a Federal action falls under the general conformity rule, the Federal agency responsible for the action is responsible for making the conformity determination. In some instances, a state will make the conformity determination under delegation from a Federal agency. Private developers are not

responsible for making a conformity determination, but can be directly affected by a determination. General conformity with respect to the project will be determined within the record of decision.

State Plans, Policies, Regulations, and Laws

ARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA). The CCAA, which was adopted in 1988, required ARB to establish CAAQS (Table 3A.2-1). The CCAA requires that all local air districts in the state endeavor to achieve and maintain the CAAQS by the earliest practical date. The act specifies that local air districts should focus particular attention on reducing the emissions from transportation and areawide emission sources, and provides districts with the authority to regulate indirect sources.

Other ARB responsibilities include overseeing compliance with California and Federal laws by local air districts, approving local air quality plans, submitting SIPs to EPA, monitoring air quality, determining and updating area designations and maps, and setting emissions standards for new mobile sources, consumer products, small utility engines, off-road vehicles, and fuels.

ARB and local air pollution control districts are currently developing plans for meeting new national air quality standards for ozone and $PM_{2.5}$. California's adopted 2007 State Strategy was submitted to EPA as a revision to the SIP in November 2007 (ARB 2008d).

Regional and Local Plans, Policies, Regulations, and Laws

Sacramento Metropolitan Air Quality Management District

SMAQMD attains and maintains air quality conditions in Sacramento County through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean-air strategy of SMAQMD includes the preparation of plans for the attainment of ambient air-quality standards, adoption and enforcement of rules and regulations concerning sources of air pollution, and issuance of permits for stationary sources of air pollution. SMAQMD also inspects stationary sources of air pollution and responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by the CAA and amendments thereof (CAAA), and the CCAA.

SMAQMD's *Guide to Air Quality Assessment in Sacramento County* is an advisory document that provides lead agencies, consultants, and project applicant(s) with uniform procedures for addressing air quality in environmental documents. A new version of the guide was released in December 2009 and supersedes the version released in July 2004 (SMAQMD 2009a). The new version of the guide does not include the development of new thresholds of significance; however, it does include updated methodologies for evaluating potential impacts and refined list of recommended mitigation measures. In addition, the guide contains the following applicable components:

- criteria and thresholds for determining whether a project may have a significant adverse air quality impact;
- specific procedures and modeling protocols for quantifying and analyzing air quality impacts;
- methods available to mitigate air quality impacts; and
- information for use in air quality assessments and environmental impact reports (EIRs) that will be updated more frequently such as air quality data, regulatory setting, climate, and topography.

As mentioned above, SMAQMD adopts rules and regulations. All projects are subject to SMAQMD rules and regulations in effect at the time of construction. Specific rules applicable to the construction of the project may include, but are not limited to, the following:

- **Rule 201: General Permit Requirements.** Any project that includes the use of equipment capable of releasing emissions to the atmosphere may require permit(s) from SMAQMD before equipment operation. The applicant, developer, or operator of a project that includes an emergency generator, boiler, or heater should contact SMAQMD early to determine whether a permit is required, and to begin the permit application process. Portable construction equipment (e.g., generators, compressors, pile drivers, lighting equipment) with an internal combustion engine over 50 horsepower (hp) are required to have a SMAQMD permit or ARB portable equipment registration.

- **Rule 403: Fugitive Dust.** The developer or contractor is required to control dust emissions from earthmoving activities or any other construction activity to prevent airborne dust from leaving the SPA.

- **Rule 417: Wood Burning Appliances.** The developer or contractor is prohibited from installing any new, permanently installed, indoor or outdoor, uncontrolled fireplaces in new or existing developments.

- **Rule 442: Architectural Coatings.** The developer or contractor is required to use coatings that comply with the volatile organic compound (VOC) content limits specified in the rule.

- **Rule 902: Asbestos.** The developer or contractor is required to notify SMAQMD of any regulated renovation or demolition activity. Rule 902 contains specific requirements for surveying, notification, removal, and disposal of asbestos-containing material.

In addition, effective as of October 10, 2005, if modeled construction-generated emissions for a project are not reduced to SMAQMD's threshold of significance (85 pounds per day [lb/day]) by the application of the standard construction mitigation, then an off-site construction mitigation fee is recommended. The fee must be paid before a grading permit can be issued. This fee is used by SMAQMD to purchase off-site emissions reductions. Such purchases are made through SMAQMD's Heavy Duty Incentive Program, through which select owners of heavy-duty equipment in Sacramento County can repower or retrofit their old engines with cleaner engines or technologies. SMAQMD provides a Mitigation Fee Calculator for determining the fee for construction projects when off-site mitigation is needed (SMAQMD 2009b).

El Dorado County Air Quality Management District

EDCAQMD attains and maintains air quality conditions in El Dorado County in a manner similar to that described above for SMAQMD (e.g., planning, regulation, and enforcement). Refer to the discussion of SMAQMD above for further detail.

Specific EDCAQMD rules applicable to the off-site elements may include, but are not limited to:

- **Rule 202: Visible Emissions.** A person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more than 3 minutes in any 1 hour which is as dark or darker in shade as that designated as number 1 on the Ringelmann Chart, as published by the U.S. Bureau of Mines.

- **Rule 205: Nuisance.** A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons, or to the public, or which endanger the comfort, repose, health or safety of any such persons, or the public, or which cause to have a natural tendency to cause injury or damage to business or property. This rule does not apply to odors emanating from agriculture operations necessary for the growing of crops or raising of fowl or animals.

- **Rule 215: Architectural Coatings.** The rule concerns emissions of VOCs associated with the application of architectural coatings.

- **Rule 223: Fugitive Dust—General Requirements.** The purpose of this Rule is to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (man-made) fugitive dust sources by requiring actions to prevent, reduce or mitigate fugitive dust emissions.

- **Rule 223-1: Fugitive Dust—Construction, Bulk Material Handling, Blasting, Other Earthmoving Activities and Carryout and Trackout Prevention.** The purpose of this Rule is to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (man-made) fugitive dust sources by requiring actions to prevent, reduce or mitigate fugitive dust emissions.

- **Rule 223-2: Fugitive Dust –Asbestos Hazard Mitigation.** The purpose of this rule is to reduce the amount of asbestos particulate matter entrained in the ambient air as a result of any construction or construction related activities, that disturbs or potentially disturbs naturally occurring asbestos by requiring actions to prevent, reduce or mitigate asbestos emissions.

- **Rule 224: Cutback Asphalt Paving Material.** This rule concerns the discharge to the atmosphere of VOCs caused by the use or manufacture, mixing, storage and application of Cutback or Emulsified asphalt for paving, road construction or road maintenance.

- **Rule 501: General Permit Requirement.** This rule provides an orderly procedure for the review of new sources of air pollution and the orderly review of the modification and operation of existing sources through the issuance of permits. Procedures for issuing, modifying, or renewing Title V permits to operate for stationary sources which are subject to Rule 522 Title V – Federal Operating Permit Program, shall also be consistent with the procedures specified in that rule.

Air Quality Plans

SMAQMD, in coordination with the air quality management districts and air pollution control districts of El Dorado, Placer, Solano, Sutter, and Yolo Counties (including EDCAQMD), prepared and submitted the 1994 *Air Quality Attainment Plan* (AQAP) in compliance with the requirements set forth in the CCAA, which specifically addressed the nonattainment status for ozone and, to a lesser extent, CO and PM_{10}.

The CCAA also requires a triennial assessment of the extent of air quality improvements and emission reductions achieved through the use of control measures. As part of the assessment, the attainment plan must be reviewed and, if necessary, revised to correct for deficiencies in progress and to incorporate new data or projections. The requirement of the CCAA for a first triennial progress report and revision of the 1991 AQAP was fulfilled with the preparation and adoption of the 1994 Ozone Attainment Plan (OAP). The OAP stresses attainment of ozone standards and focuses on strategies for reducing reactive organic gases (ROG) and oxides of nitrogen (NO). It promotes active public involvement, enforcement of SMAQMD rules and regulations, public education in both the public and private sectors, development and promotion of transportation and land use programs designed to reduce vehicle miles traveled (VMT) in the region, and implementation of control measures for stationary and mobile sources. The OAP became part of the SIP in accordance with the requirements of the CAAA and amended the 1991 AQAP. However, at that time, the region could not show that the national ozone (1-hour) standard would be met by 1999. In exchange for moving the deadline to 2005, the region accepted a designation of "severe nonattainment" coupled with additional emissions requirements on stationary sources. Additional triennial reports were also prepared in 1997, 2000, 2003, and 2006 in compliance with the CCAA and act as incremental updates.

Sacramento County and the western portion of El Dorado County are also part of the Sacramento Federal Ozone Nonattainment Area (SFNA), which also comprises of Yolo County and portions of Placer, and Solano Counties. As a nonattainment area, the region is also required to submit rate-of-progress milestone evaluations in accordance with the CAAA. Milestone reports were prepared for 1996, 1999, 2002, and most recently in 2006 for the 8-hour ozone standard. These milestone reports include compliance demonstrations that the requirements have been met for the SFNA. The AQAPs and reports present comprehensive strategies to reduce emissions of ROG, NO_X, and PM_{10} from stationary, area, mobile, and indirect sources. Such strategies include the adoption of rules

and regulations; enhancement of CEQA participation; implementation of a new and modified indirect-source review program; adoption of local air quality plans; and control measures for stationary, mobile, and indirect sources.

The Sacramento region was classified by EPA on June 15, 2004, as a "serious" nonattainment area for the national 8-hour ozone standard with an attainment deadline of June 15, 2013. Emission reductions needed to achieve the air quality standard were identified based on air quality modeling. An evaluation of proposed new control measures and associated ROG and NO_X emission reductions concluded that no set of feasible controls was available to provide the needed emission reductions before the attainment deadline year. Given the magnitude of the shortfall in emission reductions and the schedule for implementing new control measures, the earliest possible attainment demonstration year for the Sacramento region is determined to be the "severe" area deadline of 2019.

Section 181(b)(3) of the CAA permits a state to request that EPA reclassify a nonattainment area to a higher classification and extend the time allowed for attainment. This process is appropriate for areas that must rely on longer term strategies to achieve the emission reductions needed for attainment.

The board of directors for each of the five air districts (including SMAQMD and EDCAQMD) that compose the SFNA requested that ARB submit a formal request for voluntary reclassification from "serious" to "severe" for the 8-hour ozone nonattainment area with an associated attainment deadline of June 15, 2019. ARB submitted that request on February 14, 2008.

On March 24, 2008, EPA published in the *Federal Register* a finding of Failure to Submit the 2011 Reasonable Further Progress Plan for the SFNA. The failure to submit finding triggered the following sanctions clocks:

- **Offset sanctions:** More stringent emission mitigation requirements for new and modified businesses, "major stationary sources," if a complete plan is not submitted within 18 months after EPA's finding of failure to submit the plan.

- **Federal highway funding sanctions:** Prohibiting transportation projects from receiving Federal transportation funding if a complete plan is not submitted within 24 months after EPA findings.

The sanctions clocks will stop after the air districts (including SMAQMD and EDCAQMD) submit the 2011 Reasonable Further Progress Plan and EPA accepts the plan as complete. The *Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan* (SMAQMD 2008a) was published and a public meeting was held in March 2009 to consider approval of the SIP (SMAQMD 2008b). EPA has not yet approved the plan at of the time of writing this EIR/EIS and SMAQMD I waiting for EPA to make a completeness finding (Anderson, pers. comm., 2009).

Although the region has made significant progress in reducing ozone, a problem has arisen with regard to another requirement set forth in the CAA. The region's transportation plan must conform and thus show that it does not harm the region's chances of attaining the ozone standard. The SIP is tied to a "motor vehicle emissions budget;" transportation planners must ensure that emissions anticipated from plans and improvement programs remain within this budget. The instance where no conformity determination can be made is known as conformity lapse. This occurred in October 2004. This Sacramento Regional Nonattainment Area 8-Hour Ozone Rate-of-Progress Plan (February 2006) proposes to update the allowable motor vehicle emissions budgets used to demonstrate that projected regional emissions with all of the new transportation projects will conform to the levels established in the air quality plan.

Sacramento County General Plan

The following goals, objectives, and policies from the Sacramento County General Plan (Sacramento County 1993) regarding air quality are applicable to the on-site and off-site project elements under the Proposed Project

Alternative and the other four action alternatives. There are no Sacramento County General Plan policies related to air quality that would apply to the No Project Alternative.

GOAL: Air Quality which protects and promotes the public health, safety, welfare, and environmental quality of the community.

Objective: The integration of air quality planning with the land use, transportation and energy planning processes.

Objective: A safe and healthful environment for pollution sensitive residential land uses and sensitive receptors.

Objective: A reduction in motor vehicle emissions through a decrease in the average daily trips and VMT.

Objective: Compliance with Federal and state air quality standards.

Objective: A reduction in releases of ozone depleting compounds in order to ensure the protection of the stratospheric ozone layer.

Objective: A reduction in motor vehicle emissions through increasing reliance on electric and other clean alternative fuel and low emission vehicles.

- **Policy AQ-1:** Minimize air pollutant emissions from Sacramento County facilities and operations.
- **Policy AQ-2:** Use ARB, SMAQMD and Sacramento Area Council of Governments (SACOG) guidelines for Sacramento County facilities and operations in order to comply with mandated measures to reduce emissions from fuel consumption, energy consumption, surface coating operations, and solvent usage.
- **Policy AQ-3:** Promote optimal air quality benefits through energy conservation measures in new development.
- **Policy AQ-4:** Support SMAQMD's development of improved ambient air quality monitoring capabilities and the establishment of standards, thresholds and rules to more adequately address the air quality impacts of proposed project plans and proposals.
- **Policy AQ-5:** Require BACT to reduce air pollution emissions.
- **Policy AQ-6:** Provide disincentives for single-occupant vehicle trips through parking supply and pricing controls in areas where supply is limited and alternative transportation modes are available so as not to cause economic disruption, or through other measures identified by SMAQMD and incorporated into regional plans.
- **Policy AQ-7:** Support the use of demand management and pricing controls as near-term measures for attaining AQAP goals and policies.
- **Policy AQ-8:** Implement the Sacramento City/County Bikeways Master Plan.
- **Policy AQ-9:** Secure adequate funding for Regional Transit so that transit is a viable transportation alternative. Development shall pay its fair share of the cost of transit facilities required to serve the project.
- **Policy AQ-10:** Provide incentives for the use of transportation alternatives, including a program for the provision of financial incentives for builders that construct ownership housing within a quarter mile of existing and proposed light rail stations.

- **Policy AQ-11:** Require as a building standard the installation of electrical service in all new residential development that can be used for the overnight charging of electrical vehicles.

- **Policy AQ-12:** The County shall establish an incentive based program for the installation of electrical service for recharging electrical vehicles in public and private parking facilities sufficient to meet demand.

- **Policy AQ-13:** Require the consideration of high occupancy vehicle (HOV) lanes in all street and highway widening and new construction projects for arterials and wider rights-of-way.

- **Policy AQ-14:** Develop a model County employee trip reduction program which may include, but not be limited to, flexible and compressed work schedules, commuter matching services, telecommuting, preferential carpool/vanpool parking, carpool/vanpool and transit subsidies, and all other commute alternative incentives.

- **Policy AQ-15:** All new major indirect sources of emissions shall be reviewed and modified or conditioned to achieve a reduction in emissions. This indirect source review program will be developed in coordination with SACOG and SMAQMD, and include the following features:

    - A 15% reduction in emissions from the level that would be produced by a base-case project assuming full trip generation per the current Institute of Transportation Engineers (ITE) Trip Generation Handbook.

    - A focus on cost-effectiveness measured in terms of cost per ton of pollutant avoided.

    - A list of cost-effective measures to be developed, maintained, and annually reviewed by SMAQMD.

    - A maximum expenditure cap which will be computed for each indirect source on the basis of factors including, but not limited to, total emissions and project value.

    - A process for obtaining a waiver from the 15% requirement if it is found that a lower level of reduction is all that can be achieved with cost-effective measures and offsets, or that achieving the full 15% reduction would cost more than expenditure cap.

    - An exception for projects which have already undergone the indirect source review at some point in the development approval process.

    - A procedure to give full credit for other measures required in a project that may also achieve a reduction in emissions.

- **Policy AQ-16:** Support intergovernmental efforts directed at stricter tailpipe emissions standards.

- **Policy AQ-17:** Require that development projects be located and designed in a manner which will conserve air quality and minimize direct and indirect emission of air contaminants.

- **Policy AQ-18:** Encourage employment-intensive development, having the potential to employ 200 or more employees, where adequate transit service is planned, and discourage such development where adequate transit service is not planned.

- **Policy AQ-19:** Identify the air quality impacts of development proposals to avoid significant adverse impacts and require appropriate mitigation measures or offset fees.

- **Policy AQ-20:** Submit development proposals to SMAQMD for review and comment in compliance with CEQA prior to consideration by the appropriate decision making body.

- **Policy AQ-21:** Provide for the location of ancillary employee services (including, but not limited to, child care, restaurants, banking facilities, convenience markets) at major employment centers for the purpose of reducing midday vehicle trips.
- **Policy AQ-22:** Provide for buffers between sensitive land uses and sources of air pollution or odor.
- **Policy AQ-23:** Promote mixed-use development to reduce the length and frequency of vehicle trips.
- **Policy AQ-24:** Provide for increased intensity of development along existing and proposed transit corridors.
- **Policy AQ-25:** Require that new development be designed to promote pedestrian and bicycle access and circulation.
- **Policy AQ-26:** Accommodate growth within existing urban areas (infill) as a priority over urban expansion.
- **Policy AQ-27:** Require that all employee parking areas for new development be designed with controllable access.
- **Policy AQ-28:** Require that large new developments dedicate land for use as park-and-ride lots if suitably located.
- **Policy AQ-29:** Require traffic counter loops and traffic management hardware at nonresidential garage entrances, driveways, new intersections, and other appropriate locations.
- **Policy AQ-30:** Require that new commercial and industrial projects adjacent to bus stops make provisions in their project design for park-and-ride spaces.
- **Policy AQ-31:** Preserve and ensure the dedication of rights-of-way and station sites along future light rail extensions.
- **Policy AQ-32:** Require that new and replacement fuel storage tanks at automobile and light duty truck refueling stations be clean-fuel compatible, if technically and economically feasible.
- **Policy AQ-33:** Require the recovery of chlorofluorocarbons (CFCs) when air conditioning and refrigeration units are serviced or disposed.
- **Policy AQ-34:** Support revisions to the AQAP to accelerate and strengthen market-based strategies consistent with the General Plan.
- **Policy AQ-35:** In conjunction with SMAQMD and SACOG, support and participate in a public education and outreach program dealing with air quality issues, with a goal of attaining a solid foundation of public support for needed air quality measures.
- **Policy AQ-36:** Coordinate air quality planning efforts with other local, regional, and state agencies.
- **Policy AQ-37:** Maximize air quality benefits through selective use of vegetation in landscaping and through revegetation of appropriate areas.
- **Policy AQ-38:** A conformity analysis shall be conducted to assure that transportation plans, programs, and projects will not impair efforts to meet air quality standards.

At the time of writing this EIR, the Sacramento County General Plan is undergoing its first comprehensive update since it was last adopted in 1993. This update is necessary to plan for growth in the next planning cycle (2005-

2030) as well as to address new emerging planning issues. The update is expected to be adopted in 2010 (Sacramento County Planning and Community Development Department 2009).

El Dorado County General Plan

The following goals, objectives, and policies from the El Dorado County General Plan (El Dorado County 2004) regarding air quality are applicable to the proposed off-site roadways that would extend from the Folsom Heights property east into El Dorado Hills under the Proposed Project Alternative. There are no El Dorado County General Plan policies related to air quality that would apply to the other four action alternatives or the No Project Alternative.

- **Policy TC-1q:** The County shall utilize road construction methods that seek to reduce air, water, and noise pollution associated with road and highway development.

- **Policy TC-3a:** The County shall support all standards and regulations adopted by the El Dorado County Air Quality Management District governing transportation control measures and applicable state and Federal standards.

- **Policy 6.3.1.1:** The County shall require that all discretionary projects and all projects requiring a grading permit, or a building permit that would result in earth disturbance, that are located in areas likely to contain naturally occurring asbestos (based on mapping developed by the California Department of Conservation [DOC]) have a California-registered geologist knowledgeable about asbestos-containing formations inspect the project area for the presence of asbestos using appropriate test methods. The County shall amend the Erosion and Sediment Control Ordinance to include a section that addresses the reduction of thresholds to an appropriate level for grading permits in areas likely to contain naturally occurring asbestos (based on mapping developed by the DOC). The Department of Transportation and the County Air Quality Management District shall consider the requirement of posting a warning sign at the work site in areas likely to contain naturally occurring asbestos based on the mapping developed by the DOC.

GOAL 6.7: Air Quality Maintenance

A. Strive to achieve and maintain ambient air quality standards established by the U.S. Environmental Protection Agency and the California Air Resources Board.

B. Minimize public exposure to toxic or hazardous air pollutants and air pollutants that create unpleasant odors.

Objective 6.7.1: El Dorado County Clean Air Plan – Adopt and enforce the El Dorado County Clean Air Act Plan in conjunction with the County Air Quality Management District.

Objective 6.7.2: Vehicular Emissions – Reduce motor vehicle air pollution by developing programs aimed at minimizing congestion and reducing the number of vehicle trips made in the County and encouraging the use of clean fuels.

- **Policy 6.7.2.5:** Upon reviewing projects, the County shall support and encourage the use of, and facilities for, alternative-fuel vehicles to the extent feasible. The County shall develop language to be included in County contract procedures to give preference to contractors that utilize low-emission heavy-duty vehicles.

Objective 6.7.7: Construction Related, Short-Term Emissions – Reduce construction related, short-term emissions by adopting regulations which minimize their adverse effects.

- **Policy 6.7.7.1:** The County shall consider air quality when planning the land uses and transportation systems to accommodate expected growth, and shall use the recommendations in the most recent version of the El Dorado County Air Quality Management (AQMD) Guide to Air Quality Assessment: Determining

Significance of Air Quality Impacts Under the California Environmental Quality Act, to analyze potential air quality impacts (e.g., short-term construction, long-term operations, toxic and odor-related emissions) and to require feasible mitigation requirements for such impacts. The County shall also consider any new information or technology that becomes available prior to periodic updates of the Guide. The County shall encourage actions (e.g., use of light-colored roofs and retention of trees) to help mitigate heat island effects on air quality.

Objective 6.7.8: The Effects of Air Pollution on Vegetation – Monitor ongoing scientific research regarding the adverse effects, if any, of air pollution on vegetation.

- **Policy 6.7.8.1:** The County shall monitor ongoing scientific research regarding the adverse effects, if any, of air pollution on vegetation, including commercially valuable timber, threatened or endangered plant species, and other plant species. If and when such research conclusively determines, or if and when the weight of scientific opinion concludes, that air pollution is causing significant harm to vegetation within El Dorado County or similarly situated areas, the County, through its periodic review of the General Plan pursuant to Policy 2.9.1.2, shall consider whether to add policies to the General Plan to try to mitigate such harm.

City of Folsom General Plan

The following goals, objectives, and policies from Air Quality Element of the City of Folsom General Plan (City of Folsom 1988) regarding air quality are applicable to the Proposed Project Alternative and the other four action alternatives. There are no City of Folsom General Plan policies related to air quality that would apply to the No Project Alternative.

Air Quality Element Goals and Policies

GOAL 31: To improve the air quality of the City of Folsom including:

1. Achievement and Maintenance of ambient air quality standards established by the U.S. Environmental Protect Agency and the California Air Resources Board.

2. Minimizing public exposure to toxic or hazardous air pollutants.

3. Limiting visibility reducing particulate matter in the atmosphere.

4. Minimizing public exposure to air pollutants which create a public nuisance through irritation to the senses or unpleasant odor.

- **Policy 31.4:** To minimize air quality impacts mitigation measures shall be required for transportation emissions associated with all development estimated to generate 2,000 or more trips per day. Measures include:

    1. Project proponent funding of roadway improvements.

    2. Commercial/industrial project proponent sponsorship of van pools or club buses.

    3. Project proponent funded transit subsidies sufficient to reduce emissions from transit through the substitution of diesel-fueled buses with buses powered by alternative fuels, such as methanol and electric.

    4. Commercial/industrial project sponsored daycare and employee services at the employment site.

    5. Park and ride lots.

- **Policy 31.6:** Non-retail industrial and non-retail commercial projects which directly emit air pollutants should be located in areas designated for industrial development, and separated from residential mixed use areas.

- **Policy 31.7:** All employers of 50 or more full time employees per shift shall develop and implement incentive-based trip reduction programs for their employees. Incentives may include:

    1. Provision of reserved and preferentially located parking spaces for the exclusive use of employees who actively participate in ride-sharing.

    2. Provision of secure bicycle storage facilities.

    3. Provision of shower and locker facilities for use by employees who commute by non-motorized means.

    4. Distribution by employers of current information regarding the availability, cost, and schedules of public transit.

    5. Employer provision of economic incentives to maximize the use of transit, ridesharing, van pooling, and non-motorized transportation.

- **Policy 31.9:** The city should encourage bicycle usage though the development and maintenance of a safe and comprehensive bikeway system which includes:

    1. The provision of securely anchored bicycle racks.

    2. Sidewalks in residential development with protective curbing and adequate lighting.

- **Policy 31.10:** The City of Folsom shall develop, as part of its transportation plan and Transportation and Circulation. Element of the General Plan, a transit development plan so that Folsom residents may safely and conveniently use transit for work, school, shopping, recreational, and other trips within the City and outside of the City.

Goal 32: To minimize public exposure to toxic or hazardous air pollutants.

TOXIC AIR CONTAMINANTS

It is important to understand that TACs are not considered criteria air pollutants and thus are not specifically addressed through the setting of ambient air quality standards. Instead, EPA and ARB regulate HAPs and TACs, respectively, through statutes and regulations that generally require the use of the maximum or best available control technology (MACT and BACT) to limit emissions. These in conjunction with additional rules set forth by SMAQMD establish the regulatory framework for TACs (see discussion under "State and Local Toxic Air Contaminant Programs" below).

Federal Hazardous Air Pollutant Program

EPA has programs for identifying and regulating HAPs. Title III of the CAAA directed EPA to promulgate national emissions standards for HAPs (NESHAP). The NESHAP for major sources of HAPs may differ from those for area sources. Major sources are defined as stationary sources with potential to emit more than 10 tons per year (tpy) of any HAP or more than 25 tpy of any combination of HAPs; all other sources are considered area sources.

The CAAA called on EPA to promulgate emissions standards in two phases. In the first phase (1992–2000), EPA developed technology-based emissions standards designed to reduce emissions as much as feasible. These standards are generally referred to as requiring maximum available control technology (MACT). For area sources, the standards may be different, based on generally available control technology. In the second phase, EPA

promulgated health risk–based emissions standards were deemed necessary to address risks remaining after implementation of the technology-based NESHAP standards.

The CAAA also required EPA to promulgate vehicle or fuel standards containing reasonable requirements that control toxic emissions of, at a minimum, benzene and formaldehyde. Performance criteria were established to limit mobile-source emissions of benzene, formaldehyde, and 1,3-butadiene. In addition, Section 219 of the CAAA required the use of reformulated gasoline in selected areas with the most severe ozone nonattainment conditions to further reduce mobile-source emissions.

State and Local Toxic Air Contaminant Programs

TACs in California are regulated primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807 [Chapter 1047, Statutes of 1983]) and the Air Toxics Hot Spots Information and Assessment Act (AB 2588 [Chapter 1252, Statutes of 1987]). AB 1807 sets forth a formal procedure for ARB to designate substances as TACs. Research, public participation, and scientific peer review must occur before ARB can designate a substance as a TAC. To date, ARB has identified more than 21 TACs and adopted EPA's list of HAPs as TACs. Most recently, particulate matter emissions from diesel exhaust (diesel PM) was added to the ARB list of TACs.

After a TAC is identified, ARB then adopts an airborne toxics control measure (ATCM) for sources that emit that particular TAC. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If there is no safe threshold, the measure must incorporate BACT to minimize emissions; for example, the ATCM limits truck idling to 5 minutes (Title 13, Section 2485 of the California Code of Regulations).

The Air Toxics Hot Spots Information and Assessment Act requires that existing facilities that emit toxic substances above a specified level prepare an inventory of toxic emissions, prepare a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures.

ARB has adopted control measures for diesel PM and more stringent emissions standards for various on-road mobile sources of emissions, including transit buses and off-road diesel equipment (e.g., tractors, generators). In February 2000, ARB adopted a new rule for public-transit bus fleets and emissions standards for new urban buses. These new rules and standards include all the following elements:

- more stringent emission standards for some new urban bus engines, beginning with 2002 model year engines;
- zero-emission bus demonstration and purchase requirements applicable to transit agencies; and
- reporting requirements, under which transit agencies must demonstrate compliance with the public-transit bus fleet rule.

Recent and future milestones include the low-sulfur diesel fuel requirement and tighter emissions standards for heavy-duty diesel trucks (2007) and off-road diesel equipment (2011) nationwide. Over time, replacing older vehicles will result in a vehicle fleet that produces substantially lower levels of TACs than under current conditions. Mobile-source emissions of TACs (e.g., benzene, 1,3-butadiene, diesel PM) have been reduced significantly over the last decade and will be reduced further in California through a progression of regulatory measures (e.g., Low Emission Vehicle/Clean Fuels and Phase II reformulated gasoline regulations) and control technologies. With implementation of ARB's Risk Reduction Plan, it is expected that diesel PM concentrations will be reduced by 75% in 2010 and 85% in 2020 from the estimated year-2000 level. Adopted regulations are also expected to continue to reduce formaldehyde emissions from cars and light-duty trucks. As emissions are reduced, it is expected that risks associated with exposure to the emissions will also be reduced.

In addition, the *Air Quality and Land Use Handbook: A Community Health Perspective*, published by ARB, provides guidance on land use compatibility with sources of TACs (ARB 2005). The handbook is not a law or

adopted policy but offers advisory recommendations for the siting of sensitive receptors near uses associated with TACs, such as freeways and high-traffic roads, commercial distribution centers, rail yards, ports, refineries, dry cleaners, gasoline stations, and industrial facilities, to help keep children and other sensitive populations out of harm's way.

Senate Bill (SB) 352 (California Education Code Section 17213, California Public Resources Code Section 21151.8) expands on previous requirements for the review of TAC sources near school sites. Accordingly, SB 352 requires that any school site located within 500 feet of the edge of the closest travel lane of a freeway or other busy traffic corridor be reviewed for potential health risks.

At the local level, air pollution control or management districts may adopt and enforce ARB control measures. Under SMAQMD Rule 202 (New Source Review), all sources that possess the potential to emit TACs must obtain permits from the district. Permits may be granted to these operations if they are constructed and operated in accordance with applicable regulations, including new-source review standards and air toxics control measures. SMAQMD limits emissions and public exposure to TACs through a number of programs. The district prioritizes TAC-emitting stationary sources based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors.

Sources that require a permit are analyzed by SMAQMD (e.g., health risk assessment) based on their potential to emit toxics. If it is determined that the project will emit toxics in excess of SMAQMD's threshold of significance for TACs (identified below), sources have to implement the BACT for TACs (T-BACT) to reduce emissions. If a source cannot reduce the risk below the threshold of significance even after T-BACT has been implemented, the SMAQMD will deny the permit required by the source. This helps to prevent new problems and reduces emissions from existing older sources by requiring them to apply new technology for controlling TACs when retrofitting emissions sources. It is important to note that the air quality permitting process applies only to stationary sources; properties that may be exposed to elevated levels of TACs from nonstationary sources (e.g., high traffic-volume roadways, truck yards) and the nonstationary sources themselves are not subject to this process or to any requirements of T-BACT implementation. Rather, emissions controls on nonstationary sources are subject to regulations implemented on the state and Federal level. Local programs of EDCAQMD with respect to TACs in El Dorado County are similar to SMAQMD's programs described above.

State regulations on asbestos are related to demolition and renovations, and waste disposal of asbestos-containing materials. California also has a statewide regulation that addresses NOA. The Asbestos ATCM for Asbestos-Containing Serpentine, adopted in 1990, prohibited the use of serpentine aggregate for surfacing if the asbestos content was 5% or more asbestos (ARB 2009d). The limit on asbestos content was lowered to 0.25% in 2000 and modified to include ultramafic rock.

In July 2001, ARB adopted an ATCM for construction, grading, quarrying, and surface mining operations that regulates grading and excavation activities in areas of serpentine or ultramafic rocks. In addition, the Governor's Office of Planning and Research issued a memorandum providing guidance to lead agencies in analyzing the impacts of NOA through the CEQA review process (OPR 2008).

SMAQMD enforces ARB's Asbestos ATCM to control dust emissions and human exposure to the asbestos fibers found in serpentine and ultramafic rock (and soil derived from those substrates). The ATCM can be summarized as follows (ARB 2008e):

> Large construction projects are required to prepare a dust mitigation plan and receive approval from the district prior to start of the project. The plan must specify measures that will be taken to ensure that no visible dust crosses the property line and must address specific topics. The dust mitigation plan must address control of emissions from: track-out, disturbed surface areas, storage piles, on-site vehicle traffic, off-site transport of material, and earthmoving activities. The plan must also address post construction stabilization and air monitoring (if required by the local air

district [SMAQMD]). Table 1 (not shown here) shows control options for the topics to be addressed in the asbestos dust mitigation plan for large construction projects. Many of these requirements would already be carried out by such projects to minimize nuisance dust complaints and protect water quality.

ODORS

SMAQMD adopted a nuisance rule that addresses odor exposure. Rule 402 states that no person shall discharge from any source whatsoever such quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons, or to the public, or that endanger the comfort, repose, health, or safety of any such persons, or the public, or that cause to have a natural tendency to cause injury or damage to business or property. The provisions of Rule 402 do not apply to odors emanating from agricultural operations necessary for the growing of crops or raising of fowl or animals.

SMAQMD recommends that odor impacts be addressed in a qualitative manner. Such an analysis shall determine whether the project would result in excessive nuisance odors, as defined under the California Code of Regulations and Section 41700 of the California Health and Safety Code, and thus would constitute a public nuisance related to air quality.

Two situations increase the potential for odor problems. The first occurs when a new odor source is located near existing sensitive receptors. The second occurs when new sensitive receptors are developed near existing sources of odors. In the first situation, SMAQMD recommends operational changes, add-on controls, process changes, or buffer zones where feasible to address odor complaints. In the second situation, the potential conflict is considered significant if the plan area is at least as close as any other site that has already experienced significant odor problems related to the odor source. For projects being developed near a source of odors where there is no nearby development that may have filed complaints, and for odor sources being developed near existing sensitive receptors, SMAQMD recommends that the determination of potential conflict be based on the distance and frequency at which odor complaints from the public have occurred in the vicinity of a similar facility.

Odors in Sacramento and El Dorado Counties are regulated by SMAQMD and EDCAQMD, respectively. Neither district has specific rules or standards related to odor emissions. Any actions related to odors are based on citizen complaints to local governments and/or to SMAQMD and EDCAQMD.

3A.2.3 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines and guidance from SMAQMD and EDCAQMD. These thresholds also encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. The Proposed Project Alternative or alternatives under consideration were determined to result in a significant impact related to air quality if they would do any of the following:

- conflict with or obstruct implementation of the applicable air quality plan,
- violate any air quality standard or contribute substantially to an existing or projected air quality violation,
- result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable NAAQS or CAAQS (including releasing emissions that exceed quantitative thresholds for ozone precursors),

- expose sensitive receptors to substantial pollutant concentrations, or
- create objectionable odors affecting a substantial number or people.

As stated in Appendix G, the significance criteria established by the applicable air quality management district may be relied on to make the above determinations. Thus, in accordance with SMAQMD- and EDCAQMD recommended thresholds for evaluating project-related air quality impacts, implementation of the Proposed Project Alternative or alternatives under consideration would be considered significant if operation of the Proposed Project Alternative or alternatives under consideration would (SMAQMD 2009a; EDCAQMD 2002):

- for project-related construction activity that would occur in Sacramento County, generate construction-related criteria air pollutant or precursor emissions that exceed the SMAQMD-recommended threshold of 85 lb/day for NO_X, or result in or substantially contribute (at a level equal to or greater than 5%) to emissions concentrations (e.g., 50 $\mu g/m^3$ and 2.5 $\mu g/m^3$ for PM_{10}, respectively) that exceed the NAAQS or CAAQS; for project-related construction activity in El Dorado County, generate construction-related criteria air pollutant or precursor emissions that exceed the EDCAQMD-recommended threshold of 82 lb/day for NO_X or 82 lb/day for ROG, or result in or substantially contribute to emissions concentrations that exceed the NAAQS or CAAQS;
- generate long-term regional criteria air pollutant or precursor emissions that exceed the SMAQMD-recommended threshold of 65 lb/day for ROG and NO_X, or result in or substantially contribute (at a level equal to or greater than 5%) to emissions concentrations (e.g., 50 $\mu g/m^3$ and 2.5 $\mu g/m^3$ for PM_{10}, respectively) that exceed the NAAQS or CAAQS;
- contribute to localized concentrations of air pollutants at nearby receptors that would exceed applicable ambient air quality standards;
- expose sensitive receptors to TAC emissions that exceed an incremental increase of 10 in 1 million for the carcinogenic risk (i.e., the risk of contracting cancer) and/or a noncarcinogenic Hazard Index of 1.0 at the Maximally Exposed Individual (MEI). This threshold of significance applies to projects that would introduce new stationary or area sources of TAC emissions in close proximity to existing or future planned sensitive receptors. ARB and SMAQMD do not have a recommended threshold of significance for evaluating projects that would locate sensitive receptors near existing sources of TAC emissions such as a freeway, high-volume roadway, or rail yard. For the purposes of this analysis, the City will use applicable screening criteria recommended by ARB and SMAQMD as thresholds of significance to evaluate instances in which each action alternative would locate a sensitive receptor in close proximity to a freeway, high-volume roadway, or a TAC-emitting land use such as a gasoline station or a dry-cleaning operation that uses perchloroethylene. (ARB's and SMAQMD's screening criteria are discussed in greater detail under the analysis methodology and Impact 4.2-4 below.); and
- expose sensitive receptors to excessive nuisance odors, as defined under SMAQMD Rule 402 (see "Odors" under "Regional and Local Plans, Policies, Regulations, and Laws" above).

ANALYSIS METHODOLOGY

Short-term construction-generated emissions of criteria air pollutants and ozone precursors were assessed in accordance with methods recommended by SMAQMD and EDCAQMD. Where quantification is required, emissions were modeled using the URBEMIS 2007 Version 9.2.4 computer program (Rimpo and Associates 2008), as recommended by SMAQMD's *Guide to Air Quality Assessment in Sacramento County* (SMAQMD 2009a). URBEMIS was used to determine whether short-term construction-related emissions of criteria air pollutants associated with development of each alternative would exceed applicable thresholds and where mitigation would be required. Modeling was based on project-specific data, when available. However, when

project-specific information (e.g., amount of land to be disturbed/graded per day, types of equipment to be used, number of construction employees) was not available, reasonable assumptions and default settings were used to estimate criteria air pollutant emissions. A detailed list of modeling assumptions is provided in Appendix C1. For linear infrastructure improvements, including the sewer force main connection to the existing off-site pump station north of U.S. 50 and the two roadway connections from Folsom Height into El Dorado Hills (both of which are off-site elements), SMAQMD's Road Construction Emissions Model (SMAQMD 2009c) was used to estimate emissions associated with construction of these facilities. Predicted short-term construction-generated emissions were compared with applicable SMAQMD or EDCAQMD thresholds for determination of significance, depending on the location of the construction activity. Each off-site element was modeled and analyzed separately; however, in the event that construction of one off-site element in SMAQMD's jurisdiction would occur at the same time as construction of another off-site element and/or construction of on-site elements, their combined mass emissions levels are also compared to SMAQMDS's applicable mass emission threshold for NO_X (85 lb/day).

According to SMAQMD, short-term construction-generated ROG emissions should be estimated and disclosed; however, SMAQMD has not established a threshold to determine the significance of such emissions. Thus, in accordance with methodologies recommended by SMAQMD, short-term construction-generated ROG emissions are modeled and presented for informational purposes only. SMAQMD bases this approach on the fact that ROG emissions attributable to construction equipment exhaust are low and those from application of architectural coatings are regulated by Rule 442 (SMAQMD 2009a, page 3-2).

Long-term (i.e., operational) regional emissions of criteria air pollutants and precursors, including mobile- and area-source emissions, were also quantified using the URBEMIS 2007 Version 9.2.4 computer model (Rimpo and Associates 2008) and assume that full build out of the project would occur in the year 2030. The area-source emissions associated with the Proposed Project Alternative and the other four action alternatives were modeled in separate URBEMIS model runs from mobile-source emissions. Area-source emissions were modeled according to the size and type of land uses proposed under the Proposed Project Alternative and the other four action alternatives. Mass mobile-source emissions were modeled based on the net increase in daily vehicle trips and the net increase in regional VMT that would result from full build out of the Proposed Project Alternative and the four other action alternatives. VMT and trip parameters were available from the traffic data used to prepare Section 3A.15, "Traffic and Transportation – Land" Stankiewicz, pers. comm., 2009a). Predicted long-term operational emissions were compared with applicable SMAQMD thresholds for determination of significance.

An ARB publication, *Air Quality and Land Use Handbook: A Community Health Perspective (Handbook)* (ARB 2005), provides guidance concerning land use compatibility with sources of TAC emissions. The *Handbook* offers recommendations for the siting of sensitive receptors near uses associated with TACs, such as freeways and high-traffic roads, commercial distribution centers, rail yards, ports, refineries, dry cleaners, gasoline stations, and industrial facilities. The *Handbook* is advisory and not regulatory, but it offers the recommendations identified below that are pertinent to the project.

- Avoid siting new commercial trucking facilities that accommodate more than 100 trucks per day, or 40 trucks equipped with transportation refrigeration units (TRUs), within 1,000 feet of sensitive receptors (e.g., residences, schools, or parks).

- Avoid siting new sensitive land uses within 300 feet of a large gasoline station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50-foot separation is recommended for typical gasoline-dispensing facilities.

- Avoid siting new sensitive land uses within 300 feet of any dry-cleaning operation using perchloroethylene (perc). For operations with two or more machines, provide 500 feet. For operations with three or more machines, consult the local air district. Do not site new sensitive land uses in the same building with dry-cleaning operations that use perc.

- Obtain facility-specific information where there are questions about siting a sensitive land use close to an industrial facility, including the amount of pollutant emitted and its toxicity, distance to nearby receptors, and types of emissions controls in place.

- Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads carrying 100,000 vehicles per day, or rural roads carrying 50,000 vehicles per day.

The land use compatibility with TAC-generating traffic volumes on area freeways and high-traffic volume roadways is assessed according to guidance provided by ARB's *Handbook* and SMAQMD's *Recommended Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways (Protocol)* (SMAQMD 2010). SMAQMD's *Protocol* provides more detailed guidance for assessing risk levels at receptors located closer to a freeway or high-volume roadway than 500 feet. The guidance provided in SMAQMD's *Protocol* accounts for the orientation of the roadway (i.e., north-south or east-west), the orientation of the receptors relative to the roadway, the predominant wind direction, and the traffic volume during the peak traffic hour. The peak-hour traffic volumes used in this analysis are based on the average daily traffic volumes used in the traffic study prepared for this project (DKS Associates 2009). The *Protocol* has been designed to determine whether a receptor closer than 500 feet to a freeway would be subject to levels of cancer risk greater than 296 in a million. If the screening criteria determine that the level of cancer would be lower than 296 in a million, the *Protocol* advises that no further roadway-related air quality evaluation is recommended. If the level of cancer risk at a receptor is estimated to be greater than 296 in a million the *Protocol* recommends the completion of a site-specific health risk assessment.

It is important to note, however, that both ARB's *Handbook* and SMAQMD's *Protocol* are considered screening level guidance and do not contain recommended thresholds of significance. In particular, SMAQMD's *Protocol* clearly states that the evaluation criterion of 296 in a million does not necessarily represent an acceptable level of cancer risk. In the absence of a recommended threshold of significance from ARB or SMAQMD, however, the City and USACE have decided to use their respective screening levels as the threshold of significance for evaluating roadside TAC exposure in this program-level analysis. The City/USACE believe that the decision to use this screening criterion as a program-level threshold of significance is appropriate, in part, due to expected future changes in the inventory of mobile-source TAC emissions in the SVAB. In 2000, the total SVAB-wide average risk from inhalation of TACs of 520 chances in one million, as determined by ARB, accounts for emissions of 10 select TACs that pose the greatest risk in California based primarily on *ambient* air quality data from all sources (e.g., stationary, area, on-road mobile, other mobile, and natural). According to ARB's emissions inventory for 2000, approximately 23% of the total acetaldehyde emissions for that year, 43% of benzene, 39% of 1,3-butadiene, 31% of formaldehyde, and 28% of diesel PM emitted in the SVAB were associated with on-road mobile sources (ARB 2008c). Based on these percentages and the individual health risks as determined by ARB in 2000 for each TAC, approximately 27.5% (143 chances in one million) of the total SVAB estimated inhalation risk of 520 chances in one million was associated with on-road mobile sources, 70% of the risk being attributable to diesel PM alone. According to ARB, implementation of the risk reduction plan to reduce diesel PM is estimated to drop 2010 and 2020 concentrations and associated health risk by 75% and 85%, respectively, from the estimated 2000 level (ARB 2008c).

Nonetheless, the City/USACE do not intend for their use of ARB and SMAQMD's screening criteria as thresholds of significance to establish a precedent for the CEQA/NEPA analyses performed for other projects in the region, in part, because ARB and SMAQMD are expected to continue to develop guidance and rules regarding mobile-source TAC emissions as future studies of roadside concentrations of TACs become available.

All other air quality impacts (i.e., local mobile-source emissions, exposure of sensitive receptors to TAC and odorous emissions) were assessed in accordance with methodologies recommended by SMAQMD and EDCAQMD. The potential for exposure of people to airborne asbestos associated with the demolition of buildings that have asbestos-containing materials is discussed in Section 3A.8, "Hazards and Hazardous Materials – Land".

IMPACT ANALYSIS

Impacts that would occur under each alternative development scenario are identified as follows: NP (No Project), NCP (No USACE Permit), PP (Proposed Project), RIM (Resource Impact Minimization), CD (Centralized Development), and RHD (Reduced Hillside Development). The impacts for each alternative are compared relative to the Proposed Project Alternative at the end of each impact conclusion (i.e., similar, greater, lesser).

Decisions concerning the project's conformity with the Federal Clean Air Act (i.e., the "conformity analysis") will be made in the USACE record of decision.

IMPACT 3A.2-1 Generation of Construction Emissions of NO_X and PM_{10}. *Construction activities associated with the project would generate intermittent emissions of NO_X and PM_{10}. Because of the large size of the project, construction-generated emissions of NO_X, an ozone precursor, and fugitive PM_{10} dust would exceed SMAQMD-recommended thresholds and would substantially contribute to emissions concentrations that exceed the NAAQS and CAAQS. Thus, project-generated, construction-related emissions of criteria air pollutants and precursors could violate or contribute substantially to an existing or projected air quality violation, expose sensitive receptors to substantial pollutant concentrations, and/or conflict with air quality planning efforts.*

On-Site and Off-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80. If developed, construction of these residences would generate exhaust emissions of criteria air pollutants and precursors from the operation of off-road construction equipment and fugitive PM_{10} dust emissions from ground disturbance activities. Construction-generated emission levels, however, would not be anticipated to exceed SMAQMD thresholds because construction is not expected to require a high number of diesel-powered construction equipment, involve intense levels of earth movement, occur simultaneously, or occur in close proximity to sensitive receptors for an extended period of time. Also, the number of rural residences that could be developed would be less than the NO_X screening level of 180 single-family homes established by SMAQMD (SMAQMD 2009a) Therefore, construction-generated emissions of criteria air pollutants and precursors would not violate or contribute substantially to an existing or projected air quality violation. No off-site water facilities would be constructed under this alternative, so no construction emissions would be generated by off-site improvements. This **direct** impact would be **less than significant**. **No indirect** impact would occur. ***[Lesser]***

On-Site Elements

NCP, PP, RIM, RHD, CD

Construction emissions are considered short term and temporary in duration, but have the potential to represent a significant impact with respect to air quality. Respirable particulate matter (PM_{10}) and fine particulate matter ($PM_{2.5}$) are among the pollutants of greatest concern with respect to construction activities. Particulate emissions from construction activities can lead to adverse health effects and nuisance concerns, such as reduced visibility and soiling of exposed surfaces. Particulate emissions can result from a variety of construction activities, including excavation, grading, demolition, vehicle travel on paved and unpaved surfaces, and vehicle and equipment exhaust. Construction emissions of PM_{10} can vary greatly depending on the level of activity, the specific operations taking place, the number and types of equipment operated, local soil conditions, weather conditions, and the amount of earth disturbance (e.g., site grading, excavation, cut-and-fill).

Emissions of ozone precursors, ROG and NO_X, are primarily generated from mobile sources and vary as a function of vehicle trips per day associated with delivery of construction materials, the importing and exporting of soil, vendor trips, and worker commute trips; and the types and number of heavy-duty, off-road equipment used and the intensity and frequency of their operation. A large portion of construction-related ROG emissions also result from the application of asphalt and architectural coatings and vary depending on the amount of coatings and paving applied each day.

Development of the SPA would occur over a very large area (approximately 3,510 acres), large portions of the SPA would undergo construction at one time, and construction would require substantial amounts of earthwork and grading. However, a detailed schedule describing the timing and location of construction activities under the Proposed Project Alternative and the other four action alternatives is not available at the time of writing this EIR/EIS. Construction of the site is anticipated to commence in 2011 and last until approximately 2030. Given that exhaust emission rates of the construction equipment fleet in the state are expected to decrease over time due to state and SMAQMD-led efforts, maximum daily construction emissions were estimated using the earliest calendar when construction would begin (i.e., 2011) in order to generate conservative estimates. It is anticipated, however, that in later years, advancements in engine technology, retrofits, and turnover in the equipment fleet would result in lower levels of emissions. Accordingly, maximum daily construction emissions for the Proposed Project Alternative and the other four action alternatives were estimated using the URBEMIS 2007 Version 9.2.4 computer program (Rimpo and Associates 2008). URBEMIS is designed to model construction emissions for land use development projects based on building size, land use and type, and disturbed acreage; and allows for the input of project-specific information. Project-generated emissions of criteria air pollutants (e.g., PM_{10}) and precursors (i.e., ROG and NO) were modeled based on general information provided in the project description and default SMAQMD-recommended settings and parameters attributable to the proposed land use types and site location. URBEMIS also divides construction activity into distinct construction phases: site grading, asphalt paving, building construction, and the application of architectural coatings.

Without detailed information about the phasing of construction (see Section 2.3.1 in Chapter 2, "Alternatives," for a discussion of project phasing), it was assumed that the Proposed Project Alternative and the other four action alternatives would be constructed at a consistent, linear rate over a 19-year period (2011–2030). All construction activity phases were assumed to occur simultaneously over the course of a year. Because of the size of the project and the extended period until full build out, it is likely that all four construction phases could occur simultaneously at various locations on the SPA. In other words, site grading, asphalt paving, building construction, and the application of architectural coatings could take place at different areas of the SPA at the same time. Construction emissions levels associated with the Proposed Project Alternative and the other four action alternatives would differ according to the total number of residential units, commercial square footage, office square footage, and school square footage to be developed. Thus, for the Proposed Project Alternative and the other four action alternatives, the subtotal quantities of all land use types were divided by 19 years to calculate the annual average level of construction activity (e.g., residential units, commercial square footage).

Table 3A.2-3 summarizes the modeled worst-case daily emissions of ROG, NO_X, PM_{10} and $PM_{2.5}$ associated with construction of the Proposed Project Alternative and the other four action alternatives. Refer to Appendix C1 for a detailed summary of the URBEMIS modeling assumptions, inputs, and outputs.

As shown above in Table 3A.2-3, the maximum daily level of construction-generated NO_X emissions under the Proposed Project Alternative and the other four action alternatives would exceed the SMAQMD-recommended threshold of 85 lb/day. It should be noted that the maximum daily emissions level estimates displayed in Table 3A.2-3 assume that the intensity of construction activity would be the same during the 19 years of construction on the site. It is more likely, however, that some period of construction (and associated emissions) would be more intense than other periods due to changes in market conditions and according to preferences of the City and the project applicants. If, for instance, peak construction activity would be as much as three times as intense as the average level of construction activity during the 19-year build out period, then the maximum daily emission levels would be three times the levels presented in Table 3A.2-3.

Table 3A.2-3
Summary of Modeled Maximum Daily Criteria Air Pollutant and Precursor Emissions Associated with Construction of On-Site Elements

Source	Emissions (lb/day) [1,2]			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Proposed Project Alternative				
Unmitigated	120.0	128.1	578.8	126.2
Mitigated [3]	119.2	105.4	147.6	—
Resource Impact Minimization Alternative				
Unmitigated	99.2	123.0	485.8	106.6
Mitigated [3]	98.5	100.7	124.1	—
Centralized Development Alternative				
Unmitigated	105.9	124.6	448.7	98.9
Mitigated [3]	105.1	102.3	114.9	—
Reduced Hillside Development Alternative				
Unmitigated	116.7	129.2	569.0	124.2
Mitigated [3]	115.9	106.5	145.2	—
No USACE Permit Alternative				
Unmitigated	89.7	121.6	478.3	105.0
Mitigated [3]	88.9	99.3	122.1	—
SMAQMD Significance Threshold [4]	—	85	—	—

Notes:

ROG = reactive organic gases

NO_X = oxides of nitrogen

PM_{10} = respirable particulate matter with an aerodynamic diameter of 10 micrometers or less

$PM_{2.5}$ = respirable particulate matter with an aerodynamic diameter of 2.5 micrometers or less

SMAQMD = Sacramento Metropolitan Air Quality Management District

lb/day = pounds per day

[1] Maximum daily construction emissions are representative of a construction day in the earliest construction year (2011) assuming that all types of construction activities (i.e., grading, asphalt paving, building construction, and architectural coatings) would take place simultaneously at various locations of the SPA. The detailed breakdown of land use types and other input parameters used in the modeling, as well as detailed modeling output, are included in Appendix C1.

[2] Construction emission estimates do not account for the fact that the intense level of grading that would occur on the eastern side of the SPA (compared to the intensity of grading that would be performed in other areas of the site) under the Proposed Project, Resource Impact Minimization, Reduced Hillside, and No USACE Permit Alternatives, but not the Centralized Development Alternative. This distinction is pertinent because grading is the most emissions-intensive phase of construction activities. However, a more detailed analysis is not provided because grading plans were not available for all action alternatives at the time of the analysis.

[3] The mitigated total reflects a 75% reduction in fugitive PM_{10} dust emissions, a 45% reduction in PM_{10} exhaust emissions from off-road diesel equipment, and a 20% reduction in NO_X emissions from off-road diesel equipment, as required by Mitigation Measure 3A.2-1a, but not the purchase of off-sets for NO_X, as required by Mitigation Measure 3A.2-1b. Reduction levels that would result from other measures listed under Mitigation Measure 3A.2-1a cannot be quantified. A mitigated total is not reported for $PM_{2.5}$ because the reduction that would result from the measures of Mitigation Measure 3A.2-1a cannot be quantified. The purchase of off-sets for NO_X, as required by Mitigation Measure 3A.2-1b, however, would ensure that NO_X would be reduced to 85 lb/day.

[4] SMAQMD has not identified mass emissions thresholds for construction-related emissions of ROG, PM_{10} or $PM_{2.5}$.

Source: Modeling performed by AECOM in 2010

With respect to construction-generated emissions of PM_{10}, SMAQMD typically recommends that project-level analyses determine the maximum concentration of PM_{10} emissions by performing air dispersion modeling with the EPA's AERMOD model if the maximum daily acreage of ground disturbance would exceed 15 acres. Given the overall size of the SPA and the likelihood that substantial portions would undergo construction at one time, it is assumed that more than 15 acres of ground disturbance activity would occur in one day. This is particularly the case for the eastern hillside area of the SPA where extensive cut and fill operations would be performed. Thus, it is concluded that ground-disturbing activities associated with site construction would result in concentrations of PM_{10} that exceed the NAAQS or CAAQS. However, dispersion modeling has not been performed for this program-level analysis because detailed information about grading activities and the locations and occupancy timing of future planned on-site receptors is not known at the time of writing this EIR/EIS. A project-level analysis that incorporates specific details of each phase of the selected alternative would be necessary to perform accurate and meaningful dispersion modeling and properly disclose the air quality impacts associated with PM_{10} emission concentrations. SMAQMD has approved this approach for this analysis because the analysis is being performed at the program-level (Hurley, pers. comm., 2009)

Because mass emissions of NO_X would exceed SMAQMD's recommended threshold of significance and because grading activities are anticipated to be extensive, construction-generated emissions of criteria air pollutants and precursors could violate or contribute substantially to an existing or projected air quality violation. Also, construction emissions of criteria air pollutants and precursors could expose sensitive receptors to substantial pollutant concentrations, particularly when grading and other ground disturbance activities occurs near land uses that have already been developed (and where people are already living or working) on the SPA. In addition, because the SMAQMD's significance thresholds approximately correlate with reductions from heavy-duty vehicles and reduction requirements for land use project emissions in the SIP, construction-generated emissions could also conflict with air quality planning efforts. This would be a **direct significant** impact. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure 3A.2-1a: Implement Measures to Control Air Pollutant Emissions Generated by Construction of On-Site Elements.

To reduce short-term construction emissions, the project applicant(s) for all project phases shall require their contractors to implement SMAQMD's list of Basic Construction Emission Control Practices, Enhanced Fugitive PM Dust Control Practices, and Enhanced Exhaust Control Practices (list below) or whatever mitigation measures are recommended by SMAQMD at the time individual portions of the site undergo construction. In addition to SMAQMD-recommended measures, construction operations shall comply with all applicable SMAQMD rules and regulations.

Basic Construction Emission Control Practices

- Water all exposed surfaces two times daily. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.
- Cover or maintain at least two feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.
- Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.
- Limit vehicle speeds on unpaved roads to 15 miles per hour (mph).
- All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.

- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes (as required by the state airborne toxics control measure [Title 13, Section 2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site.

- Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determine to be running in proper condition before it is operated.

Enhanced Fugitive PM Dust Control Practices – Soil Disturbance Areas

- Water exposed soil with adequate frequency for continued moist soil. However, do not overwater to the extent that sediment flows off the site.

- Suspend excavation, grading, and/or demolition activity when wind speeds exceed 20 mph.

- Install wind breaks (e.g., plant trees, solid fencing) on windward side(s) of construction areas.

- Plant vegetative ground cover (fast-germinating native grass seed) in disturbed areas as soon as possible. Water appropriately until vegetation is established.

Enhanced Fugitive PM Dust Control Practices – Unpaved Roads

- Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site.

- Treat site accesses to a distance of 100 feet from the paved road with a 6 to 12-inch layer of wood chips, mulch, or gravel to reduce generation of road dust and road dust carryout onto public roads.

- Post a publicly visible sign with the telephone number and person to contact at the construction site regarding dust complaints. This person shall respond and take corrective action within 48 hours. The phone number of SMAQMD and the City contact person shall also be posted to ensure compliance.

Enhanced Exhaust Control Practices

- The project shall provide a plan, for approval by the City of Folsom Community Development Department and SMAQMD, demonstrating that the heavy-duty (50 horsepower [hp] or more) off-road vehicles to be used in the construction project, including owned, leased, and subcontractor vehicles, will achieve a project wide fleet-average 20% NO_X reduction and 45% particulate reduction compared to the most current California Air Resources Board (ARB) fleet average that exists at the time of construction. Acceptable options for reducing emissions may include use of late-model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available. The project applicant(s) of each project phase or its representative shall submit to the City of Folsom Community Development Department and SMAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 hp, that would be used an aggregate of 40 or more hours during any portion of the construction project. The inventory shall include the horsepower rating, engine production year, and projected hours of use for each piece of equipment. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs. At least 48 hours prior to the use of heavy-duty off-road equipment, the project representative shall provide SMAQMD with the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman. SMAQMD's Construction Mitigation Calculator can be used to identify an equipment fleet that achieves this reduction (SMAQMD 2007a). The project shall ensure that

emissions from all off-road diesel powered equipment used on the SPA do not exceed 40% opacity for more than three minutes in any one hour. Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) shall be repaired immediately, and the City and SMAQMD shall be notified within 48 hours of identification of non-compliant equipment. A visual survey of all in-operation equipment shall be made at least weekly, and a monthly summary of the visual survey results shall be submitted throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey. SMAQMD staff and/or other officials may conduct periodic site inspections to determine compliance. Nothing in this mitigation measure shall supersede other SMAQMD or state rules or regulations.

- If at the time of construction, SMAQMD has adopted a regulation or new guidance applicable to construction emissions, compliance with the regulation or new guidance may completely or partially replace this mitigation if it is equal to or more effective than the mitigation contained herein, and if SMAQMD so permits. Such a determination must be supported by a project-level analysis and be approved by SMAQMD.

Implementation: The project applicant(s) of all project phases.

Timing: Before the approval of all grading plans by the City and throughout project construction, where applicable, for all project phases.

Enforcement: City of Folsom Community Development Department

Mitigation Measure 3A.2-1b: Pay Off-Site Mitigation Fee to SMAQMD to Off-Set NO_X Emissions Generated by Construction of On-Site Elements.

Implementation of the Proposed Project Alternative or the other four other action alternatives would result in construction-generated NO_X emissions that exceed the SMAQMD threshold of significance, even after implementation of the SMAQMD Enhanced Exhaust Control Practices (listed in Mitigation Measure 3A.2-1a). Therefore, the project applicant(s) shall pay SMAQMD an off-site mitigation fee for implementation of any of the five action alternatives for the purpose of reducing NO_X emissions to a less-than-significant level (i.e., less than 85 lb/day). The specific fee amounts shall be calculated when the daily construction emissions can be more accurately determined: that is, if the City/USACE select and certify the EIR/EIS and approves the Proposed Project Alternative or one of the other four other action alternatives, the City and the applicants must establish the phasing by which development would occur, and the applicants must develop a detailed construction schedule. Calculation of fees associated with each project development phase shall be conducted by the project applicant(s) in consultation with SMAQMD staff before the approval of grading plans by the City. The project applicant(s) for all project phases shall pay into SMAQMD's off-site construction mitigation fund to further mitigate construction-generated emissions of NO_X that exceed SMAQMD's daily emission threshold of 85 lb/day. The calculation of daily NO_X emissions shall be based on the cost rate established by SMAQMD at the time the calculation and payment are made. At the time of writing this EIR/EIS the cost rate is $16,000 to reduce 1 ton of NO_X plus a 5% administrative fee (SMAQMD 2008c). The determination of the final mitigation fee shall be conducted in coordination with SMAQMD before any ground disturbance occurs for any project phase. Based on information available at the time of writing this EIR/EIS, and assuming that construction would be performed at a consistent rate over a 19-year period (and averaging of 22 work days per month), it is estimated that the off-site construction mitigation fees would range from $517,410 to $824,149, depending on which alternative is selected. Because the fee is based on the mass quantity of emissions that exceed SMAQMD's *daily* threshold of significance of 85 lb/day, total fees would be substantially greater if construction activity is more intense during some phases and less intense during other phases of the 19-year build out period, and in any event, based on the actual cost rate applied by SMAQMD. (This

fee is used by SMAQMD to purchase off-site emissions reductions. Such purchases are made through SMAQMD's Heavy Duty Incentive Program, through which select owners of heavy-duty equipment in Sacramento County can repower or retrofit their old engines with cleaner engines or technologies.)

Implementation: The project applicant(s) of all project phases.

Timing: Before the approval of all grading plans by the City and throughout project construction for all project phases.

Enforcement: The City of Folsom Community Development Department shall not grant any grading permits to the respective project applicant(s) until the respective project applicant(s) have paid the appropriate off-site mitigation fee to SMAQMD.

Mitigation Measure 3A.2-1c: Perform a Project-Level Analysis to Disclose Projected PM_{10} Emission Concentrations at Nearby Sensitive Receptors Resulting from Construction of On-Site Elements.

Prior to construction of each development phase of on-site land uses, the project applicant shall perform a project-level CEQA analysis that includes detailed dispersion modeling of construction-generated PM_{10} to disclose what PM_{10} concentrations would be at nearby sensitive receptors. The dispersion modeling shall be performed in accordance with applicable SMAQMD guidance that is in place at the time the analysis is performed. At the time of writing this EIR/EIS, SMAQMD's most current and most detailed guidance for addressing construction-generated PM_{10} emissions is found in its *Guide to Air Quality Assessment in Sacramento County* (SMAQMD 2009a). The project-level analysis shall incorporate detailed parameters of the construction equipment and activities, including the year during which construction would be performed, as well as the proximity of potentially affected receptors, including receptors proposed by the project that exist at the time the construction activity would occur.

Implementation: All detailed, project-level analysis shall be performed by the project applicant(s) and fully funded by the project applicant of each development phase. All feasible mitigation shall be also be funded by the project applicant(s).

Timing: Before the approval of all grading plans by the City.

Enforcement: City of Folsom Community Development Department

Off-Site Elements

Maximum daily construction emissions associated with the construction of the off-site elements were estimated using the URBEMIS 2007 Version 9.2.4 computer program (Rimpo and Associates 2008) and SMAQMD's Road Construction Emissions Model (SMAQMD 2009c). While URBEMIS is designed to model construction emissions for land use development projects, the Road Construction Emissions Model (SMAQMD 2009c) is designed to estimate emissions from heavy-duty construction equipment, haul trucks, and worker commute trips and fugitive PM dust associated with linear construction projects. For all the elements, it was assumed that the most emissions-intensive phase of construction would consist of grading, excavation, and other earth-moving activities (i.e., the grading phase in the construction module of the URBEMIS model). Because detailed information about the construction of the off-site elements was not available at the time of this analysis, the following assumptions were used in the modeling in order to be conservative:

- the entire off-site area could potentially be graded on a single day, regardless of project size;
- each off-site element could potentially be constructed as early as the year 2011. This is a conservative assumption because equipment exhaust emissions from subsequent years are anticipated to be lower as new regulations and emissions technologies for off-road equipment come into place; and

- Nearby land uses on the SPA could be developed and inhabited or operating at the time construction is taking place.

Emission levels associated with the construction of each of the proposed off-site elements were modeled separately. Model inputs include conservative estimates about size (i.e., dimensions and acreage) of the construction area associated with each off-site element based in Exhibit 2-9 (see Chapter 2, "Alternatives") and default parameters (i.e., equipment types and numbers) from the applicable model. Table 3A.2-4 summarizes the modeled worst-case daily emissions of ROG, NO_X, PM_{10} and $PM_{2.5}$ associated with construction of each off-site element. Refer to Appendix C1 for a detailed summary of the modeling assumptions, inputs, and outputs.

Table 3A.2-4
Summary of Modeled Maximum Daily Criteria Air Pollutant and Precursor Emissions Associated with Construction of Off-Site Elements

Off-Site Element	Area (acres)[2]	Emissions (lb/day) [1]			
		ROG	NO_X	PM_{10}	$PM_{2.5}$
In Sacramento County					
Detention Basin [3]	3.4	4.2	33.6	70.6	16.0
Prairie City Road Interchange [3]	19.3	5.3	40.9	388.0	82.7
Rowberry Drive Overcrossing [3]	18.7	5.3	40.9	377.0	80.4
Oak Avenue Interchange [3]	46.7	10.6	89.8	938.7	199.1
Sewer Force Main Connection [4]	2.4	9.8	75.8	27.4	8.0
SMAQMD Significance Threshold [5]	—	—	85	—	—
In El Dorado County					
Roadway Connections 4[4]	1.4	5.8	46.1	16.0	4.9
EDCAQMD Significance Threshold [6]	—	82	82	—	—

Notes:
ROG = reactive organic gases
NO_X = oxides of nitrogen
PM_{10} = respirable particulate matter with an aerodynamic diameter of 10 micrometers or less
$PM_{2.5}$ = respirable particulate matter with an aerodynamic diameter of 2.5 micrometers or less
SMAQMD = Sacramento Metropolitan Air Quality Management District
lb/day = pounds per day

[1] The construction area associated with each off-site element is based on Exhibit 2-9 in Chapter 2, "Alternatives."

[2] Maximum daily construction emissions are representative of a construction day in the earliest construction year (2011). Detailed input parameters and modeling output are included in Appendix C1. Maximum daily mass emissions of PM_{10} and PM2.5 are shown for disclosure purposes only.

[3] Maximum daily emissions were estimated using the construction module and grading phase in URBEMIS 2007 Version 9.2.4 (Rimpo and Associates 2008).

[4] Maximum daily emissions on projects linear in nature were estimated using the Roadway Construction Emissions Model SMAQMD 2009c)

[5] SMAQMD has not identified mass emissions thresholds for construction-related emissions of ROG, PM_{10} or $PM_{2.5}$.

[6] EDCAQMD has not identified mass emissions thresholds for construction-related emissions of PM_{10} or $PM_{2.5}$.

Source: Modeling performed by AECOM in 2009

The analysis of each off-site element is discussed separately below, followed by a discussion of potential impacts to air quality that may result if construction of multiple off-site elements would occur simultaneously.

Detention Basin

The off-site detention basin would be located in Sacramento County and, therefore, in SMAQMD's jurisdiction. Based on Exhibit 2-9 (see Chapter 2, "Alternatives"), construction of the detention basin would involve grading and excavation activity on approximately 3.4 acres of undeveloped land. As shown in Table 3A.2-4, maximum daily emissions of NO_X generated by this activity would be approximately 33.6 lb/day, which is less than SMAQMD's recommended threshold of significance of 85 lb/day. With regard to construction-generated PM_{10} emissions, SMAQMD does not recommend that dispersion modeling be performed to determine whether construction-generated concentrations of PM_{10} would exceed the CAAQS and NAAQS because the maximum daily disturbed area would not exceed SMAQMD's screening level of 15 acres (SMAQMD 2009a, page 3-13, 3-14). Nonetheless, without implementation of SMAQMD's Basic Construction Emission Control Practices, there is a potential that construction-generated concentrations of PM_{10} would exceed or substantially contribute to the CAAQS and NAAQS at nearby sensitive receptors.

Prairie City Road Interchange and Rowberry Drive Crossing

The Prairie City Road Interchange and Rowberry Drive Overcrossing over U.S. Highway 50 (U.S. 50) would be located in Sacramento County and, therefore, in SMAQMD's jurisdiction. Based on Exhibit 2-9 (see Chapter 2, "Alternatives"), construction of these two off-site elements would involve grading and construction activity in areas of approximately 19.3 acres and 18.7 acres, respectively. As shown in Table 3A.2-4, maximum daily emissions of NO_X generated by the grading of each of these areas would be approximately 40.9 lb/day. The emissions level estimated for both elements is the same due to their similarities in size, type of improvement, and the types and number of equipment necessary to construct both elements. Thus, the respective maximum daily emissions of NO_X generated by construction of each of these off-site elements would be less than SMAQMD's recommended threshold of significance of 85 lb/day. With regard to construction-generated PM_{10} emissions, SMAQMD recommends that, if the maximum daily disturbed area exceeds 15 acres, dispersion modeling should be performed to determine whether construction-generated concentrations of PM_{10} would exceed the CAAQS and NAAQS at nearby receptors (SMAQMD 2009a, pages 3-13, 3-14). However, this EIR/EIS contains a program-level analysis; dispersion modeling cannot be performed to support a thorough project-level analysis of these two off-site elements because critical information is not known at the time of writing this EIR/EIS, including detailed parameters about the construction of each off-site element (i.e., equipment types, intensity of earth movement activity, year of construction) and the proximity of future nearby sensitive receptors that may exist at the time the construction is performed, including on-site receptors proposed by the project. Therefore, until a detailed analysis is performed, it is presumed that concentrations of PM_{10} associated with the construction of both of these improvement projects could potentially exceed or contribute substantially to exceedances of the CAAQS and NAAQS at nearby receptors.

Oak Avenue Interchange

The Oak Avenue Interchange would be located in Sacramento County and, therefore, in SMAQMD's jurisdiction. Based on Exhibit 2-9 (see Chapter 2, "Alternatives"), construction of this interchange would involve grading and construction activity in an area that is approximately 46.7 acres in size. As shown in Table 3A.2-4, maximum daily emissions of NO_X generated by the grading of these areas would be approximately 89.8 lb/day, which exceeds SMAQMD's recommended threshold of significance of 85 lb/day.

With regard to construction-generated PM_{10} emissions, SMAQMD recommends that if the maximum daily disturbed area exceeds 15 acres, dispersion modeling should be performed to determine whether construction-generated concentrations of PM_{10} would exceed the CAAQS and NAAQS at nearby receptors (SMAQMD 2009a, pages 3-13, 3-14). However, this EIR/EIS contains a program-level analysis; dispersion modeling cannot currently be performed to support a thorough project-level analysis of the Oak Avenue Interchange element because critical information is not known at the time of writing this EIR/EIS, including detailed parameters about the construction of each off-site element (i.e., equipment types, intensity of earth movement activity, year of

construction) and the proximity of future nearby sensitive receptors that may exist at the time the construction is performed, including on-site receptors proposed by the project. Thus, until such a project-level analysis is performed, it is presumed that concentrations of PM_{10} associated with the construction of the Oak Avenue Interchange could potentially exceed or contribute substantially to exceedances of the CAAQS and NAAQS at nearby receptors.

Therefore, construction-generated NO_X emissions could violate or contribute substantially to an existing or projected air quality violation in the SVAB. Also, construction emissions of criteria air pollutants and precursors could expose sensitive receptors to substantial pollutant concentrations, particularly when grading and other ground disturbance activities occurs near land uses that have already been developed (and where people are already living or working) on the SPA. In addition, because the SMAQMD's significance thresholds approximately correlate with reductions from heavy-duty vehicles and reduction requirements for land use project emissions in the SIP, construction-generated emissions could also conflict with air quality planning efforts.

Sewer Force Main Connection to Existing Off-Site Pump Station

The sewer force main connection to the existing off-site pump station north of U.S. 50 would be located in Sacramento County and, therefore, in SMAQMD's jurisdiction. Based on Exhibit 2-9 (see Chapter 2, "Alternatives"), the sewer force main connection would be approximately 2,100 feet long and, assuming a corridor width of up to 50 feet, as much as 2.4 acres could be subject to involve grading and excavation activity. It is also assumed that some soil would be removed from the site and consistent rock material would be imported to provide a foundation for the conduit. Because this off-site element would be linear in nature, SMAQMD's Road Construction Emissions Model (SMAQMD 2009c) was used to estimate emissions associated with construction of this sewer force main connection. As shown in Table 3A.2-4, maximum daily emissions of NO_X generated by this activity would be approximately 75.8 lb/day, which is less than SMAQMD's recommended threshold of significance of 85 lb/day. With regard to construction-generated PM_{10} emissions, SMAQMD does not recommend that dispersion modeling be performed to determine whether construction-generated concentrations of PM_{10} would exceed the CAAQS and NAAQS because the maximum daily disturbed area would not exceed SMAQMD's screening level of 15 acres (SMAQMD 2009a, pages 3-13, 3-14). Nonetheless, without implementation of SMAQMD's Basic Construction Emission Control Practices, there is a potential that construction-generated concentrations of PM_{10} would exceed the CAAQS and NAAQS at nearby receptors.

Roadway Connections into El Dorado County

Two roadway connections would be constructed from the east side of the SPA into El Dorado County. These roadway connections would be located in EDCAQMD's jurisdiction. Based on Exhibit 2-9 (see Chapter 2, "Alternatives"), the two roadway connections would have a combined length of 1,500 feet and, assuming a corridor width of up 40 feet, as much as 1.4 acres could be subject to grading and excavation activity. It is also assumed that some soil would be removed from the site and some consistent material would be imported to provide a foundation for the roadways. Because this off-site element would be linear in nature, the Road Construction Emissions Model (SMAQMD 2009c) was used to estimate emissions associated with construction of these roadway connections. As shown in Table 3A.2-4, maximum daily emissions of NO_X and ROG generated by this activity would be approximately 46.1 lb/day and 5.8 lb/day, respectively, which are less than EDCAQMD's recommended threshold of significance of 82 lb/day. With regard to construction-generated PM_{10} emissions, dispersion modeling was not performed because the maximum daily disturbed area would not exceed EDCAQMD's screening level of 12 acres. Nonetheless, without implementation of ECAQMD-approved fugitive dust control measures, there is a potential that construction-generated concentrations of PM_{10} would exceed the CAAQS and NAAQS at nearby receptors.

Summary

The timing of construction of each of the off-site elements is unknown at the time of writing this EIR/EIS. If the construction schedules of multiple off-site elements located in SMAQMD's jurisdiction (i.e., Sacramento County) would overlap with each other, and/or with construction of on-site elements, their combined emissions of NO_X would potentially exceed SMAQMD's mass emission threshold of 85 lb/day. The combined effect of NO_X emissions from multiple sources is additive because NO_X is a precursor to ozone, which is a pollutant of regional concern. Even though NO_X emissions associated with construction of the two roadway connections would occur in El Dorado County, their impact would also be additive because the western portion of El Dorado County is part of the SVAB and the SFNA. PM_{10}, however, is a pollutant of localized concern and PM_{10} generated by construction of the various off-site elements would not combine to form higher concentrations of PM_{10} than construction of any single off-site element because the various off-site elements are not located in close proximity to each other. Nonetheless, as discussed above, PM_{10} emissions generated by grading and ground disturbance activity during construction of all of the off-site elements could exceed or substantially contribute to local exceedances of the CAAQS and NAAQS for PM_{10}, especially if adequate dust control measures are not implemented. As a result, because both NO_X and PM_{10} emissions associated with the construction of the off-site elements could exceed applicable thresholds this would be considered a **direct, significant** impact. **No indirect** impacts would occur.

Mitigation Measure 3A.2-1d: Implement SMAQMD's Basic Construction Emission Control Practices during Construction of all Off-Site Elements located in Sacramento County.

The applicants responsible for the construction of each off-site element in Sacramento County shall require its contractors to implement SMAQMD's Basic Construction Emission Control Practices during construction. A list of SMAQMD's Basic Construction Emission Control Practices is provided under Mitigation Measure 3A.2-1a.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., Sacramento County or Caltrans).

Implementation: The project applicant(s) responsible for construction of each off-site element in Sacramento County.

Timing: Before the approval of all grading plans from SMAQMD.

Enforcement:
1. For all off-site improvements within Sacramento County: Sacramento County Planning and Community Development Department.
2. For the U.S. 50 interchange improvements: Caltrans.

Mitigation Measure 3A.2-1e: Implement EDCAQMD-Recommended Measures for Controlling Fugitive PM_{10} dust During Construction of the Two Roadway Connections in El Dorado County.

Prior to construction of each roadway extension in El Dorado County, the applicants or its contractors shall develop a fugitive dust control plan that is approved by EDCAQMD and the applicants shall require their contractors to implement the dust control measures identified in the EDCAQMD-approved fugitive dust control plan. The fugitive dust control plan shall contain measures that are recommended by EDCAQMD at the time the plan is developed, which may include, but is not limited to, the current list of EDCAQMD-recommended dust control measures provided in Table 3A.2-5 below.

Table 3A.2-5 EDCAQMD-Recommend Fugitive Dust Control Measures	
Source	Mitigation Measure
Soil Piles	Enclose, cover, or water twice daily all soil piles
	Automatic sprinkler system installed on soil piles
Exposed Surface/Grading	Water all exposed soil twice daily
	Water exposed soil with adequate frequency to keep soil moist at all times
Truck Hauling Road	Water all haul roads twice daily
	Pave all haul roads
Truck Hauling Load	Maintain at least two feet of freeboard
	Cover load of all haul/dump trucks securely
Source: Table 4.12 of EDCAQMD's *Guide to Air Quality Assessment* (EDCAQMD 2002).	

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado County).

Implementation: The project applicant(s) responsible for constructing the roadway connections in El Dorado County.

Timing: Before the approval of grading plans by EDCAQMD.

Enforcement: El Dorado County Development Services Department.

Mitigation Measure 3A.2-1f: Implement SMAQMD's Enhanced Exhaust Control Practices during Construction of all Off-Site Elements.

Implement SMAQMD's Enhanced Exhaust Control Practices, which are listed in Mitigation Measure 3A.2-1a, in order to control NO_X emissions generated by construction of all off-site elements (in Sacramento and El Dorado Counties, or Caltrans right-of-way).

Implementation: The project applicant(s) responsible for construction of each off-site element in Sacramento and El Dorado counties.

Timing: Before the approval of all grading plans from the respective air district (i.e., SMAQMD or EDCAQMD).

Enforcement:

1. For the two roadway connections in El Dorado Hills: El Dorado County Development Services Department.
2. For the detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.
3. For the U.S. 50 interchange improvements: Caltrans.

Mitigation Measure 3A.2-1g: Pay Off-Site Mitigation Fee to SMAQMD to Off-Set NO_X Emissions Generated by Construction of Off-Site Elements.

The off-site elements could result in construction-generated NO_X emissions that exceed the SMAQMD threshold of significance, even after implementation of the SMAQMD Enhanced Exhaust Control Practices (listed in Mitigation Measure 3A.2-1a). Therefore, the responsible project applicant(s) for each off-site element in Sacramento County shall pay SMAQMD an off-site mitigation fee for implementation of each off-site element in Sacramento County for the purpose of reducing NO_X emissions to a less-than-significant level (i.e., less than 85 lb/day). The specific fee amounts shall be calculated when the daily construction emissions can be more accurately determined. This calculation shall occur if the City/USACE certify the EIR/EIS and select and approves the Proposed Project Alternative or one of the other four other action alternatives, the City, Sacramento County, and the applicants establish the phasing by which construction of the off-site elements would occur, and the applicants develop a detailed construction schedule. Calculation of fees associated with each off-site element shall be conducted by the project applicant(s) in consultation with SMAQMD staff before 'the approval of respective grading plans by Sacramento County. The project applicant(s) responsible for each off-site element in Sacramento County shall pay into SMAQMD's off-site construction mitigation fund to further mitigate construction-generated emissions of NO_X that exceed SMAQMD's daily emission threshold of 85 lb/day. The calculation of daily NO_X emissions shall be based on the cost rate established by SMAQMD at the time the calculation and payment are made. At the time of writing this EIR/EIS the cost rate is $16,000 to reduce 1 ton of NO_X plus a 5% administrative fee (SMAQMD 2008c). The determination of the final mitigation fee shall be conducted in coordination with SMAQMD before any ground disturbance occurs for any project phase. Because the fee is based on the mass quantity of emissions that exceed SMAQMD's *daily* threshold of significance of 85 lb/day, total fees for construction of the off-site elements would vary according to the timing and potential overlap of construction schedules for off-site elements. This measure applies only to those off-site elements located in SMAQMD's jurisdiction (i.e., in Sacramento County) because EDCAQMD does not offer a similar off-set fee program for construction-generated NO_X emissions in its jurisdiction. (This fee is used by SMAQMD to purchase off-site emissions reductions. Such purchases are made through SMAQMD's Heavy Duty Incentive Program, through which select owners of heavy-duty equipment in Sacramento County can repower or retrofit their old engines with cleaner engines or technologies.)

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., Sacramento County or Caltrans).

Implementation: The project applicant(s) of all off-site elements in Sacramento County.

Timing: Before the approval of each grading plan for the off-site elements in Sacramento County.

Enforcement:

1. For all off-site improvements within Sacramento County: Sacramento County Planning and Community Development Department shall not grant any grading permits to the respective project applicant(s) until the respective project applicant(s) have paid the appropriate off-site mitigation fee to SMAQMD.

2. For the U.S. 50 interchange improvements: Caltrans shall not grant any grading permits to the respective project applicant(s) until the respective project applicant(s) have paid the appropriate off-site mitigation fee to SMAQMD.

Mitigation Measure 3A.2-1h: Perform a Project-Level Analysis to Disclose Projected PM_{10} Emission Concentrations at Nearby Sensitive Receptors Resulting from Construction of Off-Site Elements.

Prior to construction of each off-site element located in Sacramento County that would involve site grading or earth disturbance activity that would exceed 15 acres in one day, the responsible agency or its selected consultant shall require that detailed dispersion modeling is conducted of construction-generated PM_{10} emissions pursuant to SMAQMD guidance that is in place at the time the analysis is performed. At the time of writing this EIR/EIS, SMAQMD's most current and most detailed guidance for addressing construction-generated PM_{10} emissions is found in its *Guide to Air Quality Assessment in Sacramento County* SMAQMD 2009a). SMAQMD emphasizes that PM_{10} emission concentrations at nearby sensitive receptors be disclosed in project-level CEQA analysis. Each project-level analysis shall incorporate detailed parameters of the construction equipment and activities, including the year during which construction would be performed, as well as the proximity of potentially affected receptors, including receptors proposed by the project that exist at the time the construction activity would occur. If the modeling analysis determines that construction activity would result in an exceedance or substantial contribution to the CAAQS and NAAQS at a nearby receptor, then the project applicant(s) shall require their respective contractors to implement additional measures for controlling construction-generated PM_{10} exhaust emission and fugitive PM_{10} dust emissions in accordance with SMAQMD guidance, requirements, and/or rules that apply at the time the project-level analysis is performed. It is likely that these measures would be the same or similar to those listed as Enhanced Fugitive PM Dust Control Practices for Soil Disturbance Areas and Unpaved Roads and Enhanced Exhaust Control Practices included in Mitigation Measure 3A.2-1a. Dispersion modeling is not required for the two El Dorado County roadway connections because the total amount of disturbed acreage is expected to be less than the EDCAQMD screening level of 12 acres.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., Sacramento County or Caltrans).

Implementation: All detailed, project-level analysis shall be performed by the responsible lead agency or its selected consultant and funded by the project applicant(s). Implementation of the project-level modeling analysis and any necessary additional mitigation shall be fully funded by the project applicant(s) responsible for each off-site improvement.

Timing:

1. For all off-site improvements within unincorporated Sacramento County: Before the approval of the respective grading plans from the Sacramento County Planning and Community Development Department
2. For the U.S. 50 interchange improvements: Before the approval of construction plans from Caltrans.

Enforcement:

1. For all off-site improvements within Sacramento County: Sacramento County Planning and Community Development Department.
2. For the U.S. 50 interchange improvements: Caltrans.

With regard to NO_X emissions associated with construction of on-site elements, implementation of SMAQMD's Basic Construction Emission Control Practices and Enhanced Exhaust Control Practices, as required by Mitigation Measure 3A.2-1a, and payment of an off-site mitigation fee to off-set construction-generated NO_X emissions, as required by Mitigation Measure 3A.2-1b, would reduce emissions of NO_X associated with construction of the on-site elements to levels that do not exceed SMAQMD's threshold of significance of 85 lb/day.

With regard to NO_X emissions associated with construction of off-site elements, implementation of SMAQMD's Basic Construction Emission Control Practices and Enhanced Exhaust Control Practices, as required by Mitigation Measure 3A.2-1d and Mitigation Measure 3A.2-1f, respectively, and payment of an off-site mitigation fee to off-set construction-generated NO_X emissions, as required by Mitigation Measure 3A.2-1g, would reduce emissions of NO_X associated with construction of the off-site elements in Sacramento County to levels that do not exceed SMAQMD's threshold of significance of 85 lb/day. Consequently, emissions of NO_X associated with the construction of both on-site and off-site elements would be reduced to a **less-than-significant** level.

With regard to PM_{10} emission concentrations resulting from construction of on-site elements implementation of SMAQMD's Basic Construction Emission Control Practices, Enhanced Fugitive PM Dust Control Practices for Soil Disturbance Areas, and Enhanced Fugitive PM Dust Control Practices for Unpaved Roads, as required by Mitigation Measure 3A.2-1a, would reduce PM_{10} concentrations generated during the construction of the on-site elements. Nonetheless, resultant PM_{10} concentrations could potentially exceed or substantially contribute to the CAAQS and NAAQS because the intensity of construction activity and the acreage of ground disturbance that could occur at any one point in time could be substantially high and/or take place in close proximity to existing or future planned sensitive receptors (e.g., residents, schools). Therefore, PM_{10} emissions associated with construction of the on-site elements would be **significant and unavoidable** unless the results of a detailed project-level analysis, as required by Mitigation Measure 3A.2-1c, support another impact conclusion. Mitigation Measure 3A.2-1c requires a detailed project-level analysis after project phasing has been determined and tentative maps and improvement plans have been prepared, because at the time this DEIR/DEIS was prepared, site-specific information that would allow detailed dispersion modeling of construction-generated PM_{10} from construction of the on-site elements in relation to nearby sensitive receptors was not available (please refer to Section 2.3.1 in Chapter 2, "Alternatives," for a discussion of project phasing).

With regard to PM_{10} emission concentrations resulting from construction of off-site elements, implementation of SMAQMD's Basic Construction Emission Control Practices, as required by Mitigation Measure 3A.2-1d, as well as implementation of EDCAQMD-recommended fugitive PM_{10} dust control measures, would reduce PM_{10} concentrations generated during the construction of the off-site elements. Nonetheless, resultant PM_{10} concentrations could potentially exceed or substantially contribute to the CAAQS and NAAQS because the intensity of construction activity and the acreage of ground disturbance that could occur at any one point in time could be substantially high and/or take place in close proximity to existing or future planned sensitive receptors (e.g., residents, schools). Therefore, PM_{10} emissions associated with construction of the off-site elements would be **significant and unavoidable** unless the results of a detailed project-level analysis, as required by Mitigation Measure 3A.2-1h, support another impact conclusion. Mitigation Measure 3A.2-1h requires a detailed project-level analysis after project phasing has been determined and tentative maps and improvement plans have been prepared, because at the time this DEIR/DEIS was prepared, site-specific information that would allow detailed dispersion modeling of construction-generated PM_{10} from construction of the off-site elements in relation to nearby sensitive receptors was not available.

Additionally, some of the off-site elements fall under the jurisdiction of El Dorado and Sacramento Counties and/or Caltrans; therefore, the City would not have control over their timing or implementation. Therefore, the impacts related to those off-site facilities are considered potentially significant and unavoidable. These impacts would be reduced to a **less-than-significant** level if El Dorado County and/or Caltrans cooperate in their implementation.

IMPACT 3A.2-2 Generation of Long-Term Operational (Regional) Emissions of ROG, and NO_X. *Operational area- and mobile-source emissions from project implementation would exceed the SMAQMD-recommended threshold of 65 lb/day for ROG and NO_X, and would result in or substantially contribute to emissions concentrations that exceed the NAAQS or CAAQS for ozone. In addition, because of the large increase in emissions associated with project build out and the fact that the project is not within an already approved plan (which means that increased emissions would not already be accounted for in applicable air quality plans), project implementation could conflict with air quality planning efforts in the SVAB.*

On-Site and Off-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80. This amount of development is less than SMAQMD's operational screening level of 375 single family dwelling units (SMAQMD 2009a). Thus, if developed, these residences would not be anticipated to generate operational emissions that exceed the SMAQMD-recommended threshold of 65 lb/day for ROG and NO_X. Also, it is not anticipated that operation of these rural residents would generate concentrations of PM_{10} and $PM_{2.5}$ emissions that would exceed or substantially contribute to emissions concentrations that exceed the NAAQS or CAAQS for these pollutants. In addition, no stationary sources of CAPs would be developed on the site or as part of the off-site water facilities. Thus, the **direct** impact of long-term operational emissions of criteria air pollutants and precursors would be **less than significant**. **No indirect** impacts would occur. ***[Lesser]***

On-Site Elements

NCP

Operation of the No USACE Permit Alternative would also result in long-term regional emissions of ROG, NO_X, and PM_{10} associated with area sources, such as natural gas emissions, landscaping, applications of architectural coatings, in addition to operational vehicle-exhaust emissions. According to the traffic data used to prepare Section 3A.15, "Traffic and Transportation – Land," full build out of the No USACE Permit Alternative would result in approximately 196,000 additional vehicle trips per day and a regional net increase of 511,300 VMT per day (Stankiewicz, pers. comm., 2009a). Operational emissions were also modeled in URBEMIS and estimated operational emissions for the No USACE Permit Alternative are presented in Table 3A.2-6.

Table 3A.2-6
Summary of Modeled Long-Term Operational Emissions Under the No USACE Permit Alternative

Source	Emissions (lb/day) [1]			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Operational Sources [1]				
Mobile-Source Emissions	418	264	882	171
Area-Source Emissions	974	257	859	826
Total Unmitigated Operational Emissions	1,393	521	1,741	997
SMAQMD Significance Threshold	65	65	— [2]	— [2]

Notes: CAAQS = California ambient air quality standards; lb/day = pounds per day; $\mu g/m^3$ = micrograms per cubic meter; ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; SMAQMD = Sacramento Metropolitan Air Quality Management District
See Appendix C1 for modeling assumptions and results.

Table 3A.2-6
Summary of Modeled Long-Term Operational Emissions Under the No USACE Permit Alternative

Source	Emissions (lb/day) [1]			
	ROG	NO_X	PM_{10}	$PM_{2.5}$

[1] Operational emissions shown represent the maximum daily emissions during the summertime or wintertime in year 2030. Totals may not add exactly due to rounding.

[2] SMAQMD has not identified mass emissions thresholds for operational emissions of PM_{10} or $PM_{2.5}$. Emission levels are shown for informational purposes only.

Source: Modeling performed by AECOM in 2009

Based on the modeling conducted, and as summarized in Table 3A.2-6, operation of the No USACE Permit Alternative would result in a net increase in unmitigated long-term regional emissions of approximately 1,393 lb/day of ROG, 521 lb/day of NO_X, 1,741 lb/day of PM_{10}, and 997 lb/day of $PM_{2.5}$. Operational area- and mobile-source emissions of NO_X from implementation of the No USACE Permit Alternative would exceed the SMAQMD-recommended threshold of 65 lb/day for ROG and NO_X, and would result in or substantially contribute to emissions concentrations that exceed the NAAQS or CAAQS. In addition, because development of the SPA is not included in an already-approved general plan, and operational emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ associated with land use development on the site would not already be accounted for in applicable air quality plans, implementation of the No USACE Permit Alternative could conflict with air quality planning efforts in the SVAB. As a result, this long-term **direct** impact is considered **significant**. **No indirect** impacts would occur. ***[Lesser]***

Mitigation Measure 3A.2-2: Implement All Measures Prescribed by the Air Quality Mitigation Plan to Reduce Operational Air Pollutant Emissions.

To reduce operational emissions, the project applicant(s) for all project phases shall implement all measures prescribed in the SMAQMD-approved *Folsom Plan Area Specific Plan Air Quality Mitigation Plan* (AQMP) (Torrence Planning 2008), a copy of which is included in Appendix C2. The AQMP is intended to improve mobility, reduce vehicle miles traveled, and improve air quality as required by AB 32 and SB 375. The AQMP includes, among others, measures designed to provide bicycle parking at commercial land uses, an integrated pedestrian/bicycle path network, transit stops with shelters, a prohibition against the use the wood-burning fireplaces, Energy Star roofing materials, electric lawnmowers provided to homeowners at no charge, and on-site transportation alternatives to passenger vehicles (including light rail) that provide connectivity with other local and regional alternative transportation networks.

Implementation: The project applicant(s) of all project phases.

Timing: Before issuance of subdivision maps or improvement plans.

Enforcement: City of Folsom Community Development Department.

PP

Operation of the Proposed Project Alternative would result in long-term regional emissions of ROG, NO_X, and PM_{10} associated with area sources, such as natural gas emissions, landscaping, applications of architectural coatings, in addition to operational vehicle-exhaust emissions. According to the traffic data used to prepare Section 3A.15, "Traffic and Transportation – Land," full build out of the Proposed Project Alternative would

result in approximately 247,000 additional vehicle trips per day and a regional net increase of 612,800 VMT per day (Stankiewicz, pers. comm., 2009a).

Operational emissions were modeled using the URBEMIS 2007 Version 9.2.4 computer program (Rimpo and Associates 2008), as recommended by SMAQMD. Model defaults were adjusted to reflect project-specific data where available including the sizes and types of proposed land uses. Modeled operational emissions for the Proposed Project Alternative are presented in Table 3A.2-7. Refer to Appendix C1 for a detailed summary of the URBEMIS modeling assumptions, inputs, and outputs.

Table 3A.2-7
Summary of Modeled Long-Term Operational Emissions Under the Proposed Project Alternative

Source	Emissions (lb/day) [1]			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Operational Sources [1]				
Mobile-Source Emissions	522	323	1,058	205
Area-Source Emissions	1,539	386	1,375	1,324
Total Unmitigated Operational Emissions	2,061	709	2,433	1,529
SMAQMD Significance Threshold	65	65	— [2]	— [2]

Notes: CAAQS = California ambient air quality standards; lb/day = pounds per day; $\mu g/m^3$ = micrograms per cubic meter; ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; SMAQMD = Sacramento Metropolitan Air Quality Management District

See Appendix C1 for modeling assumptions and results.

[1] Operational emissions shown represent the maximum daily emissions during the summertime or wintertime in year 2030. Totals may not add exactly due to rounding.

[2] SMAQMD has not identified mass emissions thresholds for operational emissions of PM_{10} or $PM_{2.5}$. Emission levels are shown for informational purposes only.

Source: Modeling performed by AECOM in 2010

Based on the modeling conducted, and as summarized in Table 3A.2-7, operation of the Proposed Project Alternative would result in a net increase in unmitigated long-term regional emissions of approximately 2,061 lb/day of ROG, 709 lb/day of NO_X, 2,433 lb/day of PM_{10}, and 1,529 lb/day of $PM_{2.5}$. Operational area- and mobile-source emissions of NO_X from implementation of the Proposed Project Alternative would exceed the SMAQMD-recommended threshold of 65 lb/day for ROG and NO_X, and would result in or substantially contribute to emissions concentrations that exceed the NAAQS or CAAQS. In addition, because development of the SPA is not included in an existing approved general plan, and operational emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ associated with land use development on the site would not already be accounted for in applicable air quality plans, implementation of the Proposed Project Alternative could conflict with air quality planning efforts in the SVAB. As a result, this long-term **direct** impact is considered **significant**. **No indirect** impacts would occur.

Mitigation Measure: Implement Mitigation Measure 3A.2-2.

RIM

Operation of the Resource Impact Minimization Alternative would also result in long-term regional emissions of ROG, NO_X, and PM_{10} associated with area sources, such as natural gas emissions, landscaping, applications of architectural coatings, in addition to operational vehicle-exhaust emissions. According to the traffic data used to prepare Section 3A.15, "Traffic and Transportation – Land," full build out of the Resource Impact Minimization Alternative would result in approximately 192,000 additional vehicle trips per day and a regional net increase of

474,800 VMT per day (Stankiewicz, pers. comm., 2009a). Operational emissions were also modeled in URBEMIS and estimated operational emissions for the Resource Impact Minimization Alternative are presented in Table 3A.2-8.

Table 3A.2-8
Summary of Modeled Long-Term Operational Emissions Under the Resource Impact Minimization Alternative

Source	Emissions (lb/day) [1]			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Operational Sources [1]				
Mobile-Source Emissions	407	250	821	159
Area-Source Emissions	1,205	305	1,073	1,033
Total Unmitigated Operational Emissions	1,612	556	1,894	1,192
SMAQMD Significance Threshold	65	65	— [2]	— [2]

Notes: CAAQS = California ambient air quality standards; lb/day = pounds per day; $\mu g/m^3$ = micrograms per cubic meter; ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; SMAQMD = Sacramento Metropolitan Air Quality Management District

See Appendix C1 for modeling assumptions and results.

[1] Operational emissions shown represent the maximum daily emissions during the summertime or wintertime in year 2030. Totals may not add exactly due to rounding.

[2] SMAQMD has not identified mass emissions thresholds for operational emissions of PM_{10} or $PM_{2.5}$. Emission levels are shown for informational purposes only.

Source: Modeling performed by AECOM in 2009

Based on the modeling conducted, and as summarized in Table 3A.2-8, operation of the Resource Impact Minimization Alternative would result in a net increase in unmitigated long-term regional emissions of approximately 1,612 lb/day of ROG, 556 lb/day of NO_X, 1,894 lb/day of PM_{10}, and 1,192 lb/day of $PM_{2.5}$. Operational area- and mobile-source emissions of NO_X from implementation of the Resource Impact Minimization Alternative would exceed the SMAQMD-recommended threshold of 65 lb/day for ROG and NO_X, and would result in or substantially contribute to emissions concentrations that exceed the NAAQS or CAAQS. In addition, because development of the SPA is not included in an already-approved general plan, and operational emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ associated with land use development on the site are not already accounted for in the applicable SMAQMD regional air quality plans, implementation of the Resource Impact Minimization Alternative could conflict with air quality planning efforts in the SVAB. As a result, this long-term **direct** impact is considered **significant**. **No indirect** impacts would occur. ***[Lesser]***

Mitigation Measure: Implement Mitigation Measure 3A.2-2.

RHD

Operation of the Reduced Hillside Development Alternative would also result in long-term regional emissions of ROG, NO_X, and PM_{10} associated with area sources, such as natural gas emissions, landscaping, applications of architectural coatings, in addition to operational vehicle-exhaust emissions. According to the traffic data used to prepare Section 3A.15, "Traffic and Transportation – Land," full build out of the Reduced Hillside Development Alternative would result in approximately 268,000 additional vehicle trips per day and a regional net increase of 634,300 VMT per day (Stankiewicz, pers. comm., 2009a). Operational emissions were also modeled in URBEMIS and estimated operational emissions for the Reduced Hillside Development Alternative are presented in Table 3A.2-9.

Table 3A.2-9
Summary of Modeled Long-Term Operational Emissions Under the Reduced Hillside Development Alternative

Source	Emissions (lb/day) [1]			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Operational Sources [1]				
Mobile-Source Emissions	517	323	1,069	207
Area-Source Emissions	1,718	411	1,556	1,497
Total Unmitigated Operational Emissions	2,235	734	2,625	1,705
SMAQMD Significance Threshold	65	65	— [2]	— [2]

Notes: CAAQS = California ambient air quality standards; lb/day = pounds per day; $\mu g/m^3$ = micrograms per cubic meter; ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; SMAQMD = Sacramento Metropolitan Air Quality Management District

See Appendix C1 for modeling assumptions and results.

[1] Operational emissions shown represent the maximum daily emissions during the summertime or wintertime in year 2030. Totals may not add exactly due to rounding.

[2] SMAQMD has not identified mass emissions thresholds for operational emissions of PM_{10} or $PM_{2.5}$. Emission levels are shown for informational purposes only.

Source: Modeling performed by AECOM in 2010

Based on the modeling conducted, and as summarized in Table 3A.2-9, operation of the Reduced Hillside Development Alternative would result in a net increase in unmitigated long-term regional emissions of approximately 2,235 lb/day of ROG, 734 lb/day of NO_X, 2,625 lb/day of PM_{10}, and 1,705 lb/day of $PM_{2.5}$. Operational area- and mobile-source emissions of NO_X from implementation of the Reduced Hillside Development Alternative would exceed the SMAQMD-recommended threshold of 65 lb/day for ROG and NO_X, and would result in or substantially contribute to emissions concentrations that exceed the NAAQS or CAAQS. In addition, because development of the SPA is not included in an already-approved general plan, and operational emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ associated with land use development on the site are not already accounted for in applicable SMAQMD regional air quality plans, implementation of the Reduced Hillside Development Alternative could conflict with air quality planning efforts in the SVAB. As a result, this long-term **direct** impact is considered **significant**. **No indirect** impacts would occur. ***[Greater]***

Mitigation Measure: Implement Mitigation Measure 3A.2-2.

CD

Operation of the Centralized Development Alternative would also result in long-term regional emissions of ROG, NO_X, and PM_{10} associated with area sources, such as natural gas emissions, landscaping, applications of architectural coatings, in addition to operational vehicle-exhaust emissions. According to the traffic data used to prepare Section 3A.15, "Traffic and Transportation – Land," full build out of the Centralized Development Alternative would result in approximately 230,000 additional vehicle trips per day and a regional net increase of 601,700 VMT per day (Stankiewicz, pers. comm., 2009a). Operational emissions were also modeled in URBEMIS and estimated operational emissions for the Centralized Development Alternative are presented in Table 3A.2-10.

Table 3A.2-10
Summary of Modeled Long-Term Operational Emissions Under the Centralized Development Alternative

Source	Emissions (lb/day) [1]			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Operational Sources [1]				
Mobile-Source Emissions	497	312	1,040	201
Area-Source Emissions	1,358	340	1,215	1,170
Total Unmitigated Operational Emissions	1,855	652	2,255	1,371
SMAQMD Significance Threshold	65	65	— [2]	— [2]

Notes: CAAQS = California ambient air quality standards; lb/day = pounds per day; $\mu g/m^3$ = micrograms per cubic meter; ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; SMAQMD = Sacramento Metropolitan Air Quality Management District

See Appendix C1 for modeling assumptions and results.

[1] Operational emissions shown represent the maximum daily emissions during the summertime or wintertime in year 2030. Totals may not add exactly due to rounding.

[2] SMAQMD has not identified mass emissions thresholds for operational emissions of PM_{10} or $PM_{2.5}$. Emission levels are shown for informational purposes only.

Source: Modeling performed by AECOM in 2010

Based on the modeling conducted, and as summarized in Table 3A.2-10, operation of the Centralized Development Alternative would result in a net increase in unmitigated long-term regional emissions of approximately 1,855 lb/day of ROG, 652 lb/day of NO_X, 2,255 lb/day of PM_{10}, and 1,371 lb/day of $PM_{2.5}$. Operational area- and mobile-source emissions of NO_X from implementation of the Centralized Development Alternative would exceed the SMAQMD-recommended threshold of 65 lb/day for ROG and NO_X, and would result in or substantially contribute to emissions concentrations that exceed the NAAQS or CAAQS. In addition, because development of the SPA is not included in an already-approved general plan, and operational emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ associated with land use development on the site would not already be accounted for in applicable air quality plans, implementation of the Centralized Development Alternative could conflict with air quality planning efforts in the SVAB. As a result, this long-term **direct** impact is considered **significant**. **No indirect** impacts would occur. ***[Lesser]***

Mitigation Measure: Implement Mitigation Measure 3A.2-2.

Off-Site Elements

The off-site elements would not be anticipated to result in increased operational emissions of criteria air pollutants beyond those associated with the on-site project development. While the road improvement-related elements would accommodate local vehicle traffic, they would not be expected to result in a substantial increase in vehicle trips and associated mobile-source emissions. (A substantial portion of vehicle trips using the proposed roadway infrastructure elements would be generated by the land uses developed on the SPA and associated mobile-source emissions are discussed in the analysis of on-site elements above.) Some of the roadway infrastructure improvements may actually reduce VMT by enabling more direct travel routes between area destinations. Also, it is not anticipated that the detention basin would generate a substantial number of vehicle trips other than the nominal amount of trips associated with routine maintenance of the facility. As a result, this **direct** impact would be **less than significant**. **No indirect** impacts would occur.

Mitigation Measure: No mitigation measures are required.

Implementation of all air pollutant reduction measures contained in the SMAQMD-approved *Folsom Plan Area Specific Plan Air Quality Mitigation Plan*, as required by Mitigation Measure 3A.2-2, would reduce ROG and NO_X emissions associated with operation of the project. However, for reasons described in more detail below, the exact reduction achieved by implementation of Mitigation Measure 3A.2-2 cannot be determined for the Proposed Project and the other four other action alternatives. While the AQMP was developed to achieve a 35% reduction in operational NO_X emissions from baseline levels, the baseline levels are not represented by the URBEMIS modeling output summarized in Tables 3A.2-6 through 3A.2-10 (above). For the purposes of developing an AQMP pursuant to SMAQMD's *Guidance for Land Use Emission Reductions* (SMAQMD 2007b) a baseline emissions level is presumed that is based on standard default trip generation rates established by the Institution of Transportation Engineers (ITE). The traffic modeling performed to support the analysis in Section 3A.15, "Traffic and Transportation – Land," and the associated modeling of operational emissions summarized in Tables 3A.2-6 through 3A.2-10 of this section, did not utilize standard ITE trip generation rates. Instead, the traffic analysis was based on a modified version of the 2008 SACMET regional travel demand forecasting model (Stankiewicz, pers. comm., 2009b). As explained in Section 3A.15, "Traffic and Transportation – Land," a traffic demand forecasting model is a tool that assigns trips generated by the various land uses to the surrounding roadway network based on the locations of trip attractions and productions. The traffic demand forecast model incorporates several types of data, including detailed land use; trip generation characteristics of specific land use types; mode choice propensity based upon user and trip characteristics; roadway, pedestrian, and transit networks; and census information. By incorporating more parameters that are unique to the region and the SPA, the model estimates more precise (and lower) estimates of VMT than using standard default ITE trip generation rates, which in turn results in more precise (and lower) estimates of operational air pollutant emissions. In other words, the traffic modeling already accounts for some of the unique attributes of the proposed land use plans (such as the proximity of residential and commercial land uses to activity centers and to transit service), for which an emissions reduction is also included in the AQMP. Therefore, one would overestimate the reduction achieved by the AQMP by reducing the levels of operational NO_X emissions reported in Tables 3A.2-6 through 3A.2-10 by 35%. The actual emission reduction benefit of the AQMP would be some amount less than 35%. Nonetheless, even if operational emissions of ROG and NO_X were 35% lower than the levels reported in Tables 3A.2-6 through 3A.2-10, they would still exceed SMAQMD's significance threshold of 65 lb/day. As a result, this impact would be **significant and unavoidable**.

IMPACT 3A.2-3 Generation of Local Mobile-Source CO Emissions. *Project-generated local mobile-source CO emissions would not result in or substantially contribute to concentrations that exceed the 1-hour ambient air quality standard of 20 ppm or the 8-hour standard of 9 ppm.*

On-Site and Off-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80. Vehicle trip generated by this amount of rural residences would not be expected to result in a substantial increase in congestion at any area intersections and thus would not result in high concentrations of localized CO. No off-site water facilities would be constructed under this alternative. Thus, this **direct** impact would be **less than significant**. **No indirect** impacts would occur. ***[Lesser]***

On-Site Elements

NCP, PP, RIM, CD, RHD

The primary mobile-source pollutant of localized concern is CO. Local mobile-source CO emissions near roadway intersections are a direct function of traffic volume, speed, and delay. Transport of CO is extremely

limited because it disperses rapidly with distance from the source under normal meteorological conditions. However, under certain specific meteorological conditions, CO concentrations near roadways and/or intersections may reach unhealthy levels with respect to local sensitive land uses, such as residential units, hospitals, schools, and childcare facilities. Thus, high local CO concentrations are considered to have a direct influence on the receptors they affect. Modeling of CO concentrations is typically recommended for areas located near signalized roadway intersections that are projected to operate at an unacceptable level of service (LOS) (i.e., LOS E or F) during peak traffic hours (Garza, Graney, and Sperling 1997).

Intersections controlled by stop signs do not experience high enough traffic volumes and associated congestion to be the site of violations of the AAQS; therefore, CO modeling is not recommended for unsignalized intersections (Garza, Graney, and Sperling 1997). Because the intersections controlled by stop signs would accommodate fewer vehicles than signalized intersections, it is reasonable to conclude that congestion at the intersections controlled by stop signs would not result in CO concentrations that exceed the AAQS.

SMAQMD recently released new screening criteria in its *Guide to Air Quality Assessment in Sacramento County* that provide lead agencies with a conservative indication of whether project-generated vehicle trips would result in the generation of CO emissions that exceed or contribute to an exceedance of the CAAQS for CO (SMAQMD 2009a). The screening criteria have been developed to help lead agencies analyze potential CO impacts and identify when site-specific CO dispersion modeling is not necessary. SMADQMD's recommended screening criteria are divided into the following two tiers.

First Tier

The project would result in a less-than-significant impact to air quality for local CO if:

- Traffic generated by the project would not result in deterioration of intersection level of service (LOS) to LOS E or F; or
- The project would not contribute additional traffic to an intersection that already operates at LOS of E or F.

Second Tier

If all of the following criteria are met, the project would result in a less-than-significant impact to air quality for local CO.

- The project would not result in an affected intersection experiencing more than 31,600 vehicles per hour;
- The project would not contribute traffic to a tunnel, parking garage, bridge underpass, urban street canyon, or below-grade roadway; or other locations where horizontal or vertical mixing of air would be substantially limited; and
- The mix of vehicle types at the intersection is not anticipated to be substantially different from the County average (as identified by the EMFAC or URBEMIS models).

Based on the traffic analysis prepared for the Proposed Project and the other four action alternatives (Tables 3A.15-16 through 3A.15-24), some signalized intersections in the vicinity of the SPA are predicted to operate at an unacceptable LOS under build out conditions (DKS Associates 2009). However, because none of the intersections would be anticipated to accommodate volumes of traffic that would exceed 31,600 vehicles per hour (Stankiewicz, pers. comm., 2009b), all affected roadways would be at-grade, and the mix of vehicles traveling on these roadways is not anticipated to be substantially different from the County average, the project would not result in concentrations of CO that would exceed or contribute to an exceedance of the CAAQS. Furthermore, due to stricter vehicle emissions standards in newer cars, new technology, and increased fuel economy, future CO emission factors under future build out conditions (year 2030) would be substantially lower than those under

existing conditions. Thus, even though there would be more vehicle trips under the Proposed Project and the other four action alternatives at build out than under existing conditions, project-generated local mobile-source CO emissions would not result in or substantially contribute to concentrations that exceed the 1-hour ambient air quality standard of 20 ppm or the 8-hour standard of 9 ppm. As a result, this **direct** impact would be **less than significant**. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measures: No mitigation measures are required.

Off-Site Elements

The off-site elements would not involve construction of new housing or development of new businesses that would generate vehicle trips or associated emissions of CO. Therefore, the off-site elements would not result in CO emissions that would exceed or substantially contribute to concentrations that exceed the 1-hour ambient air quality standard of 20 ppm or the 8-hour standard of 9 ppm. This **direct** impact would be **less than significant**. **No indirect** impacts would occur.

Mitigation Measures: No mitigation measures are required.

IMPACT 3A.2-4 Exposure of Sensitive Receptors to Short- and Long-Term Emissions of Toxic Air Contaminants. *Project implementation would result in exposure of receptors to short- and long-term emissions of TACs from on-site stationary and mobile sources and from off-site mobile sources.*

On-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80. Construction of these residences would not be anticipated to require a high number of diesel-powered construction equipment or occur in close proximity to sensitive receptors for an extended period of time. In addition, no stationary sources of TACs would be developed on the site and no land uses would be developed that would harbor activity by area sources of TACs (e.g., loading dock activity by diesel trucks). There would be no off-site water facilities constructed under this alternative. Thus, **no direct** or **indirect** impacts would occur. ***[Lesser]***

NCP, RIM

Under the No USACE Permit and Resource Impact Minimization Alternatives, the TAC impacts associated with the temporary and short-term emissions from construction equipment, stationary-source emissions, emissions from on-site operational mobile sources, TAC exposure from remediation activity, exposure of on-site receptors to diesel PM generated at the off-site corporation yard, and land use compatibility with U.S. 50 would be the same as for the Proposed Project Alternative. However, the analysis of the project's land use compatibility with high-volume arterial roadways would be different, as described in detail in Section 4.1, "Cumulative Impacts".

No indirect impacts would occur. ***[Lesser for exposure of existing residents in El Dorado Hills to construction-generated emissions of TACs. Similar for all other TAC impacts.]***

Mitigation Measure 3A.2-4a: Develop and Implement a Plan to Reduce Exposure of Sensitive Receptors to Construction-Generated Toxic Air Contaminant Emissions.

The project applicant(s) for all project phases shall develop a plan to reduce the exposure of sensitive receptors to TACs generated by project construction activity associated with buildout of the selected

alternative. Each plan shall be developed by the project applicant(s) in consultation with SMAQMD. The plan shall be submitted to the City for review and approval before the approval of any grading plans.

The plan may include such measures as scheduling activities when the residences are the least likely to be occupied, requiring equipment to be shut off when not in use, and prohibiting heavy trucks from idling. Applicable measures shall be included in all project plans and specifications for all project phases.

The implementation and enforcement of all measures identified in each plan shall be funded by the project applicant(s) for the respective phase of development.

Implementation: The project applicant(s) of all project phases.

Timing: Before the approval of all grading plans by the City and throughout project construction, where applicable, for all project phases.

Enforcement: City of Folsom Community Development Department.

Mitigation Measure 3A.2-4b: Implement Measures to Reduce Exposure of Sensitive Receptors to Operational Emissions of Toxic Air Contaminants.

The following measures shall be implemented to reduce exposure of sensitive receptors to Toxic Air Contaminants.

- Proposed commercial and industrial land uses that have the potential to emit TACs or host TAC-generating activity (e.g., loading docks) shall be located away from existing and proposed on-site sensitive receptors such that they do not expose sensitive receptors to TAC emissions that exceed an incremental increase of 10 in 1 million for the cancer risk and/or a noncarcinogenic Hazard Index of 1.0.

- The multi-family residences planned across from the off-site corporation yard near the southwest corner of the SPA shall be set back as far as possible from the boundary of the corporation yard and/or relocated to another area.

- Where necessary to reduce exposure of sensitive receptors to an incremental increase of 10 in 1 million for the cancer risk and/or a noncarcinogenic Hazard Index of 1.0, proposed commercial and industrial land uses that would host diesel trucks shall incorporate idle reduction strategies that reduce the main propulsion engine idling time through alternative technologies such as, IdleAire, electrification of truck parking, and alternative energy sources for TRUs, to allow diesel engines to be completely turned off.

- Signs shall be posted in at all loading docks and truck loading areas which indicate that diesel-powered delivery trucks must be shut off when not in use for longer than 5 minutes on the premises in order to reduce idling emissions. This measure is consistent with the ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling, which was approved by the California Office of Administrative Law in January 2005.

- Implement the following additional guidelines, which are recommended in *ARB's Land Use Handbook: A Community Health Perspective* (ARB 2005) and are considered to be advisory and not regulatory:

    - Sensitive receptors, such as residential units and daycare centers, shall not be located in the same building as dry-cleaning operations that use perchloroethylene. Dry-cleaning operations that use

perchloroethylene shall not be located within 300 feet of any sensitive receptor. A setback of 500 feet shall be provided for operations with two or more machines.

- Large gasoline stations (defined as facilities with a throughput of 3.6 million gallons per year or greater) and sensitive land uses shall not be sited within 300 feet of each other. Small gasoline-dispensing facilities (less than 3.6 million gallons of throughput per year) and sensitive land uses shall not be sited within 50 feet of each other.

Implementation: The project applicant(s) of all project phases.

Timing: Before the approval of all grading plans by the SMAQMD and throughout project construction, where applicable, for all project phases.

Enforcement: City of Folsom Community Development Department.

PP

The exposure of sensitive receptors (e.g., proposed residential units, schools) to TAC emissions from construction activities and from existing and stationary, area, and mobile sources under the Proposed Project Alternative is discussed separately below.

Temporary, Short-Term Emissions from Construction Equipment

Construction of the Proposed Project Alternative would result in short-term emissions of diesel exhaust from on-site heavy-duty equipment. Emissions of particulate exhaust from diesel-fueled engines (diesel PM) were identified as a TAC by ARB in 1998. Construction of the project would result in the generation of diesel PM emissions from the use of off-road diesel equipment required for site grading and excavation, paving, and other construction activities. According to ARB, the potential cancer risk from the inhalation of diesel PM, which is discussed below, outweighs the potential noncancer health impacts (ARB 2003).

The dose to which the receptors are exposed (a function of concentration and duration of the exposure period) is the primary factor used to determine health risk (i.e., potential exposure to TAC emission levels that exceed applicable standards). According to the Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments, which determine the exposure of sensitive receptors to TAC emissions, should be based on a 70-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the project (Salinas, pers. comm., 2004). The use of mobilized equipment in each area of the SPA would be temporary. In addition, some new residents would occupy the site concurrently with on-site construction activities. Thus, diesel PM from construction activities could also expose on-site residents and schools to levels that exceed applicable standards as some phases of the development plan are built out while construction of other phases continues. Particularly, some residents may be exposed to diesel PM generated by construction activity in all directions (at varying times). Even with the dispersive properties of diesel PM (Zhu et al. 2002), construction activities could expose sensitive receptors to levels of health risk that exceed applicable standards. Therefore, this **direct** impact is considered **potentially significant**. **No indirect** impacts would occur.

Stationary-Source Emissions

No stationary sources of TAC emissions are located on or immediately adjacent to the SPA.

Long-term operation of industrial and commercial uses developed under the Proposed Project Alternative would likely include the installation of stationary sources of TACs, such as dry cleaning establishments, gasoline-dispensing facilities, diesel-fueled backup generators, medical incinerators, and/or restaurants using charbroilers. These and other types of stationary sources may also be developed at off-site locations near the SPA in future years. All stationary sources that may emit TACs would be subject to SMAQMD permitting regulations and T-

BACT requirements. Pursuant to SMAQMD Regulation 2 (Permit Requirements) and Rule 904 (Air Toxic Control Measures) SMAQMD would analyze such sources (e.g., in a health risk assessment) based on their potential to emit TACs. If it is determined that the sources would emit TACs in excess of SMAQMD's applicable threshold of significance, T-BACT would be implemented to reduce emissions. If the implementation of T-BACT would not reduce the risk below the applicable threshold, then SMAQMD would deny the required permit. Furthermore, no commercial or industrial land uses would be located along the eastern edge of the SPA, just across from the existing residential neighborhood (Stonebrier) in El Dorado Hills. As a result, operation of any stationary sources would not result in the exposure of sensitive receptors to TACs at levels exceeding SMAQMD's significance threshold. Therefore, this **direct** impact is considered **less than significant. No indirect** impact would occur.

Emissions from On-Site Operational Mobile Sources

The Proposed Project Alternative would include proposed residences, schools, and parks. Because of the sensitivity of such uses, assessment of compatibility of surrounding land uses with respect to sources of TAC emissions is required.

On-site mobile sources of TACs would primarily be associated with the operation of school buses transporting students to and from the proposed schools, as well as diesel-powered delivery trucks associated with proposed on-site commercial and industrial activities.

Emissions from school buses can vary, depending on various factors, including bus type, age, maintenance, and amount of time spent idling. Health impacts from exhaust exposure include eye and respiratory irritation, enhanced respiratory allergic reactions, asthma exacerbation, increased cancer risk, and immune system degradation. Generally, children are more vulnerable to air pollutants because of higher inhalation rates, narrower airways, and less mature immune systems.

In response to the above issue, the ARB adopted an ATCM as part of the Particulate Matter Risk Reduction Plan to specifically deal with diesel emissions from school buses. This ATCM became effective July 16, 2003. The school bus idling ATCM includes the following requirements:

(a) The driver of a school bus or vehicle, transit bus, or heavy-duty vehicle (other than a bus) shall manually turn off the bus or vehicle upon arriving at a school and restart no more than 30 seconds before departing. A driver of a school bus or vehicle shall be subject to the same requirement when operating within 100 feet of a school and shall be prohibited from idling more than 5 minutes at each stop beyond schools, such as parking or maintenance facilities, school bus stops, or school activity destinations. A driver of a transit bus or heavy-duty vehicle (other than a bus) shall be prohibited from idling more than 5 minutes at each stop within 100 feet of a school. Idling necessary for health, safety, or operational concerns shall be exempt from these restrictions.

(b) The motor carrier of the affected bus or vehicle shall ensure that drivers are informed of the idling requirements, track complaints and enforcement actions, and keep track of driver education and tracking activities.

According to ARB, implementation of the above requirements would eliminate unnecessary idling for school buses and other heavy-duty vehicles, protecting children from unhealthful exhaust emissions and thus reducing localized exposure to TACs and other harmful air pollution emissions at and near schools.

On-site operational mobile sources of TAC emissions would also be associated with the operation of diesel-powered delivery trucks at the loading docks and delivery areas of commercial and industrial land uses. Some sensitive land uses within the SPA would be located within 100 feet of commercial or industrial uses (e.g., community commercial, general commercial, regional commercial, industrial/office park, and mixed-use land use types). Operational activities that require the use of diesel-fueled vehicles for extended periods, such as commercial trucking facilities, delivery/distribution areas, or loading docks, could expose nearby sensitive

receptors to diesel PM emissions. The diesel PM emissions generated by these uses would be produced primarily at discrete locations on a regular basis. Idling trucks at these locations, including TRUs, could result in the exposure of nearby residents to increased diesel PM levels on a reoccurring basis.

As referenced above, the ARB's *Handbook* recommends avoiding the siting of new commercial trucking facilities that accommodate more than 100 trucks per day, or 40 trucks equipped with transportation refrigeration units (TRUs), within 1,000 feet of sensitive receptors (e.g., residences or schools) (ARB 2005). The number of trucks that would visit the facilities on any given day is not known at this time; however, based on data from similar projects, the types of commercial uses proposed for the SPA would not involve large-scale trucking operations. For the purposes of the Proposed Project Alternative, it is not anticipated that the combination of industrial land uses proposed in the SPA would exceed these screening limits.

In addition to the school bus idling ATCM, ARB also adopted an idling restriction ATCM for large commercial diesel-powered vehicles, which became effective February 1, 2005. In accordance with this measure, affected vehicles are required to limit idling to no longer than 5 minutes under most circumstances. ARB is also evaluating additional ATCMs intended to further reduce TACs associated with commercial operations, including a similar requirement to limit idling of smaller diesel-powered commercial vehicles.

Nonetheless, given that proposed on-site commercial and industrial land uses have not yet been identified and could potentially involve substantial volumes of truck activity occurring in close proximity to nearby sensitive receptors, exposure of nearby on-site receptors to mobile-source TACs associated with commercial and industrial activities is considered a **direct** and **potentially significant** impact. **No indirect** impact would occur.

Further, as stated previously, the ARB guidance document is not regulatory, and the SMAQMD has not established any guidelines for the assessment of such impacts or any applicable thresholds for these types of emissions.

TAC Exposure from Remediation Activity

Remediation activity is currently underway on the Aerojet General Corporation parcel along the western property boundary, which has been classified as a Superfund site (see Section 3A.8 "Hazards and Hazardous Materials – Land," for additional information). Area 40 refers to a portion of the Superfund site that is located just west of the SPA and extends into an area on the SPA that would be designated as Open Space. A report prepared by ARCADIS (2007) entitled *Draft Ambient Air Evaluation of Aerojet Area 40* examines potential health risks to future adult and child recreators on this open space associated with VOCs potentially migrating from ground water into the ambient air. The report analyzes groundwater analytical data for the VOC plume located in the northern portion of Area 40. The primary chemicals of potential concern in the VOC plume include trichloroethene (TCE) and tetrachloroethene (PCE). Exposure and risk to adult and child recreators were estimated using standard EPA and California risk assessment practices. The analysis determined that the hazard indices (a.k.a., hazard quotients) used for determining levels of non-cancer risk would be 0.010 and 0.000025 from TCE and PCE exposure, respectively. It also determined that cancer risk levels would be 0.8 in one million from TCE exposure and 0.01 in one million from PCE exposure. Because all of the estimated risk levels would be below the SMAQMD's recommended thresholds of significance for health risk, airborne exposure of recreators on the SPA to off-gassing VOC emissions from the contaminated groundwater plume would be considered a **direct**, **less-than-significant** impact. **No indirect** impact would occur.

Land Use Compatibility with Off-Site Corporation Yard

The City plans to develop a new corporation yard south of White Rock Road near the southwestern corner of the SPA. The corporation yard would be used to stage, store, and maintain equipment used by the City, including diesel-powered trucks and heavy-duty equipment (e.g., mowers). The location of on-site receptors, particularly residences within the SPA that would be zoned for multi-family medium density development near the southwestern corner of the SPA could be exposed to diesel PM emissions generated at the corporation yard.

Moreover, because the predominant wind direction in the area and from the south-southwest at approximately 10 mph (ARB 1994), these receptors would located downwind of the corporation yard. The types of equipment that would be operated at the corporation yard and the frequency and intensity of their operation have not yet been identified. Given that activities at the corporation yard could potentially generate substantial levels of diesel PM exhaust, as well as the close proximity of nearby sensitive receptors, the potential for these on-site receptors to be exposed to high concentration of diesel PM emissions from the corporation yard is a **direct** and **potentially significant** impact. **No indirect** impact would occur.

Land Use Compatibility with U.S. 50

The Proposed Project Alternative would involve development of lands on the south side of U.S. 50, which accommodates high volumes of traffic and associated mobile-source TAC emissions. As explained in the regulatory setting above, ARB published a guidance document entitled *Air Quality and Land Use Handbook: A Community Health Perspective* that includes the recommendation to avoid siting new sensitive land uses (e.g., residences, schools) within 500 feet of freeways. In addition, SB 352 (Education Code Section 17213, Public Resources Code Section 21151.8) expands on previous requirements for the review of TAC sources near school sites. Accordingly, SB 352 requires that any school site located within 500 feet of the edge of the closest travel lane of a freeway or other busy traffic corridor be reviewed for potential health risks. No residential land uses, schools, or other sensitive land uses would be developed within 500 feet of U.S. 50. Therefore, the impact associated with off-site mobile-source TAC emissions at the SPA would be **direct** and **less than significant**. **No indirect** impact would occur. ***[Similar]***

See Section 4.1, "Cumulative Impacts" for a detailed discussion of impacts on Land Use Compatibility with High-Volume Arterial Roadways. This impact analysis is contained in the Cumulative Impacts chapter due to the fact that the condition under which analysis was performed is cumulative in nature (i.e., the result of past, present, and future projects).

Mitigation Measure: Implement Mitigation Measures 3A.24a-4b.

CD

Under the Centralized Development Alternative, the analysis of the TAC impacts associated with the stationary-source emissions, emissions from on-site operational mobile sources, TAC exposure from remediation activity, exposure of on-site receptors to diesel PM generated at the off-site corporation yard, the project's land use compatibility with U.S. 50 would be the same as for the Proposed Project Alternative.

The analysis of short-term TAC emissions from construction equipment would be different, however, in that the existing receptors in the Stonebrier development in El Dorado Hills east of the SPA would not likely be exposed to high levels of health risk because intense levels of grading and earth disturbance would not occur in the hills on the east side of the SPA, as indicated by the land use plan in Exhibit 2-15 (see Chapter 2, "Alternatives"). Nonetheless, as with the Proposed Project Alternative, diesel PM from construction activities could expose on-site residents and schools to levels that exceed applicable standards as some phases of the development plan are built out while construction of other phases continues. Particularly, some residents may be exposed to diesel PM generated by construction activity in all directions (at varying times). Even with the dispersive properties of diesel PM (Zhu et al. 2002), construction activities could expose sensitive receptors to levels of health risk that exceed applicable standards. Therefore, this **direct** impact is considered **potentially significant**. **No indirect impacts** would occur.

In addition, the analysis of the project's land use compatibility with high-volume arterial roadways would be different, as described in detail in Section 4.1 "Cumulative Impacts".

No indirect impacts would occur under the Resource Impact Minimization Alternative. ***[Lesser for exposure of existing residents in El Dorado Hills to construction-generated emissions of TACs. Similar for all other TAC impacts.]***

Mitigation Measure: Implement Mitigation Measures 3A.2-4a-4b.

RHD

Under the Reduced Hillside Development Alternative, the TAC impacts associated with the short-term emissions from construction equipment, stationary-source emissions, emissions from on-site operational mobile sources, TAC exposure from remediation activity, exposure of on-site receptors to diesel PM generated at the off-site corporation yard, and land use compatibility with U.S. 50 would be the same as for the Proposed Project Alternative. However, the analysis of the project's land use compatibility with high-volume arterial roadways would be different, as described in detail in Section 4.1 "Cumulative Impacts".

No indirect impacts would occur under the Reduced Hillside Development Alternative. ***[Lesser for exposure of residential receptors that would be located along the east side of Scott Road North between Easton Valley Parkway and Road "A." Similar for all other TAC impacts.]***

Mitigation Measure: Implement Mitigation Measures 3A.2-4a-4b.

Off-Site Elements

The exposure of sensitive receptors (e.g., residential units, schools) to TAC emissions associated with construction and operation of the proposed off-site elements are discussed separately below.

Temporary, Short-Term Emissions from Construction Equipment

Construction of the off-site elements would result in short-term emissions of diesel PM from on-site heavy-duty equipment. Most of the activity associated with construction of the freeway interchange at Prairie City Road would be on the south side of U.S. 50 and, therefore, more than 1,000 feet from the nearest sensitive receptor, Folsom High School, which is on the north side of U.S. 50. The sewer force main, the freeway interchange at Oak Avenue, and the Rowberry Drive Overcrossing would be constructed on the north side of U.S. 50 and this activity would occur relatively close to the residential neighborhoods north of Iron Point Road. Construction of the two roadway connections into El Dorado Hills would also occur in close proximity to existing neighborhoods in El Dorado County. Even with the dispersive properties of diesel PM (Zhu et al. 2002), short-term construction activities could expose sensitive receptors to levels that exceed applicable standards because of its close proximity to nearby Folsom High School and existing nearby residential land uses. Therefore, this **direct** impact is considered **potentially significant**. **No indirect** impacts would occur.

Mitigation Measure: Implement Mitigation Measures 3A.2-1a and 3A.2-1b for the off-site improvements in Sacramento County; and Mitigation Measure 3A.2-1f for the off-site improvements in El Dorado County.

Operational TAC Emissions

The off-site element would not host sources of TAC emissions (e.g., backup diesel generators) or attract sources of TAC emissions (e.g., diesel trucks). Therefore, operation of these off-site facilities would not result in elevated risk levels at nearby receptors. This **direct** impact would be **less than significant**. **No indirect** impacts would occur.

Mitigation Measure: No mitigation measures are required.

Implementation of Mitigation Measure 3A.2-4a would lessen health-related risks associated with the use of off-road diesel powered equipment during construction activity under all action alternatives. However, given that construction activity would occur on the SPA during the 19-year buildout of the project, exposure to construction-generated TAC emissions would not necessarily be reduced to less-than-significant levels. Therefore, the potential exposure of receptors to construction-generated TAC emissions is considered to be **significant and unavoidable**.

Implementation of Mitigation Measure 3A.2-4b would lessen health-related risks associated with mobile-source TACs under the Proposed Project Alternative and the other four action alternatives; however, TAC exposure levels at sensitive receptors located within 500 feet of a freeway or high-traffic volume roadway would not necessarily be reduced to less-than-significant levels. Exposure of receptors to mobile-source TAC emissions therefore is considered to be **significant and unavoidable**.

Implementation of Mitigation Measure 3A.2-1a, 3A.2-1b, and 3A.2-1f would lessen health-related risks associated with the use of off-road diesel powered equipment during construction activity in El Dorado County. However, given that construction activity would occur on the SPA during the 19-year buildout of the project, exposure to construction-generated TAC emissions would not necessarily be reduced to less-than-significant levels. Therefore, the potential exposure of receptors to construction-generated TAC emissions is considered to be **significant and unavoidable**.

Similarly, increasing the set back distance between on-site residents and the off-site, future planned corporation yard would not necessarily reduce the levels of TAC exposure at these residents to a less-than-significant level. Therefore, the potential exposure of on-site residents to TAC emissions from the corporation yard would be considered **significant and unavoidable**.

Additionally, some of the off-site elements fall under the jurisdiction of El Dorado and Sacramento Counties and/or Caltrans; therefore, neither the City nor the project applicant(s) would have control over their timing or implementation. Therefore, the impacts related to those off-site facilities are considered potentially significant and unavoidable.

These conclusions have been reached due to the uncertainty about the potential TAC emissions sources associated with on-site commercial and industrial land use activities and the proximity of sensitive receptors to such uses. In addition, there is also uncertainty about the feasibility and effectiveness of extending the setback distances between roadways and receptors and the effectiveness and feasibility of tiered planting of fine-needle tree species. Therefore, this conclusion may change as more detailed information regarding proposed on-site commercial uses becomes available and analyses of individual phases are performed at the project level as part of future CEQA documents prior to approval of subdivision maps or improvement plans.

IMPACT 3A.2-5 Exposure of Sensitive Receptors to Construction-Generated Emissions of Naturally Occurring Asbestos. *Asbestos is a toxic air contaminant. Residents and other receptors located close to construction activity could be exposed to dust from asbestos rock and soils during earth disturbance activities.*

On-Site and Off-Site Elements

NP

Under the No Project Alternative, "normal agricultural activities" would continue on the SPA; based on the soil types at the SPA, those activities would consist of dryland farming (i.e., livestock grazing) and, therefore, would not involve substantial amounts of grading or other types of ground disturbance. There would be no off-site water facilities constructed under this alternative. Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80. If

additional residences are built in areas that have the potential to contain NOA, however, it is not anticipated that construction of these residences would involve an extensive amount of earth disturbance or rock blasting and it is unlikely that construction activity would occur in close proximity to other sensitive receptors. Thus, it is not anticipated that sensitive receptors would be exposed to airborne asbestos generated during construction or operational activity. This **direct** impact would be **less than significant**. **No indirect** impacts would occur. ***[Lesser]***

On-Site Elements

NCP, PP, RIM, RHD

Grading, blasting, and other forms of ground disturbance during construction would result in fugitive PM_{10} dust emissions. As stated in the setting above, some areas of the SPA may contain serpentine or ultramafic rock that is common to the Sierra Nevada foothills. These types of rock contain thin veins of asbestos that can become airborne when disturbed by grading or blasting. According to a report prepared by the California Geological Survey, more than half of the SPA is located in "areas moderately likely to contain NOA" (Higgins and Clinkenbeard 2006). Although geologic conditions are more likely for asbestos formation in particular areas identified by the map, the presence thereof is not certain.

Detailed construction plans for the project have not been developed. During site grading and rock blasting activities, the serpentine soils may be disturbed, potentially exposing residents of the nearby residential neighborhoods in El Dorado County to asbestos during project construction. Also, the site would be developed in phases, so construction activity would be spread out over many years. Construction activities for later phases could adversely affect residential land uses and other receptors that have already been developed in earlier phases of development. Without appropriate controls, sensitive receptors near construction sites could be exposed to localized high levels of re-entrained fugitive PM_{10} dust, potentially including NOA. As a result, this **direct** impact would be considered **potentially significant**. **No indirect** impacts would occur. ***[Similar]***

> Mitigation Measure 3A.2-5: Implement a Site Investigation to Determine the Presence of NOA and, if necessary, Prepare and Implement an Asbestos Dust Control Plan.
>
> A site investigation shall be performed to determine whether and where NOA is present in the soil and rock on the SPA. The site investigation shall include the collection of soil and rock samples by a qualified geologist. If the site investigation determines that NOA is present on the SPA then the project applicant shall prepare an Asbestos Dust Control Plan for approval by SMAQMD as required in Section 93105 of the California Health and Safety Code, "Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations." The Asbestos Dust Control Plan shall specify measures, such as periodic watering to reduce airborne dust and ceasing construction during high winds, that shall be taken to ensure that no visible dust crosses the property line. Measures in the Asbestos Dust Control Plan may include but shall not be limited to dust control measures required by Mitigation Measure 3A.2-1a. The project applicant shall submit the plan to the Folsom Community Development Department for review and SMAQMD for review and approval before construction of the first project phase. SMAQMD approval of the plan must be received before any asbestos-containing rock (serpentinite) can be disturbed. Upon approval of the Asbestos Dust Control Plan by SMAQMD, the applicant shall ensure that construction contractors implement the terms of the plan throughout the construction period.
>
> **Implementation:** The project applicant(s) of all project phases.
>
> **Timing:** Before the approval of all grading plans by the City and throughout project construction, where applicable, for all project phases.

Enforcement: City of Folsom Community Development Department.

CD

Under the Centralized Development Alternative, the analysis of NOA impacts would be the same as under the Proposed Project Alternative except that existing receptors in the El Dorado Hills neighborhood east of the SPA would not likely be exposed to high levels of health risk because substantial grading, blasting, and other earth disturbance would not occur in the hills on the east side of the SPA, as indicated by the land use plan in Exhibit 2-15 (see Chapter 2, "Alternatives"). Nonetheless, as with the Proposed Project Alternative, NOA that becomes airborne during construction activities for later phases of development could adversely affect residential land uses and other receptors that have already been developed in earlier phases of development. Without appropriate controls, sensitive receptors near construction sites could be exposed to localized high levels of re-entrained fugitive PM_{10} dust, potentially including NOA. As a result, this **direct** impact would be considered **potentially significant**. **No indirect** impacts would occur. ***[Lesser for exposure of existing residents in El Dorado Hills to construction-generated emissions of NOA. Similar for all other TAC impacts.]***

Mitigation Measure: Implement Mitigation Measure 3A.2-5.

Off-Site Elements

Construction of some of the off-site elements would occur in "areas moderately likely to contain NOA" according to a report prepared by the California Geological Survey about NOA areas in eastern Sacramento County (Higgins and Clinkenbeard 2006), including the Oak Avenue interchange and the Rowberry Drive Overcrossing. The Prairie City road interchange, sewer force main, and off-site detention basin would not be located in "areas moderately likely to contain NOA." The proposed road extensions into El Dorado County would be located in "areas that probably do not contain asbestos," according to a report prepared by the California Geological Survey about NOA areas in western El Dorado County (Churchill, Higgins, and Hill 2000).

As with construction of the on-site elements, sensitive receptors near construction sites in "areas moderately likely to contain NOA" could be exposed to localized high levels of re-entrained fugitive PM_{10} dust, potentially including NOA, without appropriate controls. As a result, this **direct** impact would be considered **potentially significant**. **No indirect** impacts would occur.

Mitigation Measure: Implement Mitigation Measure 3A.2-5. (However, for construction of the two roadway extensions into El Dorado County that occurs in El Dorado County, approval of the grading plans must be received from EDCAQMD.)

Implementation of Mitigation Measure 3A.2-5 would reduce impacts associated with generation of fugitive dust that potentially contains NOA. If the site investigation determines that NOA is present on the SPA, then implementation of a dust control plan that is approved by the applicable air district (i.e., SMAQMD or EDCAQMD) would reduce impacts related to construction in serpentinite soils. Implementation of these measures would reduce the potentially significant impact associated with exposure to NOA during construction to a **less-than-significant** level.

IMPACT 3A.2-6 Possible Exposure of Sensitive Receptors to Odorous Emissions. *Temporary, short-term construction and long-term operation of the project could result in the frequent exposure of sensitive receptors to substantial objectionable odor emissions.*

On-Site and Off-Site Elements

NP

Under the No Project Alternative, existing land uses at the SPA would continue, including up to 44 rural residences permitted under the existing Sacramento County General Plan AG-80 designation and zoning. Residential land uses are not typically regarded as sources of objectionable odors. Occasional operation of off-road agricultural equipment could result in diesel exhaust with odorous emissions; however, such activities would be short-term and intermittent and would not involve a substantial number of equipment operating at one time. There would be no off-site water facilities constructed under this alternative. Because the SPA would continue with dryland farming activities under the No Project Alternative and no new sources of odor emissions would be encountered, **no direct** or **indirect** impacts would occur. ***[Lesser]***

On-Site Elements

NCP, PP, RIM, CD, RHD

The exposure of sensitive receptors (e.g., existing and proposed residential units, schools, and parks) to odorous emissions from construction and operation of the project is discussed under separate headings below.

Short-Term Use of Construction Equipment for On-Site Land Uses and Off-Site Elements

Project construction activities associated with the development of on-site land uses could result in odorous emissions from diesel exhaust generated by construction equipment. During some periods of the 19-year buildout of the project intense levels of construction activity could potentially occur in close proximity to existing or future-planned sensitive receptors or construction activity could potentially occur near sensitive receptors for an extended period of time. In particular, a substantial number of people in the existing residential neighborhood that located just east of the SPA in El Dorado Hills could be exposed to odorous diesel exhaust emissions generated by on-site construction activity. The potential for this to occur would be particularly high under the No USACE Permit, Proposed Project, Resource Impact Minimization Alternative, Centralized Development, and Reduced Hillside Development Alternative because the level of grading in the hilly, eastern end of the SPA would involve a substantial number of construction equipment operating at heavy loads. Because this activity could result in objectionable odors that affect a substantial number of people, this would be considered a **direct, significant** impact.

Long-Term Operation of On-Site Land Uses

No common sources of nuisance odors, such as wastewater treatment facilities, waste-disposal facilities, or agricultural operations, are proposed as part of the project. While there would be approximately 3–4 wastewater pumping stations located on the SPA, these facilities would have controls that would prevent the release of objectionable odors. In addition, the detention basins that would be located throughout the site would not typically hold storm water long enough for odor-generating anaerobic activity to occur. With regular maintenance and proper design, residential land uses are typically not considered a major source of odors. However, truck deliveries to commercial uses and sewer lift stations could intermittently and temporarily emit diesel odors. Additionally, commercial uses could provide development of convenience uses that may include sources of odorous emissions (e.g., fast-food restaurants) that would be perceived as offensive to some individuals. The operation of such sources could expose a substantial number of proposed on-site receptors to objectionable odorous emissions. As a result, this **direct** impact would be considered **potentially significant**. **No indirect** impacts would occur. ***[Similar]***

Land Use Compatibility with Off-Site Corporation Yard

The City plans to develop a corporation yard south of White Rock Road near the southwestern corner of the SPA. The corporation yard would be used to stage, store, and maintain equipment used by the City, including diesel-powered trucks and heavy-duty equipment (e.g., mowers). The location of on-site receptors, in particular residences within the SPA that would be zoned for multi-family medium density development near the southwestern corner of the SPA could be exposed to odorous exhaust emissions generated by equipment at the corporation yard. Moreover, because the predominant wind direction in the area and from the south-southwest at approximately 10 mph (ARB 1994), these receptors would located downwind of the corporation yard. The types of equipment that would be operated at the corporation yard and the frequency and intensity of their operation have not yet been identified. Given that equipment at the corporation yard could potentially generate substantial levels of diesel exhaust, as well as the close proximity of nearby sensitive receptors, the potential for these on-site receptors to be frequently exposed high levels of odorous exhaust emissions from the corporation yard is a **direct** and **potentially significant** impact. **No indirect** impact would occur.

Land Use Compatibility with Off-Site Agricultural Land Uses

Land uses developed on the southern side of the SPA could be exposed to odors generated by neighboring agricultural land uses, which are used for livestock grazing. This could occur when some portions of the site are developed and occupied while others portions continue to be used for livestock grazing. Also, receptors developed along the southern portion of the SPA could be exposed to odors generated by agricultural activities that take place just south of White Rock Road. SMAQMD does not have a recommended screening distance for livestock grazing. SMAQMD recommends a screening distance of 1 mile for most odor-generating land uses, including feed lots and dairies (SMAQMD 2009a). Because the project could result in the development of receptors located in close proximity to land in the immediate vicinity that support livestock grazing, this would be a **direct** and **potentially significant** impact. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure: Implement Mitigation Measure 3A.2-1a and Mitigation Measure 3A.2-1f to Control Exposure of Sensitive Receptors to Construction-Related Odorous Emissions.

Mitigation Measure 3A.2-6: Implement Measures to Control Exposure of Sensitive Receptors to Operational Odorous Emissions.

The project applicant(s) for all project phases shall implement the following measures:

- The odor-producing potential of land uses shall be considered when the exact type of facility that would occupy areas zoned for commercial, industrial, or mixed-use land uses is determined. Facilities that have the potential to emit objectionable odors shall be located as far away as feasible from existing and proposed sensitive receptors.

- The multi-family residences planned across from the off-site corporation yard near the southwest corner of the SPA shall be set back as far as possible from the boundary of the corporation yard and/or relocated to another area. (This measure is also required by Mitigation Measure 3A.2-4b to limit exposure to TAC emissions.)

- Before the approval of building permits, odor control devices shall be identified to mitigate the exposure of receptors to objectionable odors if a potential odor-producing source is to occupy an area zoned for commercial, industrial, or mixed-use land uses. The identified odor control devices shall be installed before the issuance of certificates of occupancy for the potentially odor-producing use. The odor-producing potential of a source and control devices shall be determined in coordination with SMAQMD and based on the number of complaints associated with existing sources of the same nature.

- The deeds to all properties located within the SPA that are within one mile of an on- or off-site area zoned or used for agricultural use (including livestock grazing) shall be accompanied by a written disclosure from the transferor, in a form approved by the City of Folsom, advising any transferee of the potential adverse odor impacts from surrounding agricultural operations, which disclosure shall direct the transferee to contact the County of Sacramento concerning any such property within the County zoned for agricultural uses within one mile of the subject property being transferred.

- Truck loading docks and delivery areas shall be located as far away as feasible from existing and proposed sensitive receptors.

- Signs shall be posted at all loading docks and truck loading areas which indicate that diesel-powered delivery trucks must be shut off when not in use for longer than 5 minutes on the premises in order to reduce idling emissions. This measure is consistent with the ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling, which was approved by California's Office of Administrative Law in January 2005. (This measure is also required by Mitigation Measure 3A.2-4b to limit TAC emissions.)

- Proposed commercial and industrial land uses that have the potential to host diesel trucks shall incorporate idle reduction strategies that reduce the main propulsion engine idling time through alternative technologies such as, IdleAire, electrification of truck parking, and alternative energy sources for TRUs, to allow diesel engines to be completely turned off. (This measure is also required by Mitigation Measure 3A.2-4b to limit TAC emissions.)

Implementation: The project applicant(s) of all project phases.

Timing: Before the approval of building permits by the City and throughout project construction, where applicable, for all project phases.

Enforcement: City of Folsom Community Development Department.

Off-Site Elements

Construction activities associated with the building of the off-site elements could result in odorous emissions from diesel exhaust generated by construction equipment. However, because of the temporary nature of these emissions and the highly diffusive properties of diesel exhaust, residents and other receptors on and off the SPA would not likely be affected by diesel exhaust odors associated with construction. Operation of the off-site elements would not be considered sources of odors. Motor vehicles using the improved freeway interchanges and overcrossing would not result in a noticeable increase in odorous emissions. Similar to the on-site storm water detention basins discussed above, the off-site detention basin that would be located just west of the SPA would not typically hold storm water long enough for odor-generating anaerobic activity to occur. Further, no odors would be associated with the wastewater force main that would connect to the existing sewer pump station because it would be enclosed. As a result, the **direct** impact associated with construction and operation of the off-site elements would be considered **less than significant**. **No indirect** impacts would occur.

Mitigation Measure: No mitigation measures are required.

Implementation of Mitigation Measure 3A.2-1a and Mitigation Measure 3A.2-1f would reduce the mass levels of odorous diesel exhaust during construction of the on-site elements. However, given that construction activity would occur on the SPA during the 19-year buildout of the project, generation of construction-generated diesel exhaust, particularly during periods of intense grading on the eastern, hilly side of the SPA, could expose a substantial number of people to odorous emissions and, therefore, this impact would not be reduced to a less-than-significant level. Therefore, the potential exposure of a substantial number of people to these objectionable odors is considered to be **significant and unavoidable**.

By requiring odor control devices on potential odor-producing sources and by requiring consideration of the odor-producing potential of on-site land uses and their proximity to receptors, implementation of Mitigation Measure 3A.2-6 would reduce the possible exposure of sensitive receptors to odorous emissions associated with operation of on-site land uses to a **less-than-significant** level.

Increasing the set back distance between on-site residents and the off-site, future planned corporation yard would not necessarily reduce the intensity or frequency of these residents' exposure to odorous exhaust emissions generated at the corporation yard to a less-than-significant level. Therefore, the potential exposure of on-site residents to odorous exhaust emissions from the corporation yard would be considered **significant and unavoidable**.

3A.2.4 RESIDUAL SIGNIFICANT IMPACTS

Implementation of mitigation measures contained in this section would reduce impacts associated with temporary, short-term construction-related emissions of criteria air pollutants and precursors; long-term operation-related (regional) emissions of criteria air pollutants and precursors; exposure to TACs; and exposure to odorous emissions from construction activity; and exposure to odorous emissions from operation of the proposed corporation yard, but not to a less-than-significant level, because emissions and exposure levels would (or could potentially) still exceed applicable thresholds and, therefore, residual significant impacts would occur. All other air quality impacts would be less than significant.

Additionally, some of the off-site elements fall under the jurisdiction of El Dorado and Sacramento Counties and/or Caltrans; therefore, neither the City nor AECOM the project applicant(s) would have control over their timing or implementation. Therefore, the impacts related to those off-site facilities that are under the jurisdiction of El Dorado County, Sacramento County, or Caltrans, are considered potentially significant and unavoidable.

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This section was prepared by RMC Water and Environment.

3B.2 AIR QUALITY – WATER

3B.2.1 AFFECTED ENVIRONMENT

The "Water" Study Area lies within the Sacramento Valley Air Basin (SVAB). The climate of the SVAB is Mediterranean in character, with mild, rainy winter weather from November through March and warm to hot, dry weather from May through September. The topographic features giving shape to the Air Basin are the Coast Range to the west, the Sierra Nevada to the east, and the Cascade Range to the north. These mountain ranges channel winds through the Air Basin but also inhibit dispersion of pollutant emissions.

The Sacramento Valley is subject to eight unique wind patterns, which are described in more detail in Section 3A.2, "Air Quality – Land," and the Sacramento Metropolitan Air quality Management District's (SMAQMD) State CEQA Guidelines, 2004. The seasonal vertical and horizontal movement of air is an important atmospheric component involved in the dispersion and subsequent dilution of air pollutants. Without movement, air pollutants can collect and concentrate in a single area, increasing associated health hazards. For instance, in the winter months, the SVAB typically experiences calm atmospheric conditions that lead to the formation of fog. These calm conditions result in stagnation of basin air and increased air pollution. As a result, persistent inversions occur frequently in the SVAB, especially during late fall and early spring and act to restrict vertical dispersion of pollutants released near ground level.

CRITERIA AIR POLLUTANTS

From a regulatory standpoint, the air pollutants of most concern within the "Water" Study Area are ozone, nitrogen oxide (NO_X), carbon monoxide (CO), reactive organic gasses (ROG), and particulate matter (PM).

As described in more detail in Section 3A.2, "Air Quality – Land," the regulation of air pollutants is achieved through both national and state ambient air quality standards and emission limits for individual sources of air pollutants. As required by the Federal Clean Air Act (CAA), the EPA has identified criteria pollutants and established National Ambient Air Quality Standards (NAAQS or national standards) to protect public health and welfare. NAAQS have been established for ozone, CO, nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter equal to or less than 10 microns (PM_{10}), particulate matter less than 2.5 microns ($PM_{2.5}$), and lead (Pb). PM_{10} is also known as respirable particulate and $PM_{2.5}$ is also known as fine particulate. These pollutants are called "criteria" air pollutants because standards have been established for each of them to meet specific public health and welfare criteria.

The NAAQS are defined as the maximum acceptable concentration that may be reached, but not exceeded more than once per year. California has adopted more stringent ambient air quality standards for most of the criteria air pollutants with the California Ambient Air Quality Standards (CAAQS or state standards). Table 3.A2-1 provides a summary of the NAASQ and CAAQS standards.

TOXIC AIR CONTAMINANTS

Toxic Air Contaminants (TACs) are pollutants that are associated with acute, chronic, or carcinogenic effects but for which no ambient air quality standard has been established or, in the case of carcinogens, is appropriate. As provided in Section 3A.2, "Air Quality – Land," PM_{10} emissions from diesel fueled engines are some of the greatest TACs of concern.

ODORS AND NUISANCES

Though offensive odors from stationary sources rarely cause any physical harm, they still remain unpleasant and can lead to public distress generating citizen complaints to local governments. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receptors. The operation of water conveyance and treatment facilities are not known to be significant sources of objectionable odors.

NATURALLY OCCURRING ASBESTOS

Airborne asbestos presents an inhalation hazard because the fibers can enter the lungs and in some cases result in lung cancer, asbestosis and mesothelioma. Levels and types of asbestos minerals vary with the rock and with location: some serpentinite may not contain harmful asbestos while others may contain a high percentage. Asbestos fibers are potentially harmful when they are airborne, therefore, asbestos sources that are friable and pulverized are considered more of a health risk than solid, non-friable sources.

Naturally occurring asbestos has been identified in proximity to the Bear Mountain Fault Zone within eastern Sacramento County (Wagner et al. 1981; Churchill et al. 2000). Based on a review of maps produced by the California Geological Survey, the "Water" Study Area does not overlap with any geologic formations known to contain naturally occurring asbestos.

SENSITIVE RECEPTORS

Some receptors are considered more sensitive than others to air pollutants. The reasons for greater than average sensitivity include preexisting health problems, proximity to emissions source, or duration of exposure to air pollutants. Schools, hospitals and convalescent homes are considered to be relatively sensitive to poor air quality because children, elderly people and the infirm are more susceptible to respiratory distress and other air quality-related health problems than the general public. Residential areas are considered sensitive to poor air quality because people usually stay home for extended periods of time, with associated greater exposure to ambient air quality.

As provided in Chapter 2, "Alternatives," physical improvements are only proposed within Zone 4 of the "Water" Study Area; whereas no physical improvements are proposed within Zones 1, 2, and 3. In this context, emphasis in terms of the affected environment is placed on sensitive receptors located within Zone 4 of the "Water" Study Area. Sensitive receptors within Zone 4 are primarily located within urban areas along raw and/or treated water conveyance alignments and consist of agricultural residences, low- and-medium-density residences, and schools. No sensitive receptors are currently located within the immediate vicinity of the water treatment plants (WTP). However, medium and high-density residential uses are planned in close proximity, as close as 50 feet, to the western perimeter of the Folsom Boulevard WTP site. Likewise, the conveyance pumping facilities, if constructed at the North Douglas Tanks, would be operated in close proximity to planned residences within the Sunridge Specific Plan area and North Douglas communities, respectively.

Conveyance alignments under Off-site Water Facility Alternative 2, 2A, 3, 3A, 4, and 4A would cross through a poverty census block and is discussed further in Section 3B.6, "Environmental Justice – Water."

3B.2.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

The following State plans, policies, regulations, and laws related to air quality are relevant to the Off-site Water Facility Alternatives, and are described in detail in Section 3A.2, "Air Quality – Land:"

- Federal Clean Air Act, administered by the U. S. Environmental Protection Agency (USEPA)
- Federal Hazardous Air Pollutant Program

No other Federal plans, policies, regulations, or laws are applicable to the Off-site Water Facility Alternatives under consideration.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

The following State plans, policies, regulations, and laws related to air quality are relevant to the Off-site Water Facility Alternatives, and are described in detail in Section 3A.2, "Air Quality – Land:"

- California Clean Air Act (CCCA), administered by the California Air Resources Board (ARB)
- State Toxic Air Contaminant Programs

No other State plans, policies, regulations, or laws are applicable to the Off-site Water Facility Alternatives under consideration.

Regional and Local Plans, Policies, Regulations, and Laws

The following local and regional plans, policies, regulations, and laws related to air quality are relevant to the Off-site Water Facility Alternatives, and are described in detail in Section 3A.2, "Air Quality – Land:"

- Guide to Air Quality Assessment in Sacramento County, prepared by the Sacramento Metropolitan Air Quality Management District (SMAQMD)
- Sacramento Metropolitan Air Quality Management District Rule 201: General Permit Requirements; Rule 402: Odors; Rule 403: Fugitive Dust; and Rule 442: Architectural Coatings.
- Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan
- Sacramento County General Plan
- City of Folsom General Plan

City of Rancho Cordova General Plan

The following policies contained in the Air Quality Element of the City of Rancho Cordova's General Plan would be applicable to Off-site Water Facilities:

- **Policy AQ.1.1** – Coordinate with responsible agencies and other jurisdictions to improve air quality within Rancho Cordova and the greater Sacramento region.
- **Policy AQ.1.2** – Evaluate projects for compliance with State and federal ambient air quality standards and the Sacramento Metropolitan Air Quality Management District's (SMAQMD) thresholds of significance. (Refer to Table AQ-3 in this Element for ambient air quality standards.)
- **Policy AQ.1.5** – Require odor impact analyses be conducted for evaluating new development requests that either could generate objectionable odors that may violate SMAQMD Rule 402 or any subsequent rules and regulations regarding objectionable odors near sensitive receptors or locate new sensitive receptors near existing sources of objectionable odors. Should objectionable odor impacts be identified, odor mitigation shall be required in the form of setbacks, facility improvements or other appropriate measures.

- **Policy AQ.2.4** – Maximize air quality benefits through selective use of landscaping vegetation that is low in emission of volatile organic compounds, and through re-vegetation of appropriate areas.

- **Policy AQ.2.5** – Utilize the guidelines in the California Air Resources Control Board Air Quality and Land Use Handbook: A Community Health Perspective when evaluating new development requests that either would generate toxic air contaminant emissions near sensitive receptors or locate new sensitive receptors near existing sources of air toxic emissions or order to minimize health hazards, and implement all feasible best available control technology, as required by SMAQMD.

- **Policy AQ.3.2** – Promote mass transit as an alternative to single-occupant motor vehicle travel.

- **Policy AQ.4.1** – Promote improved air quality benefits through energy conservation measures for new and existing development.

3B.2.3 Environmental Consequences and Mitigation Measures

Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. These thresholds also encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. For the purposes of this analysis, air quality impacts would be considered significant if construction and operation of the Off-site Water Facilities would:

- conflict with or obstruct implementation of the applicable air quality plan;

- violate any air quality standard or contribute substantially to an existing or projected air quality violation;

- result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors);

- expose sensitive receptors to substantial pollutant concentrations; or

- create objectionable odors affecting a substantial number of people;

Significance Criteria for Evaluating Toxic Air Contaminant Emissions

California Office of Environmental Health Hazard Assessment (OEHHA) defines a “no significant risk level” to have a potential cancer risk of no more than 10 in 1,000,000 when addressing risks under the Proposition 65 Regulation (OEHHA 1994). The California Air Toxics “Hot Spots” regulation (AB 2588) does not specify a significance threshold, but it requires public notification if the maximum incremental risk from a facility exceeds 10 in 1,000,000. No notification is required if the incremental risk is less than 10 in 1,000,000. This same risk level is also used by the SMAQMD for approval of facilities, with toxic Best Available Control Technology (BACT) being required for facilities with a cancer risk greater than 1 in 1,000,000. Based on these risk levels, the following thresholds are applied for the evaluation of TACs:

- probability of contracting cancer for the Maximally Exposed Individual (MEI) equals to 10 in one million or more, or

- ground-level concentrations of non-carcinogenic toxic air contaminants would result in a Hazard Index equal to or less than one for the MEI.

ANALYSIS METHODOLOGY

Off-site Water Facility-related air quality impacts generally fall into two categories, temporary, short-term impacts during construction, and long-term impacts during project operation. Construction activities would affect local particulate concentrations primarily because of fugitive dust emissions and fine particulates. The construction of the Off-site Water Facility Alternatives would also result in increased ROG and NO_X emissions from construction equipment. During the operations phase, Off-site Water Facility-related motor vehicle trips would also contribute to local and regional emissions. Modeling methodologies used in quantifying construction and operational emissions are described in the following discussion. Additional information and model results are presented in Appendix M-IV.

Construction emissions were estimated following the SMAQMD Guide to Air Quality Assessment in Sacramento County and using the Urban Emissions Model (URBEMIS) 2007 version 9.2.4. URBEMIS 2007 was used to quantify off-road equipment construction and vehicle trip emissions associated with pumping stations and the WTP. SMAQMD's roadway construction model was used to estimate emissions from construction of the Off-site Water Facility Alternative conveyance components. Construction fugitive dust emissions (PM_{10}) were calculated for disturbed soil. Consistent with the URBEMIS user's guide, it was assumed that 25% of the total acres disturbed for each construction phase would represent the maximum daily acres disturbed. Construction emissions associated with the Off-site Water Facility Alternatives were estimated under the assumption that up to three construction crews would be working simultaneously. A summary of the construction information used and URBEMIS outputs is included in Appendix M-IV.

It was assumed that the conveyance components under the Off-site Water Facility Alternatives would be constructed concurrently in 2011 to create a possible worst-case scenario to be used for evaluation purposes. Construction of the WTP was added in 2012. As provided in Chapter 2, "Alternatives," the City assumes that, on average, these scenarios could result in up to three construction crews being active at any one time. Based on the parameters set in Chapter 2, "Alternatives," the City estimates that the Off-site Water Facilities would generate up to 50 haul truck trips per day and 66 worker roundtrips per day. These trips would be dispersed on the roadway network to each of the facility construction sites. Trucks traveling to and from the construction sites would include dump trucks to transport excavated material, flatbed semi trucks, and trailers to transport pipes, concrete ready-mix trucks to transport controlled fill and concrete, and other miscellaneous trucks to support construction activities.

The calculated estimates were then compared to the 85-pounds-per-day construction threshold for NO_X, 65 pounds per day operational threshold for NO_X or ROG, 150 pounds per day threshold for PM_{10}, and 550 pounds per day for CO. As mentioned earlier, as the "Water" Study Area is either attainment or unclassified with respect to CO, SO_2, NO_2, sulfates, lead and H2S, and as the Off-site Water Facility Alternatives would not result in substantial emissions of these pollutants, these pollutants are not evaluated further.

In evaluating potential impacts to sensitive receptors within the "Water" Study Area, the City has also considered approved, future projects that are currently not constructed, but proposed in close-proximity to one or more of the Off-site Water Facility Alternatives. This approach allows for the evaluation of planned land uses that may not be captured in existing environmental conditions.

ISSUES NOT DISCUSSED FURTHER IN THIS EIR/EIS

Implementation of the applicable air quality plan—The Off-site Water Facility Alternatives are the result of a projected water supply demand for the Folsom SPA and, for this reason, the "Water" sections of the EIR/EIS do not discuss the consistency of the Folsom Specific Plan with local air quality plans and policies. Rather, "Water" sections of Chapter 3 address potential off-site changes in land use as a result of facilities proposed in Chapter 2, "Alternatives." Further discussion of the Folsom Specific Plan's consistency with applicable land use plans is provided in Section 3A.2, "Air Quality – Land." Based on those actions described in Chapter 2, "Alternatives,"

the Off-site Water Facility Alternatives do not in themselves propose any substantial change in land use that could otherwise conflict with or obstruct implementation of the applicable air quality plan. In this context, **no direct** or **indirect impact** would occur.

IMPACT ANALYSIS

Impacts that would occur under each of the Off-site Water Facility Alternatives are identified as follows:

NCP (No USACE Permit Alternative)

PA (Proposed Off-site Water Facility Alternative)

1 (Off-site Water Facility Alternative 1 – Raw Water Conveyance – Gerber/Grant Line Road Alignment and White Rock WTP)

1A (Off-site Water Facility Alternative 1A Raw Water Conveyance – Gerber/Grant Line Road Alignment Variation and White Rock WTP)

2 (Off-site Water Facility Alternative 2 Treated Water Conveyance – Douglas Road Alignment and Vineyard SWTP)

2A (Off-site Water Facility Alternative 2A Treated Water Conveyance – Excelsior Road Alignment Variation and Vineyard SWTP)

2B (Off-site Water Facility Alternative 2B Treated Water Conveyance – North Douglas Tanks Variation and Vineyard SWTP)

3 (Off-site Water Facility Alternative 3 Raw Water Conveyance – Excelsior Road Alignment and White Rock WTP)

3A (Off-site Water Facility Alternative 3A Raw Water Conveyance – Excelsior Road Alignment Variation and White Rock WTP)

4 (Off-site Water Facility Alternative 4 Raw Water Conveyance – Easton Valley Parkway Alignment and Folsom Boulevard WTP)

4A (Off-site Water Facility Alternative 4A Raw Water Conveyance – Easton Valley Parkway Alignment Variation and Folsom Boulevard WTP).

The impacts for each alternative are compared relative to the PA at the end of each impact conclusion (i.e., similar, greater, lesser).

IMPACT 3B.2-1 Generation of Construction Emissions of NO_X and PM_{10}. *Construction of the Off-site Water Facility Alternatives would produce construction-generated emissions of NO_X, an ozone precursor, and fugitive PM_{10} dust would exceed SMAQMD-recommended thresholds and would substantially contribute to emissions concentrations that exceed the NAAQS and CAAQS. Thus, project-generated, construction-related emissions of criteria air pollutants and precursors could violate or contribute substantially to an existing or projected air quality violation and/or expose sensitive receptors to substantial pollutant concentrations.*

NCP, PA, 1, 1A, 3, 3A, 4, and 4A

Construction activities associated with the Off-site Water Facilities would occur in two distinct phases: Phase I involves site preparation and earthmoving activities, while Phase II involves installing equipment, concrete, and structural improvements. Site preparation includes activities such as general land clearing and vegetation removal. Earthmoving activities include cut and fill operations, trenching, soil compaction, and grading. General construction includes adding improvements such as roadway surfaces, well and pump structures, and storage and treatment facilities. The emissions generated from these common construction activities include:

- dust (including PM_{10} and $PM_{2.5}$) primarily from fugitive sources such as soil disturbance and vehicle travel over unpaved surfaces;

- combustion emissions of criteria air pollutants (including ROG, NO_X, PM_{10}) primarily from operation of heavy equipment construction machinery (primarily diesel operated), portable auxiliary equipment and construction worker automobile trips (primarily gasoline operated); and,

- evaporative emissions (ROG) from asphalt paving and architectural coating applications.

Construction-related fugitive dust emissions would vary from day to day, depending on the level and type of activity, silt content of the soil, and the weather. In the absence of mitigation, construction activities may result in generating significant quantities of dust, and as a result, local visibility and PM_{10} concentrations may be adversely affected. In addition, the fugitive dust generated by construction would include not only PM_{10}, but also larger particles, which would fall out of the atmosphere within several hundred feet of the construction area and could result in nuisance-type impacts.

Construction activities would also result in the emission of pollutants of concern (ROG, NO_X, and PM_{10} and $PM_{2.5}$) from construction equipment exhaust and construction worker automobile trips. Emission levels for construction activities would vary depending on the number and type of equipment, duration of use, operating schedules, and the number of construction workers. Criteria pollutant emissions of ROG and NO_X from these emission sources would incrementally add to the regional atmospheric loading of ozone precursors during project construction.

For the worst-case day construction scenario, it was assumed that construction of multiple components of the Off-site Water Facilities (e.g., conveyance improvements) could occur simultaneously. The emission estimates for each of the above alternatives is primarily differentiated based on the length of conveyance pipeline construction with all other factors being equal (i.e., worst-case day site preparation for Off-site Water Facility Alternative 1 would be equivalent to the worst-case day site preparation for Off-site Water Facility Alternative 4). Estimated construction-related fugitive dust emissions, as well as exhaust emissions from construction equipment and worker trips are shown in Table 3B.2-1. As shown in Table 3B.2-1, unmitigated emissions of NO_X would exceed the 85 pounds per day significance threshold specified by the SMAQMD in 2011 or 2012 and, therefore, the associated **direct** impact would be **potentially significant**. **No indirect** impact would result. ***[Similar]***

Mitigation Measure 3B.2-1a: Develop and Implement a Construction NO_X Reduction Plan.

Consistent with SMAQMD requirements, the City of Folsom shall provide a plan for demonstrating that the heavy-duty (> 50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20% NO_X reduction. Prior to construction, the City's contractor shall submit to the SMAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during any portion of the construction of the Off-site Water Facilities. The inventory shall include the horsepower rating, engine production year, and projected hours of use or fuel throughput for each piece of equipment. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs. At least 48 hours prior to the use of subject heavy-duty off-road equipment, the Off-site Water Facilities representative shall provide SMAQMD with the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman.

Table 3B.2-1 Off-site Water Facilities Construction and Operational Emissions				
Off-site Water Facility Alternative	ROG (lb/day)	NO_X (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)
Off-site **Water Facilities Construction**				
No USACE Permit and Proposed Off-site Water Facility Alternative – 2011	25.06	**107.18**	77.38	21.32
No USACE Permit and Proposed Off-site Water Facility Alternative – 2012	234.3	**110.81**	27.55	11.29
Significant Emissions	No	**Yes**	No	No
Off-site Water Facility Alternative 1 – 2011	23.46	**103.38**	76.98	21.02
Off-site Water Facility Alternative 1 – 2012	232.73	**107.01**	27.55	10.99
Significant Emissions	No	**Yes**	No	No
Off-site Water Facility Alternative 1A – 2011	23.26	**102.88**	76.98	21.02
Off-site Water Facility Alternative 1A – 2012	232.53	**106.51**	27.55	10.99
Significant Emissions	No	**Yes**	No	No
Off-site Water Facility Alternative 2 – 2011	14.4	64.6	24.3	8.1
Off-site Water Facility Alternative 2 – 2012	14.4	64.6	24.3	8.1
Significant Emissions	No	No	No	No
Off-site Water Facility Alternative 2A – 2011	20.3	79	25.7	9.4
Off-site Water Facility Alternative 2A – 2012	20.3	79	25.7	9.4
Significant Emissions	No	No	No	No
Off-site Water Facility Alternative 2B – 2011	11	56.1	23.5	7.3
Off-site Water Facility Alternative 2B– 2012	11	56.1	23.5	7.3
Significant Emissions	No	No	No	No
Off-site Water Facility Alternative 3 – 2011	25.86	**109.28**	77.58	21.52
Off-site Water Facility Alternative 3 – 2012	235.13	**112.91**	28.15	11.49
Significant Emissions	No	**Yes**	No	No
Off-site Water Facility Alternative 3A – 2011	24.36	**105.68**	77.18	21.22
Off-site Water Facility Alternative 3A – 2012	233.63	**109.31**	27.75	11.19
Significant Emissions	No	**Yes**	No	No
Off-site Water Facility Alternative 4 – 2011	26.16	**109.98**	77.68	21.62
Off-site Water Facility Alternative 4 – 2012	235.43	**113.61**	25.05	11.59
Significant Emissions	No	**Yes**	No	No
Off-site Water Facility Alternative 4A – 2011	25.56	**108.38**	77.48	21.52
Off-site Water Facility Alternative 4A – 2012	234.83	**112.01**	28.05	11.49
Significant Emissions	No	**Yes**	No	No
Thresholds for Construction Emission	*None*	*85(1)*	*150(2)*	*None*

Note: Calculations were completed using URBEMIS 2007 and SMAQMD, 2007 and are included in Appendix M-VI. The emissions listed above are for a worse-case day, where it was assumed that construction of the conveyance components of the Off-site Water Facilities would overlap with construction of the WTP.

Implementation: City of Folsom Utilities Department

Timing: Prior to construction of the Off-site Water Facilities.

Enforcement:

1. For improvements that would be located within the City of Folsom: City of Folsom Community Development Department and SMAQMD.

2. For improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department and SMAQMD.

3. For improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department and SMAQMD.

Mitigation Measure 3B.2-1b: Conduct Visible Emissions Testing and if Non-Compliance, Repair Equipment Immediately.

Controlling visible emissions from off-road diesel powered equipment. The City shall ensure that emissions from all off-road diesel powered equipment used on the project site do not exceed 40% opacity for more than three minutes in any one hour. Any equipment found to exceed 40% opacity (or Ringelmann 2.0) shall be repaired immediately, and the City and SMAQMD shall be notified within 48 hours of identification of non-compliant equipment. A visual survey of all in-operation equipment shall be made at least monthly, and a quarterly summary of the visual survey results shall be submitted throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey.

Implementation: City of Folsom Utilities Department

Timing: During construction of all Off-site Water Facilities.

Enforcement:

1. For improvements that would be located within the City of Folsom: City of Folsom Community Development Department and SMAQMD.

2. For improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department and SMAQMD.

3. For improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department and SMAQMD.

Mitigation Measure 3B.2-1c: Implement Fugitive Dust Control Measures and a Particulate Matter Monitoring Program during Construction.

The City shall implement fugitive dust control measures and a particulate matter monitoring program during construction. The City shall ensure implementation of dust control measures and a particulate matter monitoring program during each phase of construction. Dust control measures may include, but are not limited to, the following:

- minimize on-site construction vehicle speeds on unpaved surfaces;
- post speed limits;

- suspend grading operations when wind is sufficient to generate visible dust clouds;
- pave, water, use gravel, cover, or spray a dust-control agent on all haul roads;
- Prohibit no open burning of vegetation during project construction;
- Chip or deliver vegetative material to waste-to-energy facilities;
- reestablish vegetation as soon as possible after construction and maintain vegetation consistent with the parameters established in Mitigation Measure 3B.2.1a;
- clean earthmoving construction equipment with water once daily and clean all haul trucks leaving the site; and
- water and keep moist all exposed earth surfaces, graded areas, storage piles, and haul roads at all times.

Implementation: City of Folsom Utilities Department

Timing: During construction of all Off-site Water Facilities.

Enforcement:
1. For improvements that would be located within the City of Folsom: City of Folsom Community Development Department and SMAQMD.
2. For improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department and SMAQMD.
3. For improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department and SMAQMD.

2, 2A, and 2B

The types and sources of construction emissions associated with Off-site Water Facility Alternatives 2, 2A, and 2B would be similar to those identified for the above alternatives; however, no WTP would be constructed under these alternatives. As shown in Table 3B.2-1, construction-related emissions for Off-site Water Facility Alternatives 2, 2A, and 2B is substantially reduced as a result of the reduced length of the conveyance alignment(s) and absence of a new WTP. Based on these differences, Off-site Water Facility Alternatives 2, 2A, and 2B would not generate significant emissions of NO_X or PM_{10} in 2011 or 2012 and, therefore, construction emissions would not exceed SMAQMD thresholds and, therefore, **direct** and **indirect** air quality impacts would be **less than significant**. ***[Lesser]***

Following the application of the prescribed mitigation measures, the City would still be unable to achieve a 20% reduction in NO_X in 2011 or 2012 for the No USACE Permit Alternative, Proposed Off-site Water Facility Alternative, and Off-site Water Facility Alternatives 1, 1A, 3, 3A, 4, and 4A. For this reason, temporary and short-term construction-related impacts to local and regional ozone concentrations would remain **significant and unavoidable** under the No USACE Permit Alternative, Proposed Off-site Water Facility Alternative, and Off-site Water Facility Alternatives 1, 1A, 3, 3A, 4, and 4A because no feasible mitigation is available to fully reduce the impacts to a less-than-significant level.

IMPACT 3B.2-2 Generation of Long-Term Operational (Regional) Emissions of ROG, and NO_X. *Operational area- and mobile-source emissions from implementation of the Off-site Water Facility Alternatives would not exceed the SMAQMD-recommended threshold of 65 lb/day for ROG and NO_X.*

NCP, PA, 1, 1A, 3, 3A, 4, and 4A

Operational emissions for the Off-site Water Facility Alternatives would be generated primarily from on-road vehicular traffic and, to a lesser extent, areas source. Regardless of which siting option is chosen for the WTP, the maximum amount of Off-site Water Facilities-generated traffic on any single day would be up to 40 trips (35 trips related to operation/maintenance of the WTP, 2 trips for chemical/supply deliveries, 2 trips from visitors, and 1 trip related to solids removal). For the pump station facilities, a minor number of employee trips would be required periodically for routine inspection and maintenance. These trips would likely be made by employees at the WTP and, therefore, are assumed to be included within the total 40 daily vehicle trips. As provided in Table 3B.2-2, operational emissions associated with the Off-site Water Facility Alternatives would not exceed the significance thresholds for NO_X or ROG.

Further, since the Off-site Water Facilities lie in an attainment area for CO (concentrations are within the state and Federal ambient standards) and the "Water" Study Area contains relatively low background levels of CO compared to other parts of the Central Valley, it is expected that the indirect impact on CO concentrations would be minimal. For these reasons, implementation of the Off-site Water Facilities would generate only minor quantities of criteria air pollutants over its long-term operation and, therefore, the **direct** and **indirect** impacts would be **less than significant**. ***[Similar]***

Table 3B.2-2
Off-site Water Facilities Construction and Operational Emissions

Off-site Water Facility Alternative	ROG (lb/day)	NO_X (lb/day)	PM_{10} (lb/day)	$PM_{2.5}$ (lb/day)
Off-site Water Facilities Operations (WTP) – 2012	4.51	4.25	6.13	1.19
Significant Emissions	No	No	No	No
Thresholds for Operational Emissions	*65*	*65*	*150*	*None*

Note: Calculations were completed using URBEMIS 2007 and are included in Appendix M-VI.
Source: URBEMIS 2007

The water treatment processes at the proposed WTP facility would involve chemical coagulation, flocculation, filtration, disinfection, and the option for ozonation. Chemicals used in these processes would be stored on-site and would include aluminum sulfate, polymers, filter aid polymer, sodium hydroxide, sodium hypochlorite, powdered activated carbon, citric acid, and sodium bisulfite. These chemicals would be stored in tanks, drums, etc. within a designated chemical building, consistent with state and Federal standards. The chemical tank vents would be subject to SMAQMD permitting. Such permits may require scrubbing of air vented from these tanks to remove acid and caustic vapors. If determined necessary, the ozonation process would be subject to SMAQMD review and permitting.

The operation of emergency generators would burn diesel fuel and would generate combustion emissions during operation. However, back-up generators would not be operated under normal conditions and, more limited, up to one hour per week for testing. Because the emergency generators are stationary point sources, they would be subject to review and permitting by SMAQMD. The increased emissions from diesel or gasoline back-up generators are expected to result in **less-than-significant direct** and **indirect** impacts to local and regional air quality. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

2, 2A, and 2B

With the integration into the Vineyard SWTP, either directly or through the Douglas Tanks, no new major sources of operational emissions would be expected. Existing personal at the Vineyard SWTP would likely be sufficient to cover most operational duties and, therefore, only a few new employee vehicle trips, less than 10 total daily trips, would be anticipated over the long-term. Based on this circumstance, long-term emissions of criteria air pollutants would be less than those estimated for the Proposed Off-site Water Facility Alternative and this **direct** and **indirect** impact would be **less than significant**. ***[Lesser]***

Mitigation Measures: No mitigation measures are required.

IMPACT 3B.2-3 Exposure of Sensitive Receptors to Short- and Long-Term Emissions of Toxic Air Contaminants. *Implementation of the Off-site Water Facility Alternatives could expose sensitive receptors to short- and long-term emissions of TACs from on-site stationary sources.*

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A

Construction of the Off-site Water Facility Alternatives would not emit any hazardous air pollutants (HAPs) in any significant quantity other than from large, heavy-duty, diesel-powered equipment exhaust. The OEHHA currently describes the health risk from diesel exhaust entirely in terms of the amount of particulate, or PM_{10}, that is emitted. Currently, the health risk associated with diesel exhaust PM_{10} or diesel particular matter (DPM) only has a carcinogenic and chronic effect; no short-term acute effect is recognized. Off-site Water Facilities construction would be limited in duration, lasting less than three years total, and therefore, no long term, chronic impact would be expected. Further, over the 3-year construction schedule, constructed-generated diesel PM would not be emitted at any single location along the selected pipeline route for an extended period of time. In recognition of these circumstances combined with dust control mitigation prescribed in Mitigation Measure 3B.4-1c, construction of the Off-site Water Facilities would not expose sensitive receptors to substantial pollutant concentration and the **direct** and **indirect** impact is considered **less than significant**. ***[Similar]***

Over the longer term, operational emissions associated with the proposed booster pump station(s) would be generated from the use of pumps and emergency generators. This equipment would operated via electricity under normal operating conditions year around and, under certain situations, under diesel power during emergencies. The operation of diesel engines to pump raw/treated water supplies would contribute to increased air emissions in the areas where these facilities are proposed. As indicated in Section 3B.10, "Land Use and Agricultural Resources – Water," residential uses are planned in areas in close proximity to the White Rock WTP and the Folsom Boulevard WTPs. Similarly, based on the ultimate connection point to the Freeport Project, the booster pump under any of the Off-site Water Facility alternatives could be located in close proximity to existing agricultural residences.

The typical significance threshold for health risk exposure to TACs, including diesel emissions, is 10 cases of cancer per 1,000,000 population over a 70-year exposure period. The diesel PM cancer risk is the probability of an individual developing cancer as a result of exposure to diesel PM. The new booster pump and WTP would be developed and operated in areas within the Central Valley where residential uses are planned or rural residences currently exist. The precise locations of these facilities has not yet been determined, but the anticipated general locations are shown in Exhibits 2-25, 2-26, 2-28, 2-29, 2-30, and 2-31.

The Off-site Water Facilities are expected to cause minimal diesel emissions with fewer than 5 diesel truck trips per day and testing of the emergency generator limited to one-hour intervals on a weekly basis. For these reasons, the WTP and pumping facilities are not expected to substantially increase toxic risks to adjacent receptors.

Further, a recently completed health risk assessment of comparable sources, but at a higher rated treated/pumping capacity, assessed the potential impact of diesel sources operating within 200 feet of nearby residences on a year-round basis (Environmental Science Associates 2007). The study concluded that the impact of the diesel PM emissions would be less than significant because they resulted in a cancer risk of less than 10 cases in a million population. This finding is largely attributed to the highly dispersive nature of diesel PM once emitted. However, without a precise facility location for the booster pump and WTP, the City is unable to confirm that these facilities would be located outside a 200-foot-wide buffer and whether DPM emissions would pose conditions that exceed the previously studied impacts. For this reason, the implementation of Mitigation Measures 3B.2-2a and 2b would be required to reduce the **direct** and **indirect** impacts to a **less-than-significant** level. ***[Similar]***

Mitigation Measure 3B.2-3a: Cite Pump Siting Buffers Away from Sensitive Receptors.

New pumping stations including back-up diesel generators shall be located more than 200 feet away from sensitive receptors. Electrically-powered pumps shall be used to power new pumps, to the extent practicable.

Implementation: City of Folsom Utilities Department

Timing: Prior to the approval of grading plans and building permits for all off-site water pumping facilities.

Enforcement:

1. For improvements that would be located within the City of Folsom: City of Folsom Community Development Department and SMAQMD.

2. For improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department and SMAQMD.

3. For improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department and SMAQMD.

Mitigation Measure 3B.2-3b: Conduct Project-Level DPM Screening and Implement Measures to Reduce Annual DPM to Acceptable Concentrations.

Screening-level DPM assessments shall be conducted for diesel-powered pump operations proposed within 200 feet of residences or other sensitive receptors. These analyses should include exact distances between the receptors and operations, and include the actual DPM emissions for the engines proposed. If the analysis shows an annual average DPM concentration from project operations at residences within 200 feet of the DPM source to be greater than 0.024 $\mu g/m^3$, the engine location shall be moved to a location where the annual average DPM concentration from project emissions at the residences is less than 0.024 $\mu g/m^3$. The acceptable concentration of 0.024 $\mu g/m^3$ was determined using the current OEHHA cancer potency factor and methodology for diesel exhaust (OEHHA 2003). If diesel exhaust concentrations at the affected receptor would be below 0.024 $\mu g/m^3$, then the cancer health risk would be less than 9.9 cancers in a million population.

Implementation: City of Folsom Utilities Department

Timing: Prior to the approval of grading plans and building permits for all off-site water pumping facilities.

Enforcement:

1. For improvements that would be located within the City of Folsom: City of Folsom Community Development Department and SMAQMD.

2. For improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department and SMAQMD.

3. For improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department and SMAQMD.

With implementation of Mitigation Measures 3B.2-3a and 3B.2-3b, air quality impacts to sensitive receptors would be reduce to a **less-than-significant** level because diesel powered pumps and back-up generators would be placed a sufficient distance from sensitive receptors.

IMPACT 3B.2-4 Creation of Objectionable Odors. *The Off-site Water Facilities could create objectionable odors affecting a substantial number of people.*

NCP, PA, 1, 1A, 3, 3A, 4, and 4A

As outlined under SMAQMD's Qualitative Long-Term Emission Thresholds, the types of land use development that pose potential odor problems include agriculture, wastewater treatment plants, food processing and rendering facilities, chemical plants, composting facilities, landfills, transfer stations, and dairies. The implementation of the Off-site Water Facilities does not involve the operation of any of these uses nor would it involve the placement of sensitive receptors in close proximity to one of the above-identified odor-generating uses.

During construction of the Off-site Water Facilities, the various diesel-powered vehicles and equipment in use could create minor odors. These odors are not likely to be noticeable beyond the immediate construction area and, in addition, would be temporary and short-lived in nature as construction progresses. Based on these considerations, **direct** and **indirect** impacts from construction-related odors would be **less than significant**. ***[Similar]***

Operation of the WTP, conveyance, and pumping facilities would involve use of vehicles and/or maintenance equipment when necessary; however, these activities are not expected to generate objectionable odors. Further, pumping operations would be within fully enclosed structures and due to their nature would not result in odor generation. Treatment chemicals used in the water treatment processes would be stored in an enclosed building and would not generate odors off-site. Although water treatment residuals would be generated during the treatment process, these residuals would be mostly inert, containing the particles removed from the raw water (primarily silt and clay) and aluminum hydroxide produced during coagulation. The residuals would be dried on-site in solids drying beds and hauled off-site for disposal. This process would not create objectionable odors that could otherwise affect a substantial number of people and the **direct** and **indirect** impacts are considered **less than significant**. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

2, 2A, and 2B

The discussion provided for the above alternatives would generally apply to Off-site Water Facility Alternatives 2, 2A, and 2B. The main differentiating characteristic between the previously discussed alternatives and Off-site Water Facility Alternatives 2, 2A, and 2B is that these alternatives would not include a new WTP. In this context, **no direct** or **indirect** impacts in relation to odors would be expected under Off-site Water Facility Alternatives 2, 2A, and 2B. ***[Lesser]***

Mitigation Measures: No mitigation measures are required.

3B.2.4 RESIDUAL SIGNIFICANT IMPACTS

Construction of the Off-site Water Facility Alternatives could result in temporary, but significant and unavoidable impacts to air quality through the generation of criteria ozone precursors (e.g., NO_X). Even after the application of mitigation, residual construction-related direct and indirect NO_X impacts would be significant for the No USACE Permit Alternative, Proposed Off-site Water Facility Alternative, and Off-site Water Facility Alternatives 1, 1A, 3, 3A, 4, and 4A. Due to the substantially smaller footprint of the Off-site Water Facilities under Alternatives 2, 2A, and 2B, residual construction-related ozone impacts would be less than significant without mitigation. Only minor quantities of criteria air pollutants would be generated during the operation of all the Off-site Water Facility Alternatives and, therefore, the residual impact would be less than significant with no mitigation required.

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3A.3 BIOLOGICAL RESOURCES – LAND

3A.3.1 AFFECTED ENVIRONMENT

The SPA is located in the eastern portion of Sacramento County, and there are two local roadway connections into western El Dorado County. The SPA is characterized by rolling foothill topography. Elevations within the SPA range from approximately 240 feet to 800 feet above mean sea level. Historic land uses in the area include cattle ranching, farming, and mining activities, primarily gold mining. The SPA is predominantly characterized by annual grassland on gently sloping topography. Also present in the SPA are blue oak woodland, seasonal wetland, freshwater seeps, swales, riparian woodland and scrub, and intermittent and perennial drainages (Alder Creek).

The following documents were used as information sources during preparation of this biological resources section. These documents are provided in Appendix D1 through Appendix D25 of this EIR/EIS.

- *Biological Resources Report, Sacramento Country Day School* (FHK Companies 2003)
- *Biological Resources Assessment 130-acre Folsom 138 Property* (Woodside Homes 2004)
- *Special-status Plant and Wildlife Report, Sacramento Day School, White Rock Road* (Holloway Rassmusson Molondanof 2005)
- *Results of a Focused Plant Survey on the Folsom South Site* (MJM Properties LLC 2006a)
- *Biological Resources Assessment, Folsom South 1,400-acre Site* (MJM Properties LLC 2006b)
- *Draft Special-status Species Assessment for Folsom South Area Group, Javanifard and Zhargami Parcel, Sacramento County* (The Hodgson Company 2007a)
- MJM Properties LLC. 2007a. *90-Day Report, 2006–2007 Wet-Season Survey for Listed Vernal Pool Branchiopods, Folsom South Property, Sacramento County, California*. Prepared by Foothill Associates, Rocklin, CA.
- MJM Properties LLC. 2007b. *Results of Analyses of Soil Samples Collected from the Proposed Folsom South Project Site*. Prepared by Christopher Rogers of EcoAnalysts, Inc, Woodland, CA, for Foothill Associates, Rocklin, CA.
- *Draft Biological Resources Assessment Report, Centex - Folsom Heights Property* (Centex Homes 2006a)
- *Listed Vernal Pool Branchiopod Wet Season Survey 90-Day Report, Carpenter Ranch* (Colliers International 2007a)
- *Revised Jurisdictional Delineation and Special-status Species Evaluation, Carpenter Ranch Property* (Colliers International 2007b)
- Gibson and Skordal, LLC. 2009. *Carpenter Ranch Vernal Pool Branchiopod Survey Results and Summary.* Memorandum prepared by Ginger Fodge for Kent MacDiarmid, April 10, 2009.
- *Folsom 560 Revised Wetland Delineation* (GenCorp Realty Investments 2007a) *Wetland Delineation for Folsom 560* (GenCorp Realty Investments 2006a)
- *Prairie City Road Business Park – Revised Wetland Delineation* (GenCorp Realty Investments 2007b) *Wetland Delineation for Prairie City Road Business Park* (GenCorp Realty Investments 2006b)
- *Delineation of Waters of the United States, Folsom South 1,400-acre Site* (MJM Properties LLC 2006c)

- *Wetland Delineation for Folsom South Owners Group Javanifard and Zhargami Parcel* (The Hodgson Company 2007b)
- *Preliminary Delineation of Waters of the United States Folsom Heights Property* (Folsom Heights LLC 2008)
- *Comprehensive Clean Water Act Section 404 Application, Folsom Plan Area Specific Plan* (City of Folsom et al. 2008)
- *Tree Survey for the Centex - Folsom Heights Property* (Centex Homes 2006b)
- *Arborist Report on Trees on the White Rock Springs Golf Course Project* (Sacramento Valley View 1993)
- *Folsom South Sphere of Influence Project Site Native Oak and Non Oak Tree* Tabulation *for Grid Areas 1–7* (MJM Properties LLC 2005)
- *Carpenter Ranch – Folsom Sphere of Influence Project Site Initial Arborist Report and Inventory Summary* (Carpenter Ranch LP 2006)
- *Arborist Report for 14005 White Rock Road* (PDF Development Company 2003)
- *Arborist Report for Sacramento Country Day School* (Katz Kitpatrick Properties 2007)
- ECORP Consulting. 2009b. *Folsom Specific Plan Area Bio Survey Status Report (Wet Season, Rare Plant, Elderberry, and other)*. Prepared by Richard O'Neal, April 13, 2009.

PLANT COMMUNITIES

The SPA is characterized primarily by annual grassland, which covers the eastern two-thirds of the site as well as the southwest corner, and by blue oak woodland, which is prevalent in the northwestern portion of the site. Some areas of the SPA, mostly in the western half, have a subsurface hardpan layer that supports a mosaic of vernal pools and swales, and seasonal wetlands interspersed within a matrix of annual grassland vegetation. Plant communities found in the SPA are described in the following paragraphs. The location and extent of these communities is shown in Exhibit 3A.3-1.

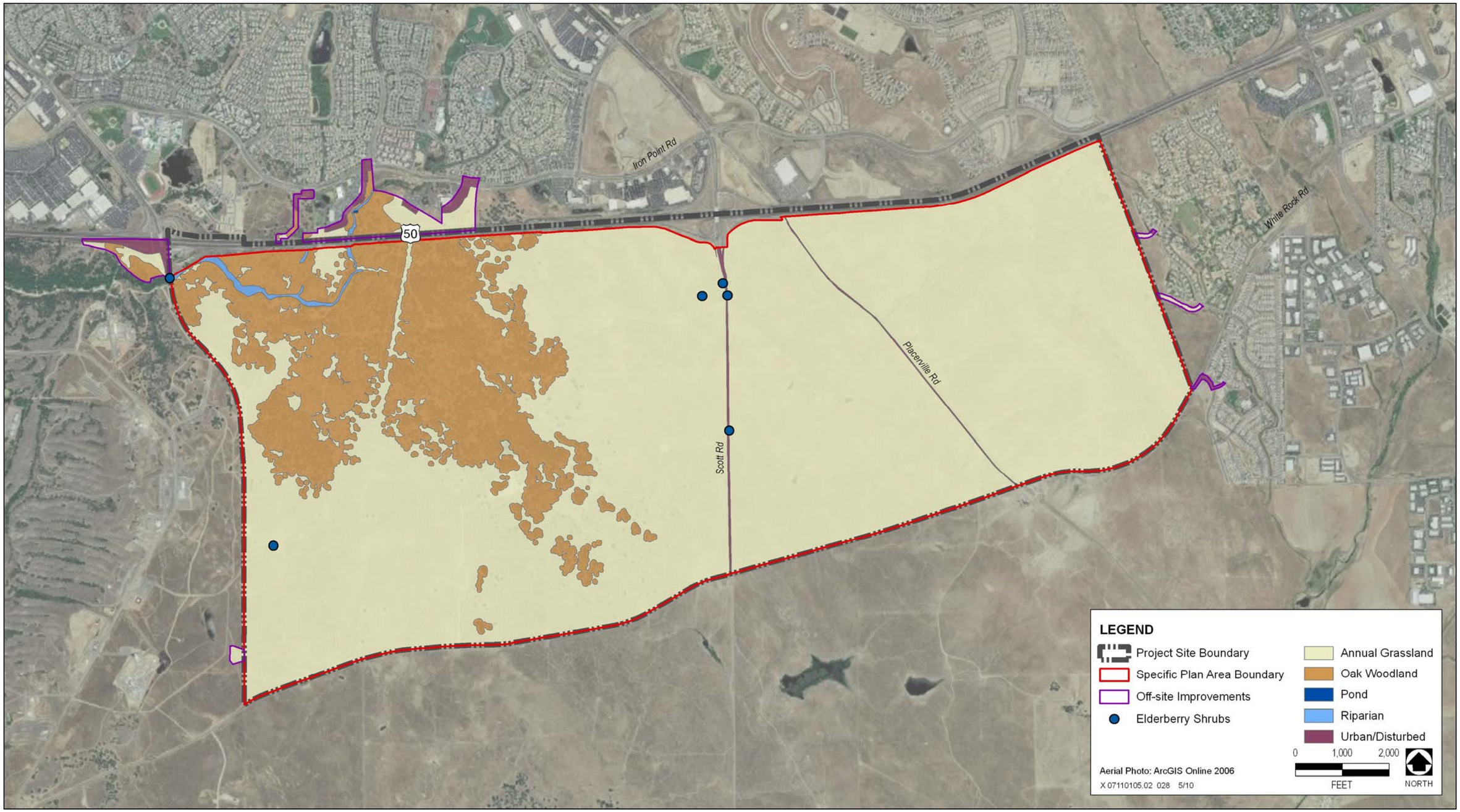
Upland Communities

Annual Grassland

This community type covers over two-thirds (approximately 2,594 acres) of the SPA and is characterized by a dense cover of nonnative annual grasses interspersed with numerous species of nonnative annual forbs and native wildflowers. Characteristic grass species include ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), Italian ryegrass (*Lolium multiflorum*), and medusahead (*Taeniatherum caput-medusae*). Common nonnative forbs include cut-leaved geranium (*Geranium dissectum*), Klamath weed (*Hypericum perforatum*), prickly sow thistle (*Sonchus asper*), yellow starthistle (*Centaurea solstitialis*), and Italian thistle (*Carduus pycnocephalus*). Native wildflowers observed in the annual grassland within the SPA include wild hyacinth (*Triteleia hyacinthina*), Ithuriel's spear (*Triteleia laxa*), purple owl's-clover (*Castilleja exserta*), valley tassels (*Castilleja attenuata*), harvest brodiaea (*Brodiaea elegans*), and Fremont's tidy-tips (*Layia fremontii*). The off-site project elements contain another 43.3 acres of annual grassland.

Valley Needlegrass Grassland

Small inclusions of valley needlegrass grassland may be present in the SPA, interspersed within the annual grassland community described above. Valley needlegrass grassland is characterized by purple needlegrass (*Nassella pulchra*), a native perennial bunchgrass. Associate species are primarily native and nonnative annual



Source: ECORP Consulting 2008, RRM Design Group 2008

Existing Plant Communities **Exhibit 3A.3-1**

forbs including blowwives (*Achyrachaena mollis*), purple clarkia (*Clarkia purpurea* ssp. *quadrivulnera*), California poppy (*Eschscholzia californica*), hayfield tarweed (*Hemizonia congesta* ssp. *luzulifolia*), valley tassels (*Castilleja attenuata*), and species characteristic of the annual grassland community. This community type has not been mapped and quantified in the SPA or in the proposed off-site sewer force main alignment, but was observed on the Folsom Heights property during the wetland delineation conducted on the property and may be present elsewhere. ECORP Consulting (ECORP) biologists surveyed the remaining off-site elements for valley needlegrass grassland in fall and winter 2008 and did not find this community present.

Blue Oak Woodland

As defined by the California Oak Woodlands Conservation Act of 2001, oak woodlands are stands of oak trees with greater than 10% canopy cover. Approximately 642 acres of blue oak woodland containing 249.8 acres of tree canopy (39% canopy cover) is present in the SPA, primarily in the northwestern third of the site, and approximately 38 additional acres are present within the location of the off-site interchange elements at Prairie City Road, Oak Avenue, and Rowberry Drive Overcrossing. Blue oak woodland is a broadleaved deciduous woodland plant community with a grassy understory. The tree layer is dominated by blue oak (*Quercus douglasii*) while the understory is dominated by dogtail grass (*Cynosurus echinatus*), soft chess, and other herbaceous species similar to those found in the annual grassland community.

Wetland Communities and Other Waters

Freshwater Seeps

A seep is a wetland plant community characterized by dense cover of perennial herb species usually dominated by rushes, sedges, and grasses. Freshwater seep communities occur on sites with permanently moist or wet soils resulting from daylighting groundwater. Characteristic plant species found in seeps in the SPA include Baltic rush (*Juncus balticus*), iris-leaved rush (*Juncus xiphioides*), common spikerush (*Eleocharis macrostachya*), white hedge-nettle (*Stachys albens*), rice cutgrass (*Leersia oryzoides*), and dense-flowered willowherb (*Epilobium densiflorum*). There are approximately 10.80 acres of seeps present, primarily in the eastern portion of the SPA interspersed within the annual grassland matrix. All acreage of the seep habitat in the SPA has been determined to fall under USACE jurisdiction. There are no seeps present in the off-site elements of the project.

Vernal Pools

Vernal pools are natural ephemeral wetlands that form in shallow depressions underlain by an impervious or restrictive soil layer near the surface that restricts the percolation of water. Vernal pools are supported by direct precipitation and surface runoff. They pond during the wet season and typically become dry by late spring. Vernal pools are typically characterized by a high percentage of native plant species, many of which may be endemic (restricted) to vernal pools. Many of the vernal pools located on the northeastern portion of the Folsom 560 site appear to have been created by human activities, probably from mining test holes.

Characteristic vernal pool species in the SPA include annual hairgrass (*Deschampsia danthonioides*), Fremont's goldfields (*Lasthenia fremontii*), common spikerush, coyote thistle, stipitate popcorn flower (*Plagiobothrys stipitatus*), white-headed navarretia (*Navarretia leucocephala*), and horned downingia (*Downingia bicornuta*). There are approximately 4.67 acres of vernal pools in the SPA, consisting of 4.64 acres subject to USACE jurisdiction and 0.03 acre that has been determined to be non-jurisdictional by USACE, but is considered a water of the state subject to regulation under the Porter Cologne Act. They are concentrated primarily within the blue oak woodland in the western third of the site, but there are a few scattered elsewhere. There is an estimated 0.59 acre of vernal pool habitat in the off-site elements of the project that is likely subject to USACE jurisdiction, but a formal wetland delineation has not been completed and verified by USACE for the off-site elements.

Seasonal Wetlands

Seasonal wetlands are present in the SPA in both topographic depressions and swales. Hydrologically, seasonal wetlands are similar to vernal pools because they remain inundated or saturated for extended periods during winter and spring. Seasonal wetland swales do not pond water appreciably, but are inundated by flowing water during rainfall and support a saturated upper soil horizon for an extended period of time during the growing season. Characteristic plant species in seasonal wetlands and seasonal wetland swales in the SPA include coyote thistle (*Eryngium vaseyi*), toad rush (*Juncus bufonius*), hyssop loosestrife (*Lythrum hyssopifolium*), foothill meadowfoam (*Limnanthes striata*), dallis grass (*Paspalum dilatatum*), rabbitsfoot grass (*Polypogon monspeliensis*), common spikerush, and Italian ryegrass (*Lolium multiflorum*). There are approximately 4.66 acres of depressional seasonal wetlands and 25.48 acres of seasonal wetland swales scattered throughout the SPA. It has been determined by USACE that 4.657 acres of the depressional seasonal wetlands and all of the 25.48 acres of seasonal wetland swales are Federally jurisdictional. There is 0.004 acre of depressional seasonal wetland that has been disclaimed by USACE, but that is considered a water of the state subject to regulation under the Porter Cologne Act. Off-site project elements support an additional 0.25 acre of depressional seasonal wetlands and 0.55 acre of seasonal wetland swales. Jurisdiction over the off-site seasonal wetlands has not been determined.

Drainage Channels

Drainage channels occur throughout the SPA. These include intermittent to nearly permanent stream channels. Alder Creek is an intermittent to perennial stream that transects the SPA from the south-central portion at White Rock Road to the northwest corner at Prairie City Road, flowing generally in a northwesterly direction. Portions of Alder Creek support surface flow all year because flows are supplemented by runoff from adjacent developed areas, but upstream segments of the creek within the SPA are intermittent. Intermittent stream channels support flowing water through winter and spring, but dry up by summer. Many of the other intermittent channels present in the SPA are tributary to Alder Creek. There are 17.19 acres of perennial stream channel and 11.72 acres of intermittent drainage channel scattered throughout the SPA and all of this acreage has been determined to be Federally jurisdictional by USACE. The proposed off-site elements of the project (i.e., Prairie City Road and Oak Avenue Interchanges and improvements to Prairie City and White Rock Roads) contain an additional 0.04 acre of intermittent drainage channels and 2.47 acres of perennial stream channel and 0.04 acre of intermittent drainage channel. Jurisdiction over the off-site drainage channels has not yet been determined, but it is likely that they are all subject to Federal jurisdiction.

Hydrophytic plant species (i.e., plants adapted to grow in water), such as cattail (*Typha* sp.), dense sedge (*Carex densa*), slender rush (*Juncus tenuis*), American tule (*Scirpus americanus*), and dallisgrass, occur within the Ordinary High Water Mark (OHWM) of the drainage channels on-site. Vegetation cover becomes denser in flatter portions of the drainages where the channels are wide and relatively shallow. Riparian vegetation occurs within the OHWM and along the banks of Alder Creek. Much of the riparian habitat is characterized by dense monocultures of Himalayan blackberry (*Rubus discolor*) and would best be described as blackberry scrub. There are scattered patches of riparian woodland that include typical riparian species such as black willow (*Salix goodingii*), arroyo willow (*Salix lasiolepis*), purpletop vervain (*Verbena bonariensis*), and tall flatsedge (*Cyperus eragrostis*). Approximately 11 acres of riparian habitat are present in the SPA. The Oak Avenue interchange supports an additional 2.4 acres of riparian woodland and blackberry scrub along the banks of a perennial tributary to Alder Creek and the Prairie City Road interchange supports another 0.9 acre of riparian woodland along Alder Creek. These are the only off-site elements that support riparian habitat. Approximately 0.11 acre of riparian habitat present qualifies as a wetland under the CWA. This habitat consists of a stand of willow shrubs located within an intermittent drainage channel at the northern boundary of the Folsom Heights site and is best described as willow scrub.

Artificial ditches are also present throughout the SPA. Ditches are excavated channels surrounded by levees. Many of these features follow topographic contours and may represent relics from historic hydraulic gold mining activities, while others may have been excavated to transport irrigation water. Some ditches in the SPA support

hydrophytic vegetation such as rabbitsfoot grass, curly dock (*Rumex crispus*), and common yellow monkeyflower (*Mimulus guttatus*). Approximately 2.36 acres of ditches, 1.96 of which have been determined to be Federally jurisdictional, are present throughout the SPA and 0.01 acre of ditch is present in the off-site Oak Avenue interchange element.

Freshwater Marsh

Freshwater marsh is an emergent wetland plant community occurring in areas that are permanently or nearly permanently inundated. In the SPA, this community type was found in association with a few of the drainage channels described above. Dominant plant species identified in the freshwater marsh include cattail and common tule (*Scirpus acutus*). Approximately 0.21 acre of freshwater marsh are present in the SPA and approximately 1.94 acres present in the off-site elements of the project. All of the freshwater acreage present in the SPA has been determined to be Federally jurisdictional.

Ponds

Nine ponds, comprising approximately 7.72 acres, are present throughout the SPA. These include ponds created through impoundment of stream channels and excavated basins. Approximately 6.87 acres of pond were determined to be Federally jurisdictional while 0.85 were determined by USACE to be non-jurisdictional, although these waters are still considered waters of the state. The on-site ponds are typically inundated year round and some support sparse cover of emergent vegetation along the shallow margins, and black willow and Fremont cottonwood (*Populus fremontii*) on their banks. In contrast to seasonal wetlands, seeps, and marshes, ponds are characterized predominantly by open water or bare ground and are not vegetated wetlands. No ponds are present in off-site elements of the project.

WILDLIFE

The SPA supports an abundant and diverse fauna. This large and mostly contiguous block of open space, dominated by natural plant communities, is particularly important to native wildlife species associated with grassland, oak woodland, and riparian habitats. The SPA provides habitat for both resident breeding and migratory raptors that prefer large tracks of open grassland for foraging. The oak woodland and riparian communities are attractive to many of the common wildlife species in Sacramento County, as well as a few special-status wildlife species, which are discussed separately below under “Sensitive Biological Resources.”

A few of the many common wildlife species expected to occur in the SPA include red-tailed hawk (*Buteo jamaicensis*), western kingbird (*Tyrannus verticalis*), oak titmouse (*Baeolophus inornatus*), savannah sparrow (*Passerculus sandwichensis*), western meadowlark (*Sturnella neglecta*), gopher snake (*Pituophis catenifer*), western fence lizard (*Sceloporus occidentalis*), coyote (*Canis latrans*), and black-tailed hare (*Lepus californicus*).

SENSITIVE BIOLOGICAL RESOURCES

Sensitive biological resources addressed in this section include those that are afforded consideration or protection under the California Environmental Quality Act (CEQA), California Fish and Game Code, California Endangered Species Act (CESA), Federal Endangered Species Act (ESA), Clean Water Act (CWA), and the Porter-Cologne Water Quality Control Act (Porter-Cologne Act).

Special-Status Species

Special-status species include plants and animals in the following categories:

- species officially listed by the State of California or the Federal government as endangered, threatened, or rare;

- candidates for state or Federal listing as endangered, threatened, or rare;
- taxa (i.e., taxonomic categories or groups) that meet the criteria for listing, even if not currently included on any list, as described in California Code of Regulations (CCR) Section 15380 of the State CEQA Guidelines;
- species identified by the California Department of Fish and Game (DFG) as species of special concern;
- species listed as Fully Protected under the California Fish and Game Code;
- species afforded protection under local or regional planning documents; and
- taxa considered by the California Native Plant Society (CNPS) to be "rare, threatened, or endangered in California." The CNPS includes five lists for categorizing plant species of concern, which are summarized as follows:

    - List 1A—Plants presumed to be extinct in California;
    - List 1B—Plants that are rare, threatened, or endangered in California and elsewhere;
    - List 2—Plants that are rare, threatened, or endangered in California but more common elsewhere;
    - List 3—Plants about which more information is needed (a review list); and
    - List 4—Plants of limited distribution (a watch list).

Plant inventories prepared by CNPS provide one source of substantial evidence that is used by lead agencies to determine what plants meet the definition of endangered, rare, or threatened species, as described in CCR Section 15380 of the State CEQA Guidelines. For purposes of this EIR/EIS, the relevant inventories are List 1B (plants that are rare, threatened, or endangered in California and elsewhere) and List 2 (plants that are rare, threatened, or endangered in California but more common elsewhere). All plants listed in the CNPS Inventory (CNPS 2008) are considered "special plants" by DFG. The term "special plants" is a broad term used by DFG to refer to all of the plant taxa inventoried by the California Natural Diversity Database (CNDDB), regardless of their legal or protection status. Notation as a List 1B or 2 plant species does not automatically qualify the species as endangered, rare, or threatened within the definition of State CEQA Guidelines CCR Section 15380. Rather, CNPS designations are considered along with other available information about the status, threats, and population condition of plant species to determine whether a species warrants evaluation as an endangered, rare, or threatened species under CEQA. Plants on Lists 1A, 1B, and 2 of the CNPS Inventory may qualify for listing, and DFG recommends—and local governments may require—that these species be addressed during CEQA review of proposed projects. However, a plant species need not be in the CNPS Inventory to be considered a rare, threatened, or endangered species under CEQA.

The term California species of special concern is applied by DFG to animals not listed under the Federal ESA or the CESA, but that are nonetheless declining at a rate that could result in listing, or historically occurred in low numbers and known threats to their persistence currently exist. DFG's fully protected status was California's first attempt to identify and protect animals that were rare or facing extinction. Most species listed as fully protected were eventually listed as threatened or endangered under CESA, however some species remain listed as fully protected but do not have simultaneous listing under CESA. Fully protected species may not be taken or possessed at any time and no take permits can be issued for these species except for scientific research purposes or for relocation to protect livestock.

Tables 3A.3-1 and 3A.3-2 below provide lists of special-status species known to occur or with potential to occur in the SPA. These lists were developed through review of biological studies previously conducted in the SPA and in the vicinity, as listed previously in this section. The CNDDB (CNDDB 2008) and CNPS Inventory of Rare and Endangered Plants (CNPS 2008) were also reviewed for specific information on previously documented occurrences of special-status species in the Folsom and eight surrounding U.S. Geological Survey (USGS) quadrangles. Exhibit 3A.3-2 shows all of the CNDDB occurrences within a five-mile radius of the SPA.

Table 3A.3-1
Special-Status Plant Species Known to Occur or with Potential to Occur in the SPA

Species	Status [1]			Habitat and Blooming Period	Potential for Occurrence [2]
	USFWS	DFG	CNPS Other		
Big scale balsamroot *Balsamorhiza macrolepis* var. *macrolepis*	–	–	1B.2	Chaparral, cismontane woodland, and valley and foothill grassland, often on serpentinite soils; 295 to 4,600 foot elevation; blooms March–June.	Could occur in grassland and oak woodland in the SPA. However, the probability of occurrence is low because, although not restricted to serpentinite soils, this species is usually (65 to 74% of the time) found on serpentinite soils, which are not present in the SPA.
Brandegee's clarkia *Clarkia biloba* ssp. *brandegeae*	–	–	1B.2	Chaparral and cismontane woodland, often in roadcuts; 240 to 3,000 foot elevation; blooms May–July.	Could occur in the blue oak woodland community.
Hispid bird's beak *Cordylanthus mollis* ssp. *hispidus*	–	–	1B.1	Alkaline meadows, seeps, and playas; below 500 foot elevation; blooms June–September.	Unlikely to occur; no suitable habitat is present.
Dwarf downingia *Downingia pusilla*	–	–	2.2	Vernal pools or other seasonal wetlands in annual grasslands; below 1,500 foot elevation; blooms March–May.	Could occur in seasonal wetlands, vernal pools, and swales in the SPA.
Tuolumne button-celery *Eryngium pinnatisectum*	–	–	1B.2	Vernal pools or other seasonal wetlands in cismontane woodland and lower montane coniferous forest; 200 to 3,000 foot elevation; blooms June–August.	Could occur in on-site vernal pools and seasonal wetlands in the SPA.
Bogg's Lake hedge hyssop *Gratiola heterosepala*	–	E	1B.2	Lake margin marshes and swamps, vernal pools, and other seasonal wetlands, primarily in clay soils; 30 to 8,000 foot elevation; blooms April–August.	Likely to occur in vernal pools or other seasonal wetlands in the SPA. Known occurrences immediately adjacent to the SPA on west side of Prairie City Road very near the proposed off-site detention basin location.
Ahart's dwarf rush *Juncus leiospermus* var. *ahartii*	–	–	1B.2	Vernal pools and swales in areas of low cover of competing vegetation; most often on gopher turnings along margins of pools (Witham 2006:38); 95 to 750 foot elevation; blooms March–May.	Could occur in vernal pools and swales in the SPA.
Red Bluff dwarf rush *Juncus leiospermus* var. *leiospermus*	–	–	1B.1	Vernal pools, meadows and seeps, and other seasonally wet habitats; 115 to 3,500 foot elevation; blooms March–May.	Unlikely to occur; the nearest record of this species is from Roseville and is probably erroneous (CNDDB 2008). Sacramento and El Dorado Counties are outside the known range of this species.

Table 3A.3-1
Special-Status Plant Species Known to Occur or with Potential to Occur in the SPA

Species	Status [1]			Habitat and Blooming Period	Potential for Occurrence [2]
	USFWS	DFG	CNPS Other		
Greene's legenere *Legenere limosa*	–	–	1B.1	Relatively deep and wet vernal pools (Witham 2006:39); below 3,000 foot elevation. Blooms April–June.	Could occur in vernal pools in the SPA.
Pincushion navarretia *Navarretia meyersii* ssp. *Meyersii*	–	–	1B.1	Vernal pools; 65 to 750 foot elevation; blooms in May.	Could occur in vernal pools in the SPA.
Slender Orcutt grass *Orcuttia tenuis*	T	E	1B.1	Vernal pools; 100 to 5,800 foot elevation; blooms May–October.	Could occur in vernal pools in the SPA.
Sacramento Orcutt grass *Orcuttia viscida*	E	E	1B.1	Vernal pools; 95 to 325 foot elevation; blooms April–July.	Could occur in vernal pools in the SPA.
Sanford's arrowhead *Sagittaria sanfordii*	–	–	1B.2	Shallow freshwater marshes and swamps; below 2,200 foot elevation; blooms May–October.	Likely to occur in ponds, drainages, or other wetlands in the SPA that support freshwater marsh vegetation. Documented CNDDB occurrence boundary overlaps SPA boundary along Grant Line Road.

Notes: USFWS = U.S. Fish and Wildlife Service; DFG = California Department of Fish and Game; CNPS = California Native Plant Society; CNDDB = California Natural Diversity Database; ESA = Federal Endangered Species Act; CESA = California Endangered Species Act

[1] Legal Status Definitions

U.S. Fish and Wildlife Service:
E Endangered (legally protected)
T Threatened (legally protected)

California Department of Fish and Game:
E Endangered (legally protected)

California Native Plant Society Categories:
1B Plant species considered rare or endangered in California and elsewhere (protected under CEQA, but not legally protected under ESA or CESA)
2 Plant species considered rare or endangered in California but more common elsewhere (protected under CEQA, but not legally protected under ESA or CESA)

CNPS Extensions:
.1 Seriously endangered in California (>80% of occurrences are threatened and/or high degree and immediacy of threat)
.2 Fairly endangered in California (20 to 80% of occurrences are threatened)

[2] Potential for Occurrence Definitions

Unlikely to occur: Species is unlikely to be present in the SPA due to poor habitat quality, lack of suitable habitat features, or restricted current distribution of the species.

Could occur: Suitable habitat is available at the SPA; however, there are little to no other indicators that the species might be present.

Likely to occur: Habitat conditions, known occurrences in the project vicinity, or other factors indicate a relatively high likelihood that the species would occur at the SPA.

Sources: CNDDB 2008; CNPS 2008; data compiled by AECOM/AECOM (now AECOM) in 2008

Table 3A.3-2
Special-Status Wildlife with Potential to Occur in the SPA and Off-Site Elements

Species	Listing Status[1]		Habitat	Potential for Occurrence[2]
	Federal	State		
Invertebrates				
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	T/PD	–	Elderberry shrubs below 3,000 feet in elevation, typically in riparian habitats.	Could occur; elderberry shrubs are present in the SPA. Documented CNDDB occurrences within 2 miles of the SPA.
Vernal pool fairy shrimp *Branchinecta lynchi*	T	–	Vernal pools and other seasonal wetlands in valley and foothill grasslands.	Likely to occur in vernal pools on site. Documented CNDDB occurrences in immediate project vicinity (i.e., within 1 mile).
Vernal pool tadpole shrimp *Lepidurus packardi*	E	–	Vernal pools and other seasonal wetlands in valley and foothill grasslands.	Likely to occur in vernal pools on site. Documented CNDDB locations abutting western SPA boundary.
Conservancy fairy shrimp *Branchinecta conservatio*	E	–	Vernal pools and other seasonal wetlands in valley and foothill grasslands.	Could occur; suitable habitat is present in vernal pools on site.
Amphibians and Reptiles				
Western pond turtle *Actinemys marmorata*	–	SC	Forage in ponds, marshes, slow-moving streams, sloughs, and irrigation/drainage ditches; nest in nearby uplands with low, sparse vegetation.	Known to occur. Documented in an on-site pond by ECORP (The Hodgson Company 2007a) and less than 1 mile downstream of the SPA (GenCorp 2007c), within Alder Creek.
California red-legged frog *Rana aurora draytonii*	T	SC	Foothill streams with dense shrubby or emergent riparian vegetation, minimum 11–20 weeks of water for larval development, and upland refugia for aestivation.	Unlikely to occur. Presumed extirpated from the valley floor. Nearest reproducing population is 30 miles east near Pollock Pines.
Western spadefoot *Spea hammondii*	–	SC	Vernal pools and other seasonal ponds with a minimum 3-week inundation period in valley and foothill grasslands.	Could occur; suitable habitat present on site. Nearest documented occurrences are more than 5 miles away in Roseville, Phoenix Park, and Mather Park areas.
Giant garter snake *Thamnophis gigas*	T	T	Slow-moving streams, sloughs, ponds, marshes, inundated floodplains, rice fields, and irrigation/drainage ditches on the Central Valley floor with mud bottoms, earthen banks, emergent vegetation, abundant small aquatic prey and absence or low numbers of large predatory fish. Also require upland refugia not subject to flooding during the snake's inactive season.	Unlikely to occur; suitable habitat absent on SPA and associated off-site areas evaluated in this EIR/EIS.

Table 3A.3-2
Special-Status Wildlife with Potential to Occur in the SPA and Off-Site Elements

Species	Listing Status[1]		Habitat	Potential for Occurrence[2]
	Federal	State		
California tiger salamander *Ambystoma californiense*	T	C	Vernal pools and seasonal wetlands with a minimum 10-week inundation period and surrounding uplands, primarily grasslands, with burrows and other belowground refugia (e.g., rock or soil crevices).	Unlikely to occur. Nearest known occurrence is 15 miles to the south and extensive surveys in the project vicinity have not detected the species north of the Cosumnes River (USFWS 2004).
Birds				
Tricolored blackbird *Agelaius tricolor* (nesting colony)	–	SC	Forages in agricultural lands and grasslands; nests in marshes, riparian scrub, and other areas that support cattails or dense thickets of shrubs or herbs.	Could nest on site; suitable marsh and blackberry bramble habitats for nesting and grassland foraging habitat is present and species has been documented at 4 locations within 5 miles of the SPA.
Grasshopper sparrow *Ammodramus savannarum* (nesting)	–	SC	Nests and forages in dense grasslands; favors a mix of native grasses, forbs, and scattered shrubs.	Could nest in grassland communities in the SPA, especially within valley needlegrass grassland if present.
Golden eagle *Aquila chrysaetos*	–	FP	Forages in large open areas of foothill shrub and grassland habitats and occasionally croplands. Does not nest in the Central Valley.	Unlikely to nest on site; migrating and nonbreeding individuals could forage in the grasslands on site.
Burrowing owl *Athene cunicularia* (burrow sites)	–	SC	Nests and forages in grasslands, agricultural lands, open shrublands, and open woodlands with existing ground squirrel burrows or friable soils.	Known to occur in grasslands on site; winter foraging documented by Foothill Associates (MJM Properties 2006b). Likely to nest on site; suitable nesting and foraging habitat present.
Swainson's hawk *Buteo swainsoni* (nesting)	–	T	Forages in grasslands and agricultural lands; nests in riparian and isolated trees.	Likely to nest on site; suitable nesting and foraging habitat present.
Northern harrier *Circus cyaneus* (nesting)	–	SC	Nests and forages in grasslands, agricultural fields, and marshes.	Known to occur; winter foraging documented by Foothill Associates (MJM Properties 2006b). Likely to nest on site; suitable nesting and foraging habitat present.
White-tailed kite *Elanus leucurus* (nesting)	–	FP	Forages in grasslands and agricultural fields; nests in riparian zones, oak woodlands, and isolated trees.	Likely to nest on site; suitable grassland foraging habitat and suitable nest trees present in blue oak woodland and riparian areas. Several CNDDB-documented nest sites in project vicinity.
Southern bald eagle *Haliaeetus leucocephalus leucocephalus* (nesting and wintering)	D	E	Forage primarily in large inland fish-bearing waters with adjacent large trees or snags; occasionally in uplands with abundant rabbits, other small mammals, or carrion. Often roosts communally in winter.	Unlikely to occur: foraging habitat is marginal, and the species does not nest on the Central Valley floor. However, could be a rare and irregular foraging visitor.

Table 3A.3-2
Special-Status Wildlife with Potential to Occur in the SPA and Off-Site Elements

Species	Listing Status[1]		Habitat	Potential for Occurrence[2]
	Federal	State		
Loggerhead shrike *Lanius ludovicianus* (nesting)	–	SC	Forages and nests in grasslands, shrublands, and open woodlands.	Likely to nest on site; suitable foraging and nesting habitat present on the site. Foraging documented adjacent to SPA along Alder Creek by Matus 1981.
California black rail *Laterallis jamaicensis coturniculus* (year round)	–	T	Freshwater marshes, wet meadows, and shallow margins of saltwater marshes. Requires consistent water depth of 1 inch and dense vegetation to nest.	Unlikely to occur; nearest known occurrence was documented in Clover Valley, Placer County in 2006 and was a southern range extension. Specific microhabitat conditions for nesting not present on site.
Modesto song sparrow (*Melospiza melodia*) (year round)		SC	Nests and forages primarily in emergent marsh, riparian scrub, and early successional riparian forest habitats in the north-central portion of the Central Valley; infrequently in mature riparian forest and sparsely vegetated ditches and levees.	Could occur; potentially suitable nesting habitat present along Alder Creek and a few other on-site wetlands. However, the SPA is on the fringes of the geographic range, and there is scientific uncertainty as to whether song sparrows in eastern Sacramento County above 200 feet in elevation are of the Modesto form (Grinnell and Miller 1944, Shuford and Gardali 2008:400-402).
Purple martin *Progne subis* (nesting)	–	SC	Nests in tree cavities, bridges, utility poles, lava tubes, and buildings. Forages in foothill and low montane oak and riparian woodlands; less frequently in coniferous forests and open or developed habitats.	Unlikely to nest on site. Only known breeding colonies in the region are in the City of Sacramento where they nest in hollow-box bridges (Shuford and Gardali 2008:332-334) and in a highway overpass in the City of Rocklin.
Bank swallow *Riparia riparia* (nesting)	–	T	Nests in colonies in unvegetated vertical banks with fine-textured, sandy soils, typically next to streams, rivers, or lakes, occasionally in gravel quarries or other eroding bluffs. Forages in a variety of habitats near nests.	Unlikely to occur due to lack of suitable habitat. On-site creek banks are sloping and vegetated.
Mammals				
Pallid bat *Anthrozous pallidus*	–	SC	Deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats. Roosts in rock crevices, oak hollows, bridges, or buildings.	Could occur on site; potentially suitable roosting habitat in oak trees and mine shaft.
Ringtail *Bassariscus astutus*	–	FP	Large acreages of oak woodland, riparian and other dense brush habitats with rock recesses or hollow snags for cover.	Unlikely to occur on site due to marginal habitat quality, open understory, proximity to urban Folsom, and lack of connectivity to other riparian forest or oak woodland habitats.

Table 3A.3-2
Special-Status Wildlife with Potential to Occur in the SPA and Off-Site Elements

Species	Listing Status[1]		Habitat	Potential for Occurrence[2]
	Federal	State		
Townsend's big-eared bat *Corynorhinus townsendii*	–	SC	Typically roosts in caves; however, colonies of <100 individuals occasionally nest in buildings or bridges. Forages in all habitats except alpine and subalpine, though most commonly in mesic forests and woodlands.	Could occur on site; potentially suitable roosting habitat in oak trees and mine shaft.
Western mastiff bat *Eumops perotis californicus*	–	SC	Typically roosts in high cliffs and rock crevices in small colonies of <100 individuals. Forages in a variety of grassland, shrub and wooded habitats including riparian and urban areas, though most commonly in open, arid lands.	Could forage on site; site unlikely to provide suitable roosting habitat.
Western red bat *Lasiurus blossevilli*	–	SC	Roosts primarily in tree foliage, especially in cottonwood, sycamore, and other riparian trees or orchards (Pierson et al. 2004). Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging, including grasslands, shrublands, and open woodlands.	Could forage on site; unlikely roost on site due to lack of riparian woodland.
American badger *Taxidea taxus*	–	SC	Drier open shrub, forest, and herbaceous habitats with friable soils.	Could occur; suitable habitat present. Documented adjacent to the SPA by Matus 1981. Nearest CNNDB occurrence (1990) is 10 miles to the southwest in Rancho Cordova.

Note: CNDDB = California Natural Diversity Database; USFWS = U.S. Fish and Wildlife Service

[1] Legal Status Definitions

Federal:	State:
PD Proposed for Delisting	C Candidate for listing (legally protected)
D Delisted (no ESA protection)	FP Fully protected (legally protected)
E Endangered (legally protected)	SC Species of special concern (no formal protection other than CEQA consideration)
T Threatened (legally protected)	T Threatened (legally protected)

[2] Potential for Occurrence Definitions

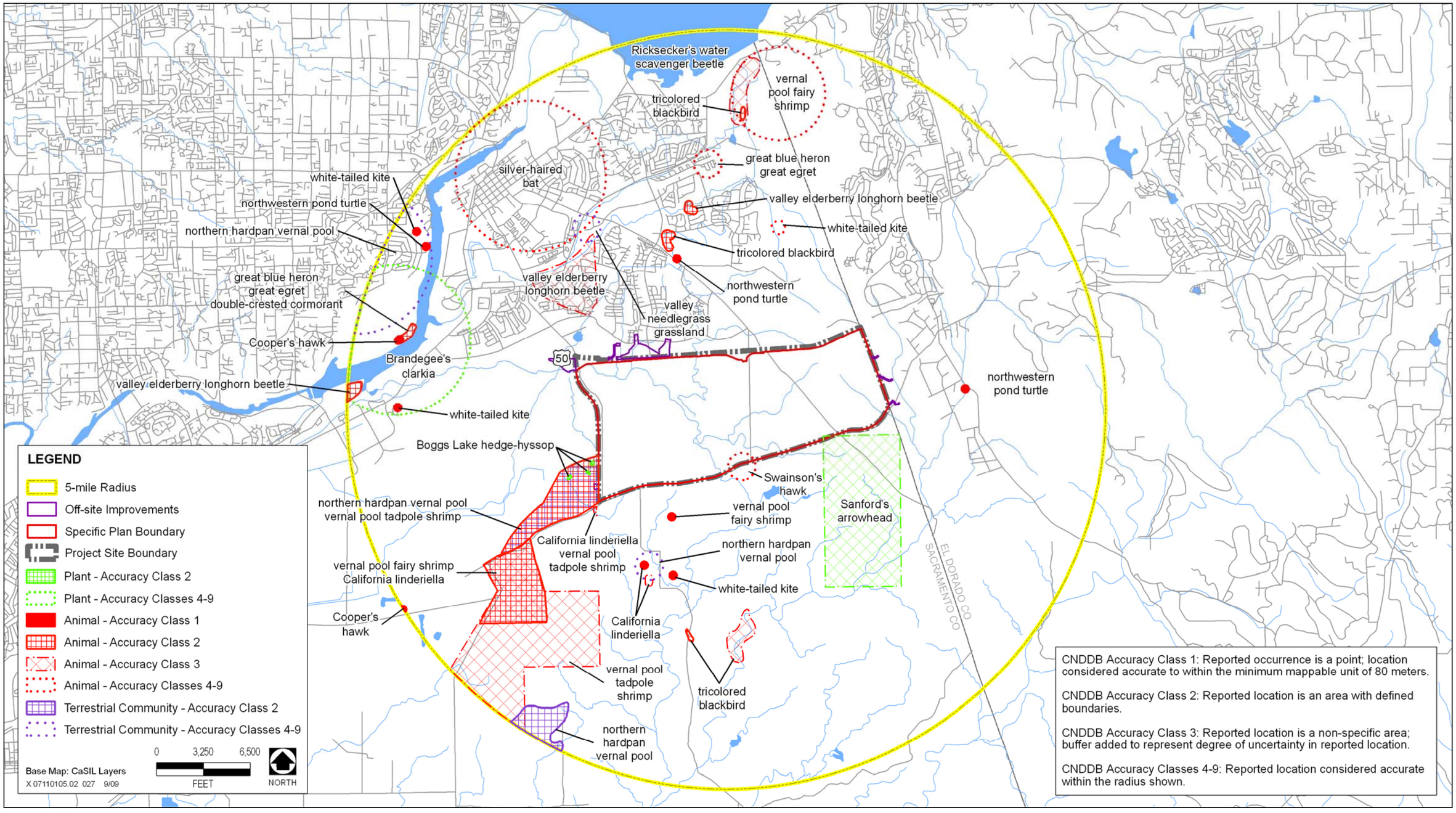
Unlikely to occur: Species is unlikely to be present in the SPA due to poor habitat quality, lack of suitable habitat features, or restricted current distribution of the species.

Could occur: Suitable habitat is available at the SPA; however, there are little to no other indicators that the species might be present.

Likely to occur: Habitat conditions, behavior of the species, known occurrences in the project vicinity, or other factors indicate a relatively high likelihood that the species would occur at the SPA.

Known to occur: The species, or evidence of its presence, was observed at the SPA during reconnaissance surveys, or was reported by others.

Source: CNDDB 2008; Holloway Rassmusson Molondanof 2005; GenCorp 2007a-d; Centex Homes 2006a; Foothill Associates 1998, Woodside Homes 2004; MJM Properties 2006 b and d, 2007; Colliers International 2006; Matus 1981 (cited in GenCorp 2007c); Shuford and Gardali 2008; USFWS 2008; data compiled by AECOM in 2009



Source: CNDDB 2009

CNNDB Occurrences within a Five-Mile Radius of the SPA **Exhibit 3A.3-2**

Special-Status Plants

The CNDDB and CNPS contain records for 22 special-status plant species in the nine quadrangles containing and surrounding the SPA. Based on the habitat and elevation range of the SPA, it was determined that 13 of these species have at least some potential to be present in the SPA (Table 3A.3-1). Two of these 13 species, Bogg's Lake hedge hyssop and Sanford's arrowhead, have a high likelihood of occurring in the SPA because they have been documented immediately adjacent to the site in similar habitats. Bogg's Lake hedge hyssop, a species that is state listed as endangered, has been documented in very close proximity to the proposed off-site detention basin location outside the southwest corner of the SPA. Potentially suitable habitat for Bogg's Lake hedge hyssop is present on the proposed detention basin site and there is high potential for this species to be present. Nine species listed in the CNDDB or CNPS Inventory as occurring in the vicinity of the SPA are not included in Table 3A.3-1 or addressed further in this EIR/EIS because they are restricted to higher elevations or restricted to habitats (e.g., chaparral) or particular soil types (e.g., serpentinite and gabbroic soils) that are not present in the SPA or off-site elements. These species are Stebbins' morning glory (*Calystegia stebbinsii*), Pine Hill Ceanothus (*Ceanothus roderickii*), Red Hills soaproot (*Chlorogalum grandiflorum*), Pine Hill flannelbush (*Fremontodendron decumbens*), El Dorado bedstraw (*Galium californicum* ssp. *sierrae*), Bisbee Peak rush-rose (*Helianthemum suffrutescens*), Layne's ragwort (*Packera layneae*), and El Dorado County mule ears (*Wyethia reticulata*). One other species, Hartweg's golden sunburst (*Pseudobahia bahiifolia*), was documented in the nine quadrangle search area, but the species is not expected to occur in the SPA because there is just one historic record of this species in the area from 1939 in El Dorado County. All other records of this species are from Fresno, Madera, Merced, Stanislaus, and Yuba Counties (Yuba occurrence thought to be extirpated) and so the SPA is outside of the currently known range of this species.

Focused surveys for special-status plant species have been conducted on the Folsom South, Prairie City Business Park, Hillsborough, and Sacramento Country Day School sites and no special-status plant species were found. However, surveys at the Folsom South and Sacramento Country Day School sites did not include big scale balsamroot, Brandegee's clarkia, or Sanford's arrowhead as target species. Big-scale balsamroot has very low potential to occur in grassland and oak woodland habitat in the SPA because serpentine soils are not present and the nearest documented occurrences are more than 10 miles away. The potential for this species cannot be completely ruled out, however, because although big scale balsamroot is most often associated with serpentinite soils, it is not restricted to serpentine and there is potentially suitable habitat present. Species that are weak indicators of serpentine such as narrow leaf soaproot (*Chlorogalum angustifolium*) have been identified in the SPA. Suitable habitat for Brandegee's clarkia is present throughout the SPA and there are documented occurrences in the immediate vicinity. Sanford's arrowhead has been documented immediately adjacent to the SPA and has high potential to be present in on-site ponds or sluggish portions of Alder Creek and its tributaries. Surveys conducted on the Hillsborough and Prairie City Road Business Park sites targeted all of the appropriate species, except big-scale balsamroot, which again has very low potential to grow in the SPA. The remainder of the SPA and off-site elements have not been surveyed for special-status plant species.

Special-Status Wildlife

Special-Status Fish

No special-status fish species are known or have potential to occur within the Alder Creek watershed. Anadromous Chinook salmon (*Oncorhynchus tshawytscha*) and steelhead (*Oncorhynchus mykiss*) use the lower American River below Nimbus Dam for spawning and rearing. Both of these species may have historically used Alder Creek prior to the construction of Nimbus Dam; however, the natural pre-development flow patterns that were more ephemeral and intermittent likely limited habitat values for these species. Potential adverse effects on special-status fish species and fisheries resources off-site are analyzed in Section 3.18, "Water Supply" of this EIR/EIS.

Sensitive Natural Communities

Sensitive natural Communities include those that are of special concern to DFG, or that are afforded specific consideration through CEQA, Section 1602 of the California Fish and Game Code, the Porter-Cologne Water Quality Act, and/or Section 404 of the CWA. Sensitive natural communities may be of special concern to these agencies and to conservation organizations for a variety of reasons, including their locally or regionally declining status, or because they provide important habitat to common and special-status species. Many of these communities are tracked in the CNDDB.

Natural communities present in the SPA that would be considered sensitive by regulatory agencies include vernal pools, seasonal wetland swales, seasonal wetlands, freshwater marsh, seeps, riparian habitats, valley needlegrass grassland, and blue oak woodland.

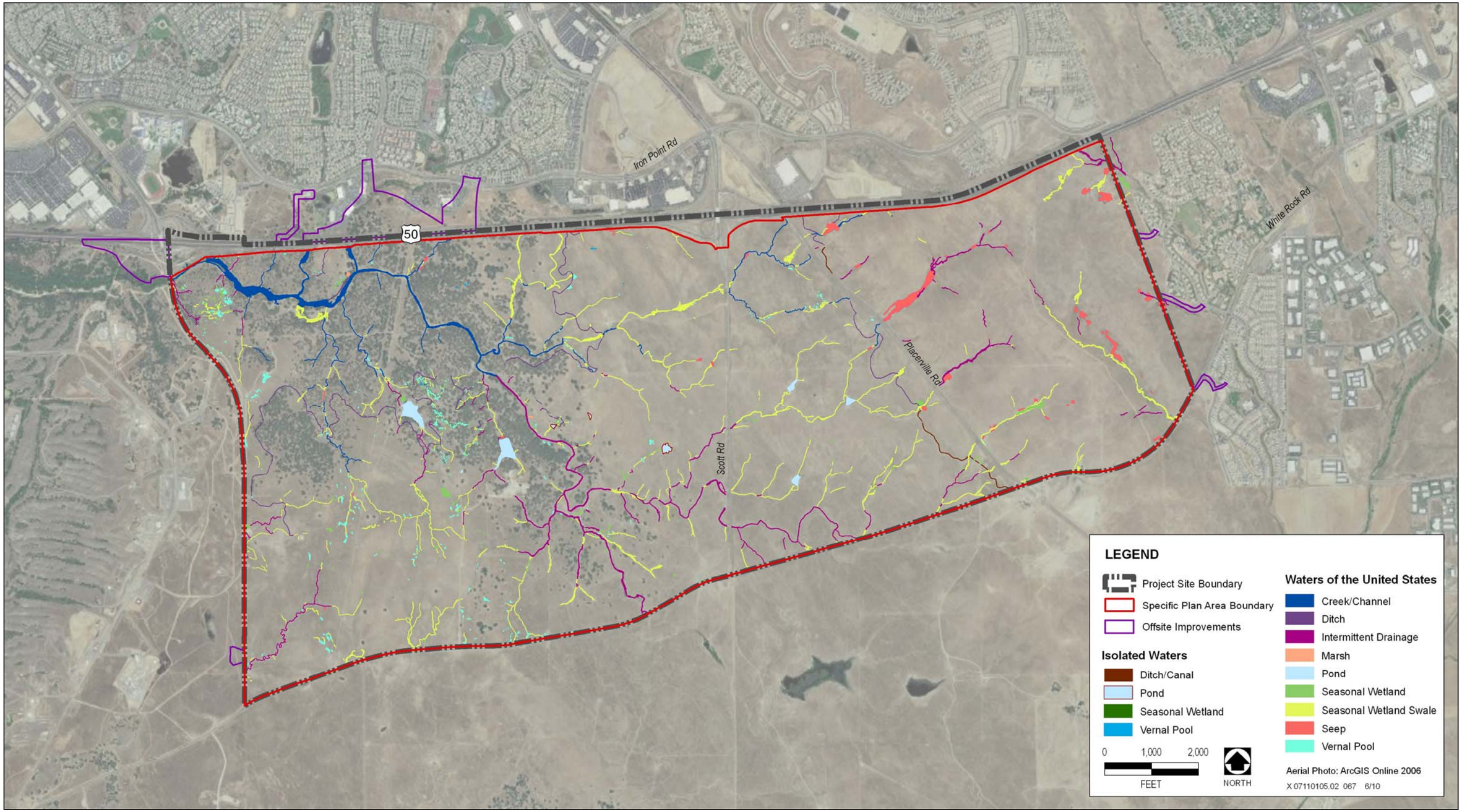
Wetlands and Other Waters of the U.S.

Wetland delineations for the various parcels contained within the SPA have been conducted by ECORP, EDAW/AECOM (now AECOM), Foothill Associates, and Gibson and Skordal between June 2005 and May 2007. The delineations covered the SPA in its entirety and all of them were conducted according to the methods identified in the U.S. Army Corps of Engineers (USACE) 1987 wetlands delineation manual (Environmental Laboratory 1987). The Javanifard and Zhargami parcel and the Folsom 138 property were delineated using the 1987 delineation manual plus the Interim Arid West Regional Supplement (Environmental Laboratory 2006). All of the wetland delineations have been verified by the USACE. The delineations identified a total of 83.64 acres of waters of the U.S., including wetlands, in the SPA. Waters of the U.S. delineated in the SPA consist of 10.80 acres of seeps, 4.64 acres of vernal pools, 4.66 acres of seasonal wetlands, 25.48 acres of seasonal wetland swales, 17.19 acres of perennial stream channels (including Alder Creek), 11.72 acres of intermittent stream channels, 0.11 acre of willow scrub, 1.96 acres of ditches, 0.21 acre of freshwater marsh, and 6.87 acres of ponds.

The SPA also contains 0.03 acre of isolated vernal pool, 0.004 acre of isolated seasonal wetland, 0.40 acre of ditch, and 0.85 acre of pond, which USACE determined to be nonnavigable, isolated, and intrastate waters with no apparent interstate commerce connection and therefore not at this time considered jurisdictional waters of the U.S. (non-jurisdictional). Although these aquatic features are not subject to USACE jurisdiction under Section 404 of the CWA, they may be considered waters of the state under California's Porter-Cologne Act, and therefore subject to regulation by the Central Valley Regional Water Quality Control Board (RWQCB). The locations and extent of wetlands and other waters of the U.S., as mapped by the biological consultants, are shown in Exhibit 3A.3-3.

Wetlands and other waters of the U.S. in the SPA, as well as waters of the state, provide important ecological functions within the watershed. Wetland functions are processes or services that take place in a wetland and they fall into the broad categories of habitat, hydrologic, and water quality functions. Habitat functions are those services that benefit wildlife and include providing food, shelter, water, and breeding grounds. Hydrologic functions of the wetlands and other waters in the SPA include groundwater recharge and moderation of discharge, water storage, and reduction of flow velocity. Water quality functions include nutrient cycling, removal of nutrients and compounds, and trapping sediment. Many wetland functions are interdependent and if one function becomes impaired, it can adversely affect other wetland functions.

In addition to waters of the U.S. in the SPA, it is estimated that the Off-site Elements (i.e., Prairie City Road, Oak Avenue, and Empire Ranch Interchanges, improvements to Prairie City and White Rock Roads, and an off-site detention basin) support approximately 5.85 acres of waters of the U.S. consisting of 0.59 acre of vernal pools, 0.25 acre of seasonal wetlands, 0.55 acre of seasonal wetland swales, 1.94 acres of freshwater marsh, 0.04 acre of intermittent drainage channels, 0.01 acre of ditch, and 2.47 acres of perennial stream channel. The wetlands and other waters within these off-site elements have not yet been delineated according to USACE methodology, so these numbers are approximate and have not been verified by USACE. An estimated 0.47 acre



Source: ECORP 2008, RRM Design Group 2008

Wetlands and Other Waters of the United States **Exhibit 3A.3-3**

of waters of the U.S. consisting of 0.003 acre vernal pool, 0.24 acre seasonal wetland, 0.14 acre intermittent drainage, and 0.09 acre freshwater marsh are present adjacent to a proposed off-site road extending from the eastern SPA boundary and connecting to Stonebriar Drive in El Dorado County (Road Connection No. 2). These features range from 10 to 70 feet in distance from the proposed road footprint. Waters of the U.S. within the location of road connections to El Dorado County were delineated according to USACE methodology, but these delineations have not been verified by USACE. Waters of the U.S. were not identified within the remaining Off-site Element locations (i.e., Rowberry Drive Overcrossing, sewer force main, and Road Connection No. 1 to El Dorado County).

3A.3.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Federal Endangered Species Act

USFWS and the National Marine Fisheries Service have authority over projects that may result in take of a species listed as threatened or endangered under ESA (i.e., a Federally listed species). In general, persons subject to ESA (including private parties) are prohibited from "taking" endangered or threatened fish and wildlife species on private property, and from "taking" endangered or threatened plants in areas under Federal jurisdiction or in violation of state law. Under ESA, the definition of "take" is to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." USFWS has also interpreted the definition of "harm" to include significant habitat modification that could result in take. If a proposed project would result in take of a Federally listed species, the project applicant must acquire either an incidental-take permit, under Section 10(a) of ESA, or a Federal interagency consultation, under Section 7 of ESA before the take occurs. Such a permit typically requires various types of mitigation to compensate for or minimize the take.

Section 404 of the Clean Water Act

Section 404 of the Federal CWA requires a project applicant to obtain a permit before engaging in any activity that involves any discharge of dredged or fill material into waters of the U.S., including wetlands. Fill material is material placed in waters of the U.S. where the material has the effect of replacing any portion of a water of the United States with dry land, or changing the bottom elevation of any portion of a water of the United States. Waters of the U.S. include navigable waters of the U.S.; interstate waters; all other waters where the use, degradation, or destruction of the waters could affect interstate or foreign commerce; tributaries to any of these waters, and wetlands adjacent to these waters. Wetlands are defined as those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Potentially jurisdictional wetlands must meet three wetland delineation criteria: hydrophytic vegetation, hydric soil types, and wetland hydrology. Wetlands that meet the delineation criteria may be jurisdictional under Section 404 of CWA pending USACE and U.S. Environmental Protection Agency (EPA) review.

As part of the review of a project, USACE must ensure compliance with applicable Federal laws, including EPA's Section 404(b)(1) Guidelines, which are described in Chapter 2, "Alternatives," Section 2.2.2. USACE regulations require that impacts to waters of the U.S. are avoided and minimized to the maximum extent practicable, and that unavoidable impacts are compensated (33 CFR 320.4[r]).

In 2008, USACE and EPA issued regulations governing compensatory mitigation for activities authorized by permits issued by USACE (33 CFR 332). The rule establishes a preference for the use of mitigation banks because they provide established wetland habitats that have already met success criteria thereby reducing some of the risks and uncertainties associated with compensatory mitigation involving creation of new wetlands that cannot yet demonstrate functionality at the time of project implementation. The rule also establishes a preference for providing compensatory mitigation within the affected watershed. Ideally, compensatory mitigation would

take place at a mitigation bank within the same watershed as the waters to be replaced. If mitigation banks are not available within the affected watershed, then compensatory mitigation involving creation or restoration within the affected watershed may be preferable to using a mitigation bank outside the affected watershed.

Section 401 Water Quality Certification

Under Section 401 of the CWA, an applicant for a Section 404 permit must obtain a certificate from the appropriate state agency stating that the intended dredging or filling activity is consistent with the state's water quality standards and criteria. In California, the authority to grant water quality certification is delegated by the State Water Resources Control Board to the nine RWQCBs.

Wetland Conservation Provision (Swampbuster) of the Food Securities Act

The Wetland Conservation provision of the 1985 and 1990 farm bills requires all agricultural producers to protect wetlands on the farms they own or operate to be eligible for U.S. Department of Agriculture (USDA) farm program benefits. Producers will not be eligible if they plant an agricultural commodity on a wetland converted by drainage, leveling, or any other means after December 23, 1985, or convert a wetland for the purpose of or to make agricultural production possible after November 28, 1990. The Natural Resources Conservation Service (NRCS) is the lead Federal agency responsible for wetland delineations on agricultural land for both Swampbuster and Section 404. Generally, areas subject to regulation under Swampbuster and Section 404 are the same, but some activities that are exempt under Swampbuster may require permitting under Section 404. Many ongoing, normal farming activities, such as plowing, harvesting, seeding, and construction and maintenance of irrigation ditches, stock ponds, and farm roads are exempt from Section 404 of the CWA under the condition they would not result in bringing a wetland into agricultural production or converting an agricultural wetland to a non wetland area. Farmers are required to contact either NRCS or USACE before conducting any activities that could affect wetlands to verify applicability of exemptions and determine if permits are needed.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA), first enacted in 1918, provides for protection of international migratory birds and authorizes the Secretary of the Interior to regulate the taking of migratory birds. The MBTA provides that it shall be unlawful, except as permitted by regulations, to pursue, take, or kill any migratory bird, or any part, nest, or egg of any such bird. The current list of species protected by the MBTA can be found in Title 50 of the Code of Federal Regulations (CFR), Section 10.13 (50 CFR 10.13). The list includes nearly all birds native to the United States.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

California Endangered Species Act

The California Endangered Species Act (CESA) directs state agencies not to approve projects that would jeopardize the continued existence of an endangered or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of a species. Furthermore, CESA states that reasonable and prudent alternatives shall be developed by DFG, together with the project proponent and any state lead agency, consistent with conserving the species, while at the same time maintaining the project purpose to the greatest extent possible. A "take" of a species, under CESA, is defined as an activity that would directly or indirectly kill an individual of a species. The CESA definition of take does not include "harm" or "harass" as is included in the Federal act. As a result, the threshold for a take under CESA may be higher than under ESA because habitat modification is not necessarily considered take under CESA.

California Public Resources Code Section 21083.4 (Oak Woodlands)

Section 21083.4 of the California Public Resources Code requires counties to determine if a project within their jurisdiction may result in conversion of oak woodlands that would have a significant adverse effect on the environment. If the lead agency determines that a project would result in a significant adverse effect on oak woodlands, mitigation measures to reduce the significant adverse effect of converting oak woodlands to other land uses are required.

Section 1602 of the California Fish and Game Code

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources are subject to regulation by DFG under Section 1602 of the California Fish and Game Code. Under Section 1602, it is unlawful for any person to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by DFG, or use any material from the streambeds, without first notifying DFG of such activity and obtaining a final agreement authorizing such activity. "Stream" is defined as a body of water that flows at least periodically or intermittently through a bed or channel having banks and that supports fish or other aquatic life. DFG's jurisdiction within altered or artificial waterways is based on the value of those waterways to fish and wildlife. A DFG streambed alteration agreement must be obtained for any project that would result in an impact on a river, stream, or lake.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act requires that each of the nine RWQCBs prepare and periodically update basin plans for water quality control. Each basin plan sets forth water quality standards for surface water and groundwater and actions to control nonpoint and point sources of pollution to achieve and maintain these standards. Basin plans offer an opportunity to protect wetlands through the establishment of water quality objectives. The RWQCB's jurisdiction includes Federally protected waters as well as areas that meet the definition of "waters of the state." Waters of the state is defined as any surface water or groundwater, including saline waters, within the boundaries of the state. The RWQCB has the discretion to take jurisdiction over areas not Federally protected under Section 401 provided they meet the definition of waters of the state. Mitigation requiring no net loss of wetlands functions and values of waters of the state is typically required by the RWQCB.

California Fish and Game Code Section 3503.5 (Protection of Raptors)

Section 3503.5 of the California Fish and Game Code states that it is unlawful to take, possess, or destroy any raptors (i.e., species in the orders Falconiformes and Strigiformes), including their nests or eggs. Typical violations include destruction of active raptor nests as a result of tree removal and failure of nesting attempts, resulting in loss of eggs and/or young, because of disturbance of nesting pairs by nearby human activity.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

Sacramento County Policies and Ordinances

The following goals and policies of the Sacramento County General Plan (1993) are applicable only to the off-site detention basin east of Prairie City Road under all five action alternatives because the SPA would be annexed into the City of Folsom and would no longer be under Sacramento County jurisdiction if any of the action alternatives were implemented. There are no Sacramento County goals and policies that are applicable to the No Project Alternative because the SPA would continue to be used for cattle grazing and no development requiring County permits would take place.

Conservation Element

- **Policy CO-62.** Ensure no net loss of marsh and riparian woodland acreage, functions, and values.

- **Policy CO-83.** Ensure no net loss of vernal pool acreage, functions, and values and mitigate any loss in relation to the values of quality of habitat.

- **Policy CO-84.** Evaluate feasible on-site alternatives in the environmental review process that reduce impacts on vernal pools and provide effective on-site preservation in terms of minimum management requirements, effective size, and evaluation criteria identified in the report "Sacramento County Vernal Pools" (Sacramento County1990).

- **Policy CO-85.** Require in-kind compensation for the type and functional values of vernal pools eliminated by development.

- **Policy CO-86.** When on-site preservation or mitigation is infeasible or undesirable, require off-site mitigation at County-approved mitigation banks within Sacramento County.

- **Policy CO-112.** Channel modifications shall retain marsh and riparian vegetation whenever possible or otherwise recreate the natural stream channel consistent with the ecological integrity of the preexisting stream. Modifications resulting in wetland or riparian loss shall be mitigated.

- **Policy CO-117.** Provide a transition zone adjacent to stream corridors which incorporates:

  1) A buffer zone on each side of the stream, between the outer edge of any existing or planned riparian or wetland vegetation and more intensive uses.

  2) The transition zone for stream corridors shall provide sufficient width to allow a minimum 50 to 150 foot natural buffer, a 20 foot mowed fire break at the outer edge, sufficient additional width to provide for access for channel maintenance and flood control and for planned passive recreation uses.

  3) The width of the natural buffers shall be based on:
     a. quality and quantity of existing and planned habitat,
     b. presence of species as well as species sensitivity to human disturbance,
     c. areas for regeneration of vegetation,
     d. corridor for wildlife habitat linkage,
     e. nature of planned urban uses adjacent to the corridor,
     f. need for community greenways, and
     g. the effective use of active barriers.

  4) The transition zone shall not include containment ponds for other features implementing pollutant discharge requirements.

- **Policy CO-147.** Identify suitable habitat for threatened and endangered species through the Community and Specific Plan process.

- **Policy CO-149.** Acquisition programs for acquiring open space located within natural areas shall, wherever possible, review the significance of obtaining areas known to contain threatened, endangered, and special status species.

- **Policy CO-150.** To the extent feasible, plans for urban development and flood control projects shall incorporate habitat corridors connecting on-site or adjoining areas (if any) not designated for alteration.

Sacramento County Swainson's Hawk Ordinance

Chapter 16.130 of Title 16 of the Sacramento County Code addresses the reduction in Swainson's hawk foraging habitat within unincorporated Sacramento County. Under the County's Swainson's Hawk Mitigation Program, mitigation for impacts over 40 acres can be achieved only by providing replacement habitat. This policy would apply only to the off-site detention basin east of Prairie City Road under all five action alternatives because the SPA would be annexed into the City of Folsom and would no longer be under Sacramento County jurisdiction if any of the action alternatives were implemented. This policy would not be applicable under the No Project Alternative because the SPA would continue to be used for cattle grazing and no development requiring County permits would take place.

Sacramento County Tree Preservation Ordinance

The Sacramento County Tree Preservation Ordinance provides protection for trees meeting the following specifications:

- native oak trees with a diameter at breast height (DBH) of 6 inches or greater;
- heritage oak trees, which are defined as California oak trees with a DBH of 60 inches or greater; and
- street or public trees, which are defined as any tree that is rooted on public property or with one-half of its crown diameter (drip line) overlapping public property; and landmark trees, which are defined as especially prominent or stately trees.

This ordinance would apply only to the off-site detention basin east of Prairie City Road under all five action alternatives because the SPA would be annexed into the City of Folsom and would no longer be under Sacramento County jurisdiction if any of the action alternatives were implemented. This policy would not be applicable under the No Project Alternative because the SPA would continue to be used for cattle grazing and no development requiring County permits would take place.

El Dorado County Policies and Ordinances

The following goals and policies of the El Dorado County General Plan (2004) are applicable only to the two local roadway connections from the Folsom Heights property off-site into El Dorado Hills under the Proposed Project Alternative. There are no El Dorado County goals and policies that are applicable to the No Project Alternative or other four action alternatives because the SPA is not within El Dorado County and the Proposed Project Alternative is the only one that has off-site elements within El Dorado County.

Conservation and Open Space Element

- **Policy 7.3.3.1:** For projects that would result in the discharge of material to or that may affect the function and value of river, stream, lake, pond, or wetland features, the application shall include a delineation of all such features. For wetlands, the delineation shall be conducted using the U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual.
- **Policy 7.3.3.5:** Rivers, streams, lakes and ponds, and wetlands shall be integrated into new development in such a way that they enhance the aesthetic and natural character of the site while disturbance to the resource is avoided or minimized and fragmentation is limited.
- **Policy 7.4.1.5:** Species, habitat, and natural community preservation/conservation strategies shall be prepared to protect special status plant and animal species and natural communities and habitats when discretionary development is proposed on lands with such resources unless it is determined that those resources exist, and either are or can be protected, on public lands or private Natural Resource lands.

- **Policy 7.4.1.6:** All development projects involving discretionary review shall be designed to avoid disturbance or fragmentation of important habitats to the extent reasonably feasible. Where avoidance is not possible, the development shall be required to fully mitigate the effects of important habitat loss and fragmentation. Mitigation shall be defined in the Integrated Natural Resources Management Plan (INRMP).

Folsom Municipal Code Chapter 12.16 – Tree Preservation

Folsom Municipal Code Chapter 12.16 protects native oak trees (i.e., *Quercus lobata*, *Q. douglasii*, *Q. wislizenii*, and hybrids thereof) with a DBH of 6 inches or greater for single trunk trees or an aggregate DBH of 20 inches or greater for multiple trunk trees; landmark trees, heritage trees, and street trees. Landmark trees are trees determined by the city council to be a significant community benefit. Heritage trees are native oak trees with a DBH of 19 inches or greater for single trunk trees or an aggregate DBH of 38 inches or greater for multiple trunk trees. Street tree means any tree growing within the City's tree maintenance strip and contained on the master tree list available from the planning director. Removal of protected trees, as well as disturbances that could result in eventual death, such as trenching, grading, soil compaction, placement of fill, impervious surfaces, irrigation, and landscaping within the drip lines of protected trees requires a tree permit be obtained from the City Planning Director.

City of Folsom General Plan

The following goals and policies of the City of Folsom General Plan (1993) are applicable to the Proposed Project and the other four action alternatives. There are no City of Folsom goals or policies that would apply to the No Project Alternative.

Open Space and Conservation Element

GOAL 25: preserve, acquire, enhance, and maintain the biological resources identified below, wherever feasible, for the use and enjoyment of present and future generations:

- Sensitive habitats including riparian vegetation, vernal pools, remnant valley bunch grasslands (e.g., valley needlegrass grassland), oak savanna and woodlands, freshwater marshlands, and permanent and seasonal wetlands.

- Sensitive wildlife species including tricolored blackbird, Swainson's hawk, tiger salamander, and valley elderberry longhorn beetle.

Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon

The Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon (USFWS 2005) was released by USFWS on December 15, 2005. This plan focuses on 33 species of plants and animals that occur exclusively or primarily within vernal pool ecosystems, including the Federally listed vernal pool fairy shrimp and tadpole shrimp. The plan outlines recovery priorities and provides goals, objectives, strategies, and criteria for recovery. One of the overall objectives of the recovery plan is to promote natural ecosystem processes and functions by protecting and conserving intact vernal pools and vernal pool complexes. Habitat protection under the recovery plan includes the protection of the topographic, geographic, and edaphic features that support hydrologically interconnected systems of vernal pools, swales, and other seasonal wetlands within an upland matrix that together form hydrologically and ecologically functional vernal pool complexes. While not regulatory in nature, the Recovery Plan needs to be taken into consideration when analyzing potential impacts on vernal pools and associated biota to ensure that projects do not prevent or impair the plan's future long term implementation success. It is also used by the USFWS to determine recommendations and requirements during endangered species consultation for vernal pool dependent species.

3A.3.3 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. These thresholds also encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. The Proposed Project or alternatives under consideration were determined to result in a significant impact related to biological resources if they would do any of the following:

- have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by DFG or USFWS;
- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by DFG or USFWS;
- have a substantial adverse effect on Federally protected waters of the U.S., including wetlands, as defined by Section 404 of the CWA through direct removal, filling, hydrological interruption, or other means;
- interfere substantially with the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
- conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan;
- substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or substantially reduce the number or restrict the range of an endangered, rare, or threatened species; or
- result in a conversion of oak woodland that would have a significant effect on the environment.

ANALYSIS METHODOLOGY

This analysis of impacts on biological resources resulting from implementation of the project is based on review of existing biological resources documented on or near the SPA, as listed previously in this section, information obtained from the CNDDB and CNPS databases, and a reconnaissance site visit conducted by EDAW/AECOM (now AECOM) staff on September 26, 2007. All biological resources impacts are analyzed at a program level of detail.

Analysis of impacts for the No Project Alternative is based on proposed land use development under the current Sacramento County General Plan zoning as General Agriculture - 80 acres (AG-80). This land use designation allows farming operations of no less than 80 acres with no more than one residence per 80 acres (for a total of up to 44 residences in the SPA). Compatible uses include dry land grain farming and dry or irrigated pastures, but intensive agriculture such as row crops, tree crops, and dairies are not consistent with this land use designation. Analysis of biological resources impacts for the No Project Alternative are based on the assumption that the SPA would continue to be used primarily as range land, and a Section 404 permit would not be required from USACE. Constraints to other agricultural development in the SPA include shallow soils, unreliable water supply, moderately steep topography, and fair to poor crop yield (Sacramento County 1993).

IMPACT ANALYSIS

Impacts that would occur under each alternative development scenario are identified as follows: NP (No Project), NCP (No USACE Permit), PP (Proposed Project), RIM (Resource Impact Minimization), CD (Centralized Development), and RHD (Reduced Hillside Development). The impacts for each alternative are compared relative to the PP at the end of each impact conclusion (i.e., similar, greater, lesser).

IMPACT 3A.3-1 Loss and Degradation of Waters of the U.S., including Wetlands, and Waters of the State. *Project implementation would result in the placement of fill material into jurisdictional waters of the U.S., including wetlands subject to USACE jurisdiction under the Federal CWA. Wetlands and other waters of the U.S. that would be affected by project implementation include seeps, vernal pools, seasonal wetlands and seasonal wetland swales, drainage channels, ditches, and ponds. Waters of the state would also be filled with project implementation.*

On-Site and Off-Site Elements

NP

Under the No Project Alternative, the SPA would continue to be used for cattle grazing under the existing Sacramento County General Plan designations and zoning, and no off-site water improvements would be constructed. This activity is not expected to result in discharge of fill or dredged materials into waters of the U.S. or the loss of wetlands including vernal pools. No changes in the zoned land use would be expected under the No Project Alternative and site topography would not be altered. Therefore **direct** and **indirect** impacts on waters of the U.S. and waters of the state would be **less than significant**. ***[Lesser]***

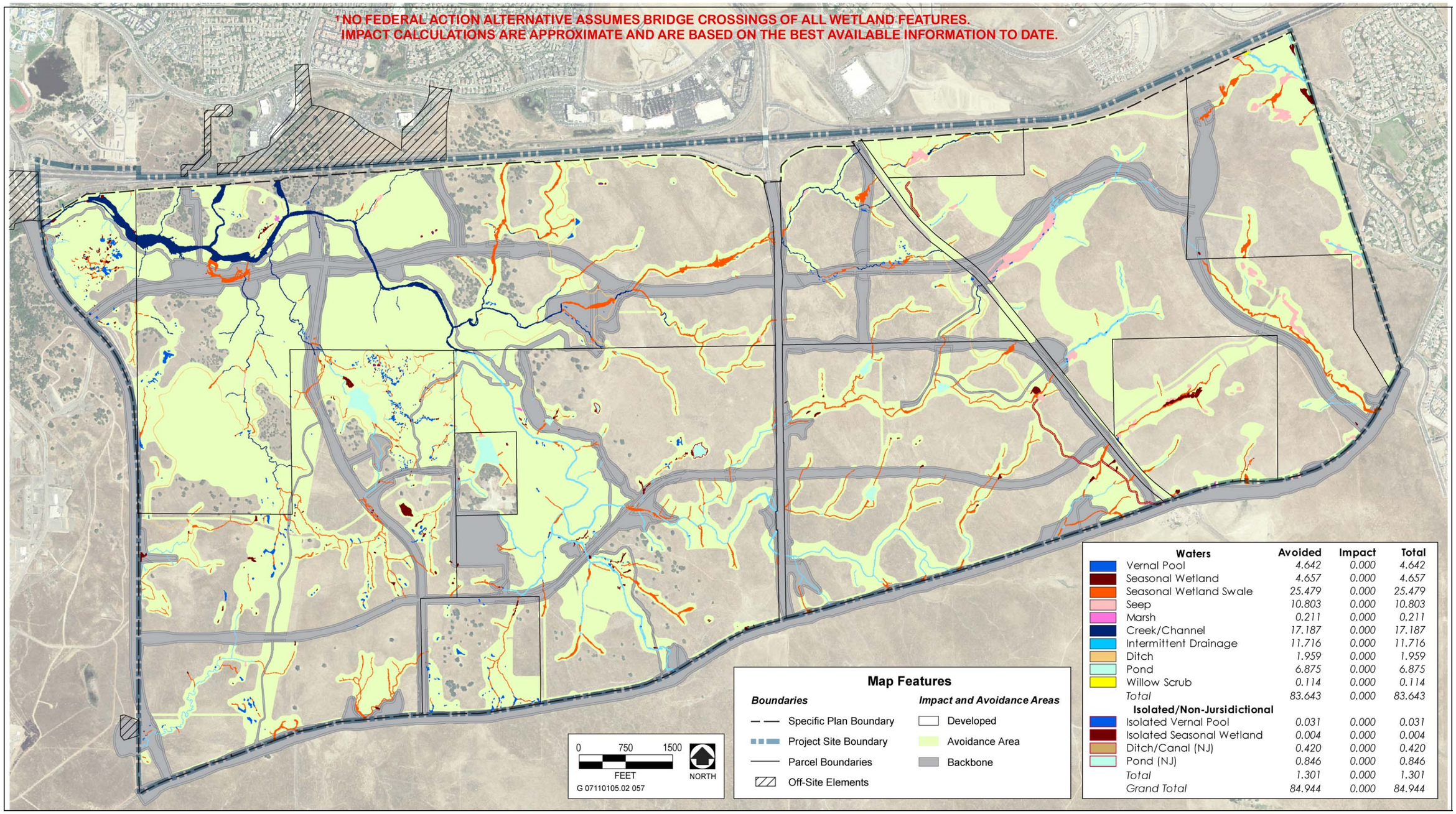
On-Site Elements

NCP

The No USACE Permit Alternative would not result in fill of wetlands or other waters subject to USACE jurisdiction under the CWA. No development would occur within 50 feet of wetland features and free spanning bridges would be constructed wherever roadways cross waters to avoid impacts on these waters. This alternative would designate an additional 456 acres of open space compared to the Proposed Project Alternative. However, mixed use development would still be constructed adjacent to aquatic resources resulting in topographic modifications, creation of impervious surfaces, urban runoff, erosion, and siltation; intrusion of humans and domestic animals; and introduction of invasive plant species that could result in habitat degradation.

Relative to the other project alternatives, excluding the No Project Alternative, the No USACE Permit Alternative would preserve a larger proportion of the wetland and drainage complexes within the SPA, provide a larger buffer to minimize impacts of adjacent land uses, and preserve a greater proportion of upland habitat to support species that use both wetland and upland habitats and provide ecological services to vernal pool species. This alternative would also preserve all of the existing acreage of isolated waters considered waters of the state. Exhibit 3A.3-4 depicts aquatic resources in the SPA relative to the open space areas and impact areas for the No USACE Permit Alternative.

Because this alternative would not result in fill of waters of the U.S., **no direct** impacts would occur. ***[Lesser]*** However, this alternative would still result in substantial changes to site topography and increased impervious surfaces and urban development would still occur. Therefore, **indirect significant** impacts would result, but to a much lesser extent than the Proposed Project Alternative. ***[Lesser]***



Source: ECORP 2009

Aquatic Resources and Open Space Areas Under the No USACE Permit Alternative **Exhibit 3A.3-4**

Mitigation Measure 3A.3-1a: Design Stormwater Drainage Plans and Erosion and Sediment Control Plans to Avoid and Minimize Erosion and Runoff to All Wetlands and Other Waters That Are to Remain in the SPA and Use Low Impact Development Features.

To minimize indirect effects on water quality and wetland hydrology, the project applicant(s) of all project phases shall include stormwater drainage plans and erosion and sediment control plans in their improvement plans and shall submit these plans to the City Public Works Department for review and approval. For off-site elements within Sacramento County or El Dorado County jurisdiction (e.g., off-site detention basin and off-site roadway connections to El Dorado Hills), plans shall be submitted to the appropriate county planning department. Before approval of these improvement plans, the project applicant(s) of all project phases shall obtain a NPDES MS4 Municipal Stormwater Permit and Grading Permit, comply with the City's Grading Ordinance and County drainage and stormwater quality standards, and commit to implementing all measures in their drainage plans and erosion and sediment control plans to avoid and minimize erosion and runoff into Alder Creek and all wetlands and other waters that would remain on-site. Detailed information about stormwater runoff standards and relevant City and County regulation is provided in Chapter 3A.9, "Hydrology and Water Quality."

The project applicant(s) of all project phases shall implement stormwater quality treatment controls consistent with the *Stormwater Quality Design Manual for Sacramento and South Placer Regions* (Sacramento Stormwater Quality Control Partnership 2007). Appropriate runoff controls such as berms, storm gates, off-stream detention basins, overflow collection areas, filtration systems, and sediment traps shall be implemented to control siltation and the potential discharge of pollutants. Development plans shall incorporate Low Impact Development (LID) features, such as pervious strips, permeable pavements, bioretention ponds, vegetated swales, disconnected rain gutter downspouts, and rain gardens, where appropriate. Use of LID features is recommended by the EPA to minimize impacts on water quality, hydrology, and stream geomorphology and is specified as a method for protecting water quality in the proposed specific plan. In addition, free spanning bridge systems shall be used for all roadway crossings over wetlands and other waters that are retained in the on-site open space. These bridge systems would maintain the natural and restored channels of creeks, including the associated wetlands, and would be designed with sufficient span width and depth to provide for wildlife movement along the creek corridors even during high-flow or flood events.

In addition to compliance with City ordinances, the project applicant(s) of all project phases shall obtain a General Construction Stormwater Permit from the Central Valley RWQCB, prepare a Stormwater Pollution Prevention Plan (SWPPP), and implement Best Management Practices (BMPs) to reduce water quality effects during construction. Detailed information about the SWPPP and BMPs are provided in Chapter 3A.9, "Hydrology and Water Quality."

Each project phase shall result in no net change to peak flows into Alder Creek and associated tributaries, or to Buffalo Creek, Carson Creek, and Coyote Creek. The project applicant(s) shall establish a baseline of conditions for drainage on-site. The baseline-flow conditions shall be established for 2-, 5-, 10-, and 20-year storm events. These baseline conditions shall be used to develop monitoring standards for the stormwater system in the SPA. The baseline conditions, monitoring standards, and a monitoring program shall be submitted to USACE and the City for their approval. Water quality and detention basins shall be designed and constructed to ensure that the performance standards, which are described in Chapter 3A.9, "Hydrology and Water Quality," are met and shall be designed as off-stream detention basins. Discharge sites into Alder Creek and associated tributaries, as well as tributaries to Carson Creek, Coyote Creek, and Buffalo Creek, shall be monitored to ensure that preproject conditions are being met. Corrective measures shall be implemented as necessary. The mitigation measures will be satisfied when the monitoring standards are met for 5 consecutive years without undertaking corrective measures to meet the performance standard.

The project applicant(s) shall design a land use plan that moves the proposed on-stream detention basin in the northeast corner of the SPA to a location that is off stream. All water quality and detention basins constructed as part of the project shall be designed and built off stream.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado County for the roadway connections, Sacramento County for the detention basin west of Prairie City Road, and Caltrans for the U.S. 50 interchange improvements).

Implementation: Project applicant(s) of all project phases and on-site and off-site elements.

Timing: Before approval of improvement and drainage plans, and on an ongoing basis throughout and after project construction, as required for all project phases.

Enforcement:

1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Public Works Department.
2. For the two roadway connections in El Dorado Hills: El Dorado County Development Services Department.
3. For the detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.
4. For the U.S. 50 interchange improvements: Caltrans.
5. U.S. Army Corps of Engineers, Sacramento District.
6. Central Valley Regional Water Quality Control Board.

PP

Implementation of the Proposed Project Alternative would result in direct impacts from the loss of waters of the U.S. resulting from the placement of fill material into approximately 39.50 acres of Federally jurisdictional waters of the U.S. on-site, including wetlands. This constitutes 47% of the existing waters of the U.S. present in the SPA. Waters of the U.S. that would be filled consist of 2.92 acres of vernal pools, 3.87 acres of seasonal wetland, 17.63 acres of seasonal wetland swale, 0.07 acre of freshwater marsh, 4.48 acres of freshwater seep, 1.17 acres of pond, 3.38 acres of stream channel, 4.47 acres of intermittent drainage channel, 1.43 acres of ditches, and 0.11 acre of willow scrub. In addition, 1.25 out of 1.30 acres of waters that USACE determined to be non-jurisdictional would also be filled by the Proposed Project Alternative. The non-jurisdictional waters in the SPA consist of 0.03 acre of vernal pool, 0.004 acre of seasonal wetland, 0.42 acre of ditch, and 0.85 acre of pond. Though the placement of fill material into these waters does not require a permit from USACE under Section 404 of the CWA, they are considered waters of the state subject to the jurisdiction of the Central Valley RWQCB under the Porter-Cologne Act. The conversion of these waters of the U.S. to uplands from the placement of fill material would result in a complete loss of the functions of the waters of the U.S. In addition to direct impacts resulting from the placement of fill material into Federally jurisdictional waters of the U.S., the Proposed Project Alternative would also result in indirect impacts to 0.29 acres of waters of the U.S. from fragmentation. This would occur as a result of placing fill material into the upstream and downstream portions of the waters of the U.S. proposed to be placed into the open space preserve, as described below. Because the upstream and downstream portions of these preserved waters of the U.S. would be filled, indirect impacts would occur to 0.17 acre of seasonal wetland swale, 0.016 acre of perennial stream channel, 0.09 acre of intermittent drainage, and 0.012 acre of ditch resulting in a loss of/adverse indirect impacts to the functions of these waters. While fragmented stream channels could function to store surface water, recharge groundwater, and provide some habitat values, they would no longer function to

convey stormwater through the system, transport sediment, reduce flow velocity, and their nutrient cycling and other water quality functions would be diminished. Many of the features that currently convey seasonal flows could become inundated year round when cut off from other drainage channels.

The Proposed Project Alternative includes 1,050 acres of open space designed to preserve approximately 52% of the wetlands and other waters of the U.S. present in the SPA, including most of Alder Creek. Approximately 6.33 acres of freshwater seep, 1.72 acres of vernal pools, 0.78 acre of seasonal wetland, 7.85 acres of seasonal wetland swale, 13.81 acres of perennial stream channel, 7.25 acres of intermittent drainage channel, 0.55 acre of ditches, 0.14 acre of freshwater marsh, and 5.71 acres of ponds would be preserved within the open space areas. Preserved wetlands and other waters within the designated open space areas would be provided a 25-foot buffer where no project-related ground disturbance would occur. Outside of the 25-foot buffer, an additional 50 feet of no development buffer would be established; however, disturbance associated with contour grading, mitigation planting, trails, benches, and other passive recreational amenities may occur in the outer 50 feet of buffer. Exhibit 3A.3-5 depicts aquatic resources in the SPA relative to the open space areas and impact areas for the Proposed Project Alternative. Table 3A.3-3 provides a summary of impacts on wetlands and other waters of the U.S. and preservation under the Proposed Project Alternative development scenario. Table 3A.3-4 provides a side by side comparison of preserved versus affected acreage of wetlands and other waters of the U.S. for each project alternative. The open space design provides a large habitat patch that maintains stream networks and wetland complexes, provides corridors for habitat connectivity both on and off the SPA, and minimizes the perimeter-to-area ratio (i.e., edge effects).

In addition to direct impacts, the Proposed Project Alternative would result in indirect effects on wetlands from increased urbanization and population, including reduction in water quality caused by urban runoff, erosion, and siltation; intrusion of humans and domestic animals; and introduction of invasive plant species that could result in habitat degradation. On-site wetlands and other waters would be indirectly affected by substantial grading and creation of impervious surfaces proposed for adjacent uplands. All portions of the SPA, with the exception of 25-foot buffers around preserved wetlands, would be subject to contour grading, which could affect wetland hydrology and water quality. Overall site topography would be substantially altered to achieve level ground for development. These earthmoving activities and resulting gradient changes across the SPA could alter hydrologic patterns and adversely affect wetlands and drainage channels retained in the SPA, as well as off-site wetlands, by altering hydration periods, peak flows, runoff volumes, and runoff durations. Construction of a 1.4-acre on-site detention basin on an intermittent tributary to Carson Creek on the Folsom Heights site could substantially alter water quality and hydrology of Carson Creek and associated wetlands and other waters of the U.S. Construction of new roadways and roadway improvements associated with development of the backbone infrastructure and the on-stream detention basin could disrupt or eliminate hydrologic connectivity that is important to support wetlands and the plant and wildlife species that inhabit them. Although the main channel of Alder Creek would be retained, many intermittent tributaries and seasonal swales directly connected to Alder Creek would be filled. This could adversely affect the hydrology and water quality of the preserved portions of the creek.

The loss and degradation of USACE jurisdictional vernal pools and other wetland habitats and other waters of the U.S. (e.g., ponds and drainage channels) that would occur with project implementation constitutes a substantial adverse effect on Federally jurisdictional waters of the U.S., including wetlands, as defined by Section 404 of the CWA. Construction of the on-stream detention basin is a significant direct and indirect impact. Removal of 1.25 acres non USACE jurisdictional wetlands in the SPA constitutes an adverse effect on waters of the state subject to Central Valley RWQCB jurisdiction. Therefore, both **direct** and **indirect significant** impacts would occur.

Mitigation Measure: Implement Mitigation Measure 3A.3-1a.

Table 3A.3-3
Summary of Wetland Impacts and Preservation for the Proposed Project Alternative

Habitat Type	Acres Existing	Acres Filled (Direct Impact)	Acres Fragmented (Indirect Impact)	Acres Preserved	Percent Preserved
Waters of the United States (Federally Jurisdictional)					
Seep	10.80	4.48	0.00	6.33	59
Vernal pool	4.64	2.92	0.00	1.72	37
Seasonal wetland	4.66	3.87	0.00	0.78	17
Seasonal swale	25.48	17.63	0.17	7.85	31
Stream channel	17.19	3.38	0.016	13.81	80
Drainage channel	11.72	4.47	0.088	7.25	62
Ditch	1.96	1.40	0.012	0.55	28
Marsh	0.21	0.07	0.00	0.14	67
Ponds	6.87	1.17	0.00	5.71	83
Willow Scrub	0.11	0.11	0.00	0.00	0
Total waters of the United States	83.64	39.50	0.29	44.14	53
Isolated waters	1.30	1.25	0.00	0.05	3
Subtotal	**83.64**	**39.50**		**44.14**	
Waters of the State (Not Federally Jurisdictional)					
Vernal Pool	0.03	0.01	0.00	0.02	
Seasonal Wetland	0.004	0.002	0.00	0.002	
Ditch	0.42	0.39	0.00	0.03	
Pond	0.85	0.85	0.00	0.00	
Subtotal	**1.30**	**1.25**	**0.00**	**0.05**	
Grand Total	**84.94**	**40.75**	**0.287**	**44.19**	**52**

Source: ECORP 2009a

Table 3A.3-4
Summary of Wetland Impacts and Preservation for Each Project Alternative

Alternative	Acres of Impact	Acres Preserved	Percent Preserved
No Project	0.00	83.64	100
Proposed Project	39.50	44.14	53
Resource Impact Minimization	26.47	57.17	68
Centralized Development	37.05	46.59	56
Reduced Hillside Development	42.69	40.95	49
No USACE Permit	0.00	83.64	100

Source: ECORP 2009a

IMPACT CALCULATIONS ARE APPROXIMATE AND ARE BASED ON THE BEST AVAILABLE INFORMATION TO DATE.

Map Features
- Specific Plan Boundary
- Project Site Boundary
- Parcel Boundaries
- Off-Site Elements

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Avoidance and Impact Components
- Developed
- Avoidance Area - Possible Temporary Disturbance
- Wetland Preserve (Avoided)
- Preserve With Grading (Impact)
- 30-foot Impact Buffer (Impact)
- Backbone Infrastructure (Impact)

Waters	Avoided	Impact	Total
Vernal Pool	1.723	2.919	4.642
Seasonal Wetland	0.784	3.873	4.657
Seasonal Wetland Swale	7.847	17.632	25.479
Seep	6.325	4.478	10.803
Marsh	0.142	0.069	0.211
Creek/Channel	13.809	3.378	17.187
Intermittent Drainage	7.252	4.465	11.716
Ditch	0.554	1.405	1.959
Pond	5.708	1.167	6.875
Willow Scrub	0.000	0.114	0.114
Total	44.144	39.499	83.643
Isolated/Non-Jurisdictional (NJ)			
Isolated Vernal Pool	0.019	0.013	0.031
Isolated Seasonal Wetland	0.003	0.002	0.004
Ditch/Canal (NJ)	0.026	0.394	0.420
Pond (NJ)	0.000	0.846	0.846
Total	0.047	1.254	1.301
Grand Total	44.191	40.754	84.944

Source: ECORP 2009

Aquatic Resources and Open Space Areas under the Proposed Project Alternative **Exhibit 3A.3-5**

Mitigation Measure 3A.3-1b: Secure Clean Water Act Section 404 Permit and Implement All Permit Conditions; Ensure No Net Loss of Functions of Wetlands, Other Waters of the U.S., and Waters of the State.

Before the approval of grading and improvement plans and before any groundbreaking activity associated with each distinct project phase, the project applicant(s) of all project phases requiring fill of wetlands or other waters of the U.S. or waters of the state shall obtain all necessary permits under Sections 401 and 404 of the CWA or the state's Porter-Cologne Act for the respective phase. For each respective phase, all permits, regulatory approvals, and permit conditions for effects on wetland habitats shall be secured before implementation of any grading activities within 250 feet of waters of the U.S. or wetland habitats, including waters of the state, that potentially support Federally listed species, or within 100 feet of any other waters of the U.S. or wetland habitats, including waters of the state. The project applicant(s) shall commit to replace, restore, or enhance on a "no net loss" basis (in accordance with USACE and the Central Valley RWQCB) the acreage of all wetlands and other waters of the U.S. that would be removed, lost, and/or degraded with implementation of project plans for that phase. Wetland habitat shall be restored, enhanced, and/or replaced at an acreage and location and by methods agreeable to USACE, the Central Valley RWQCB, and the City, as appropriate, depending on agency jurisdiction, and as determined during the Section 401 and Section 404 permitting processes.

As part of the Section 404 permitting process, a draft wetland mitigation and monitoring plan (MMP) shall be developed for the project on behalf of the project applicant(s). Before any ground-disturbing activities that would adversely affect wetlands and before engaging in mitigation activities associated with each phase of development, the project applicant(s) shall submit the draft wetland MMP to USACE, the Central Valley RWQCB, Sacramento County, El Dorado County, and the City for review and approval of those portions of the plan over which they have jurisdiction. The MMP would have to be finalized prior to issuance of a Section 404 permit. Once the final MMP is approved and implemented, mitigation monitoring shall continue for a minimum of 5 years from completion of mitigation, or human intervention (including recontouring and grading), or until the performance standards identified in the approved MMP have been met, whichever is longer.

As part of the MMP, the project applicant(s) shall prepare and submit plans for the creation of aquatic habitat in order to adequately offset and replace the aquatic functions and services that would be lost at the SPA, account for the temporal loss of habitat, and contain an adequate margin of safety to reflect anticipated success. Restoration of previously altered and degraded wetlands shall be a priority of the MMP for offsetting losses of aquatic functions in the SPA because it is typically easier to achieve functional success in restored wetlands than in those created from uplands. The MMP must demonstrate how the aquatic functions that would be lost through project implementation will be replaced.

The habitat MMP for jurisdictional wetland features shall be consistent with USACE's and EPA's April 10, 2008 *Final Rule for Compensatory Mitigation for Losses of Aquatic Resources* (33 CFR Parts 325 and 332 and 40 CFR Part 230). According to the *Final Rule*, mitigation banks should be given preference over other types of mitigation because a lot of the risk and uncertainty regarding mitigation success is alleviated by the fact that mitigation bank wetlands must be established and demonstrating functionality before credits can be sold. This also alleviates temporal losses of wetland function while compensatory wetlands are being established. Mitigation banks also tend to be on larger, more ecologically valuable parcels and are subjected to more rigorous scientific study and planning and implementation procedures than typical permittee-responsible mitigation sites (USACE and EPA, 2008). However, the *Final Rule* also establishes a preference for compensating losses of aquatic resources within the same watershed as the impact site. The SPA includes portions of the Alder Creek, Buffalo Creek, Coyote Creek, and Carson Creek Watersheds. The majority of the SPA is within the Alder Creek Watershed. Alder Creek and Buffalo Creek are part of the Lower American River Watershed. Carson Creek and Coyote Creek are part of the Cosumnes River Watershed. Mitigation credits may be available within the Cosumnes River Watershed, but not within the American River Watershed and not within the sub-watersheds of the SPA.

Therefore aquatic habitats may need to be restored or created in the SPA and adjacent off-site lands, within the affected watersheds, in order to successfully replace lost functions at the appropriate watershed scale where loss of function would occur. It is not likely feasible to provide compensatory mitigation for all aquatic resource impacts on site. Therefore, a combination of on-site and off-site permittee-responsible mitigation and mitigation banking may be necessary to achieve the no-net-loss standard.

The SPA is located within the service areas of several approved mitigation banks (e.g., Bryte Ranch, Clay Station, Fitzgerald Ranch, and Twin City). The majority of compensatory mitigation for wetland impacts is proposed to be accomplished at an agency-approved mitigation bank authorized to sell credits to offset impacts in the SPA. The applicants' biological consultant, ECORP, has identified availability of approximately 31 vernal pool credits and 228 seasonal wetland credits at mitigation banks whose service area appears to include the SPA. However, the availability of these credits has not been confirmed and availability is subject to change and, as noted above, a combination of mitigation bank credits and permittee-responsible on and off-site mitigation may be necessary to fully offset project impacts on wetlands and other waters of the U.S.

Compensatory mitigation for losses of stream and intermittent drainage channels shall be achieved through in-kind preservation, restoration, or enhancement, as specified in the *Final Rule* guidelines. The wetland MMP shall address how to mitigate impacts on vernal pool, seasonal swale, seasonal wetland, seep, marsh, pond, and intermittent and perennial stream habitat, and shall describe specific method(s) to be implemented to avoid and/or mitigate any off-site project-related impacts. The wetland compensation section of the habitat MMP shall include the following:

- Compensatory mitigation sites and criteria for selecting these mitigation sites. In General, compensatory mitigation sites should meet the following criteria, based on the *Final Rule*;
    - located within the same watershed as the wetland or other waters that would be lost;
    - located in the most likely position to successfully replace wetland functions lost on the impact site considering watershed-scale features such as aquatic habitat diversity, habitat connectivity, available water sources and hydrologic relationships, land use trends, ecological benefits, and compatibility with adjacent land uses
- A complete assessment of the existing biological resources in both the on-site preservation areas and off-site compensatory mitigation areas, including wetland functional assessment using the California Rapid Assessment Method (CRAM) (Collins et al. 2008), to establish baseline conditions;
- Specific creation and restoration plans for each mitigation site;
- In kind reference wetland habitats for comparison with compensatory wetland habitats (using performance and success criteria) to document success;
- Description of methodology used to select reference wetlands for comparison;
- Monitoring protocol, including schedule and annual report requirements, and the following elements:
    - ecological performance standards, based on the best available science, that can be assessed in a practicable manner (e.g., performance standards proposed by Barbour et al. 2007). Performance standards must be based on attributes that are objective and verifiable;
    - CRAM conducted annually for 5 years after construction or restoration of compensatory wetlands to determine whether these areas are acquiring wetland functions and to plot the performance

trajectory of preserved, restored, or created wetlands over time. CRAM scores for compensatory wetlands shall also be compared against scores for reference wetlands assessed in the same year;

- CRAM analysis conducted annually for 5 years after any construction adjacent to wetlands preserved in the SPA to determine whether these areas are retaining wetland functions. CRAM scores for wetlands preserved on site shall also be compared against scores for reference wetlands assessed in the same year;

- analysis of CRAM data, including assessment of potential stressors, to determine whether any remedial activities may be necessary;

- corrective measures if performance standards are not met;

- monitoring of plant communities as performance criteria (annual measure of success, during monitoring period) and success criteria (indicative of achievement of mitigation habitat requirement at end of monitoring period) for hydrologic function have become established and the creation site "matures" over time (the project applicants' biological consultant has developed a draft monitoring methodology and success criteria that are provided in Appendix D);

- GIS analysis of compensatory wetlands to demonstrate actual acreage of functioning wetland habitat;

- adaptive management measures to be applied if performance standards and acreage requirements are not being met;

- responsible parties for monitoring and preparing reports; and

- responsible parties for receiving and reviewing reports and for verifying success or prescribing implementation or corrective actions.

An operations and management plan (OMP) for all on- and off-site wetland preservation and mitigation areas shall be prepared and submitted to USACE and USFWS for review and approval prior to the issuance of any permits under Section 404 of the CWA. The plan shall include detailed information on the habitats present within the preservation and mitigation areas, the long-term management and monitoring of these habitats, legal protection for the preservation and mitigation areas (e.g., conservation easement, declaration of restrictions), and funding mechanism information (e.g., endowment).

USACE has determined that the project will require an individual permit. In its final stage and once approved by USACE, the MMP for the project is expected to detail proposed wetland restoration, enhancement, and/or replacement activities that would ensure no net loss of aquatic functions in the project vicinity. Approval and implementation of the wetland MMP shall aim to fully mitigate all unavoidable impacts on jurisdictional waters of the U.S., including jurisdictional wetlands. In addition to USACE approval, approval by the City, Sacramento County, El Dorado County, and the Central Valley RWQCB, as appropriate depending on agency jurisdiction, and as determined during the Section 401 and Section 404 permitting processes, will also be required. Approvals from Sacramento County and El Dorado County shall be required for impacts resulting from off-site project elements occurring in these counties, such as the off-site detention basin in Sacramento County and the roadway connections into El Dorado County. To satisfy the requirements of the City and the Central Valley RWQCB, mitigation of impacts on the nonjurisdictional wetlands beyond the jurisdiction of USACE shall be included in the same MMP. All mitigation requirements determined through this process shall be implemented before grading plans are approved. The MMP shall be submitted to USACE and approved prior to the issuance of any permits under Section 404 of the CWA.

Water quality certification pursuant to Section 401 of the CWA will be required before issuance of the record of decision and before issuance of a Section 404 permit. Before construction in any areas containing wetland features, the project applicant(s) shall obtain water quality certification for the project. Any measures required as part of the issuance of water quality certification shall be implemented.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., Caltrans, El Dorado and/or Sacramento Counties).

Implementation: Project applicant(s) of all project phases requiring fill of wetlands or other waters of the U.S. or waters of the state.

Timing: Before the approval of grading or improvement plans or any ground-disturbing activities for any project development phase containing wetland features or other waters of the U.S. The MMP must be approved before any impact on wetlands can occur. Mitigation shall be implemented on an ongoing basis throughout and after construction, as required.

Enforcement:

1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For the two roadway connections in El Dorado Hills: El Dorado County Development Services Department.
3. For the detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.
4. For the U.S. 50 interchange improvements: Caltrans.
5. U.S. Army Corps of Engineers, Sacramento District; Central Valley Regional Water Quality Control Board as appropriate depending on agency jurisdiction, and as determined during the Section 401 and Section 404 permitting processes and in compliance with the City's Grading Ordinance (Folsom Municipal Code 14.29), or appropriate county grading ordinance for off-site detention basin and roadway connections from Folsom Heights to El Dorado Hills.

RIM

The Resource Impact Minimization Alternative would preserve 57.17 acres (68%) of wetlands and other waters of the U.S., 13.33 acres more than would be preserved under the Proposed Project Alternative. Approximately 26.47 acres (32%) of on-site wetlands and other waters of the U.S. would be filled under this alternative compared with 39.50 acres under the Proposed Project Alternative. The Resource Impact Minimization Alternative would designate an additional 379 acres of open space, thereby preserving a greater proportion of adjacent upland habitats to provide larger wetland habitat buffers (generally at least 250 feet), preserve more of the micro watershed areas, support species that use both wetland and upland habitats, and provide ecological services to wetland species. This alternative would maintain greater hydrological functionality and wetland connectivity because more of the intermittent drainage channels and swales would be preserved and free spanning bridges would be constructed wherever roadways cross waters to avoid impacts on these waters. This alternative would also include control measures and performance standards that address stormwater flow, volume, and water quality for developed areas to minimize hydrologic and geomorphic modifications that could adversely affect wetlands and other waters that are preserved in the SPA. The Resource Impact Minimization Alternative would also result in fill of 0.53 acre of waters of the state, 0.72 acre less than would be filled under the Proposed Project Alternative. In addition to direct impacts

resulting from the placement of fill material into Federally jurisdictional waters of the U.S., the Resource Impact Minimization Alternative would also result in indirect impacts to 0.35 acre of waters of the U.S. from fragmentation. Fragmented waters under this alternative consist of 0.20 acre of seasonal wetland swale, 0.03 acre of stream channel, 0.11 acre of seasonal drainage channel, and 0.01 acre of ditch. The total acreage of fragmented waters under this alternative is 0.06 acre greater than the acreage of fragmented waters under the Proposed Project Alternative. Exhibit 3A.3-6 depicts aquatic resources in the SPA relative to the open space areas and impact areas for the Resource Impact Minimization Alternative.

Because the Resource Impact Minimization Alternative would still result in the fill of substantial acreage of waters of the U.S., including wetlands, as defined by Section 404 of the CWA, a **direct significant** impact would result, but would be substantially less compared to the Proposed Project Alternative. ***[Lesser]***

The larger, more contiguous preserve design, stormwater control measures, and preservation of a greater percentage of tributary channels and swales, would substantially reduce, but not entirely eliminate indirect effects on wetlands and other waters because major urban development and topographical modifications would still occur throughout the SPA. Therefore, the Resource Impact Minimization Alternative would result in **indirect significant** impacts, but to a much lesser extent than the Proposed Project Alternative. ***[Lesser]***

Mitigation Measure: Implement Mitigation Measures 3A.3-1a and 3A.3-1b.

CD

The Centralized Development Alternative would preserve an additional 2.45 acres of wetlands and other waters of the U.S., relative to the Proposed Project Alternative. Approximately 37.05 acres (44%) of wetlands and other waters of the U.S. would be filled under this alternative compared with 39.50 acres under the Proposed Project Alternative. The Centralized Development Alternative would designate an additional 414 acres of open space thereby preserving a greater proportion of adjacent upland habitats to provide larger wetland habitat buffers, preserve more of the micro watershed areas, support species that use both wetland and upland habitats, and provide ecological services to wetland species. The Centralized Development Alternative would result in fill of 1.28 acre of waters of the state, compared to 1.25 acres under the Proposed Project Alternative. In addition to direct impacts resulting from the placement of fill material into Federally jurisdictional waters of the U.S., the Centralized Development Alternative would also result in indirect impacts to 0.28 acre of waters of the U.S. from fragmentation. Fragmented waters under this alternative consist of 0.21 acre of seasonal wetland swale, 0.01 acre of stream channel, 0.05 acre of seasonal drainage channel, and 0.01 acre of ditch. The total acreage of fragmented waters under this alternative is 0.01 acre less than the acreage of fragmented waters under the Proposed Project Alternative. Exhibit 3A.3-7 depicts aquatic resources in the SPA relative to the open space areas and impact areas for the Centralized Development Alternative. See Table 3A.3-4 for a side by side comparison of preserved versus affected acreage of wetlands and other waters of the U.S. for each project alternative.

The Centralized Development Alternative would create two large open space areas that would reduce potential indirect effects from habitat fragmentation and edge effects, and hydrological modification from grading and impervious surfaces adjacent to wetlands. This alternative also includes control measures and performance standards that address stormwater flow, volume, and water quality for developed areas to minimize hydrologic and geomorphic modifications that could adversely affect wetlands and other waters that are preserved in the SPA. The open space design and stormwater control measures would substantially reduce, but not entirely eliminate potential indirect effects on wetlands and other waters.

Because the Centralized Development Alternative would still result in the fill of substantial acreage of waters of the U.S., including wetlands, as defined by Section 404 of the CWA, a **direct significant** impact would result. ***[Similar]***

Because a number of intermittent tributaries and seasonal swales directly connected to Alder Creek would still be filled and major urban development and topographical modifications would still occur throughout the SPA, the Centralized Development Alternative would result in **indirect significant** impacts, but to a lesser extent than the Proposed Project Alternative. ***[Lesser]***

Mitigation Measure: Implement Mitigation Measures 3A.3-1a and 3A.3-1b.

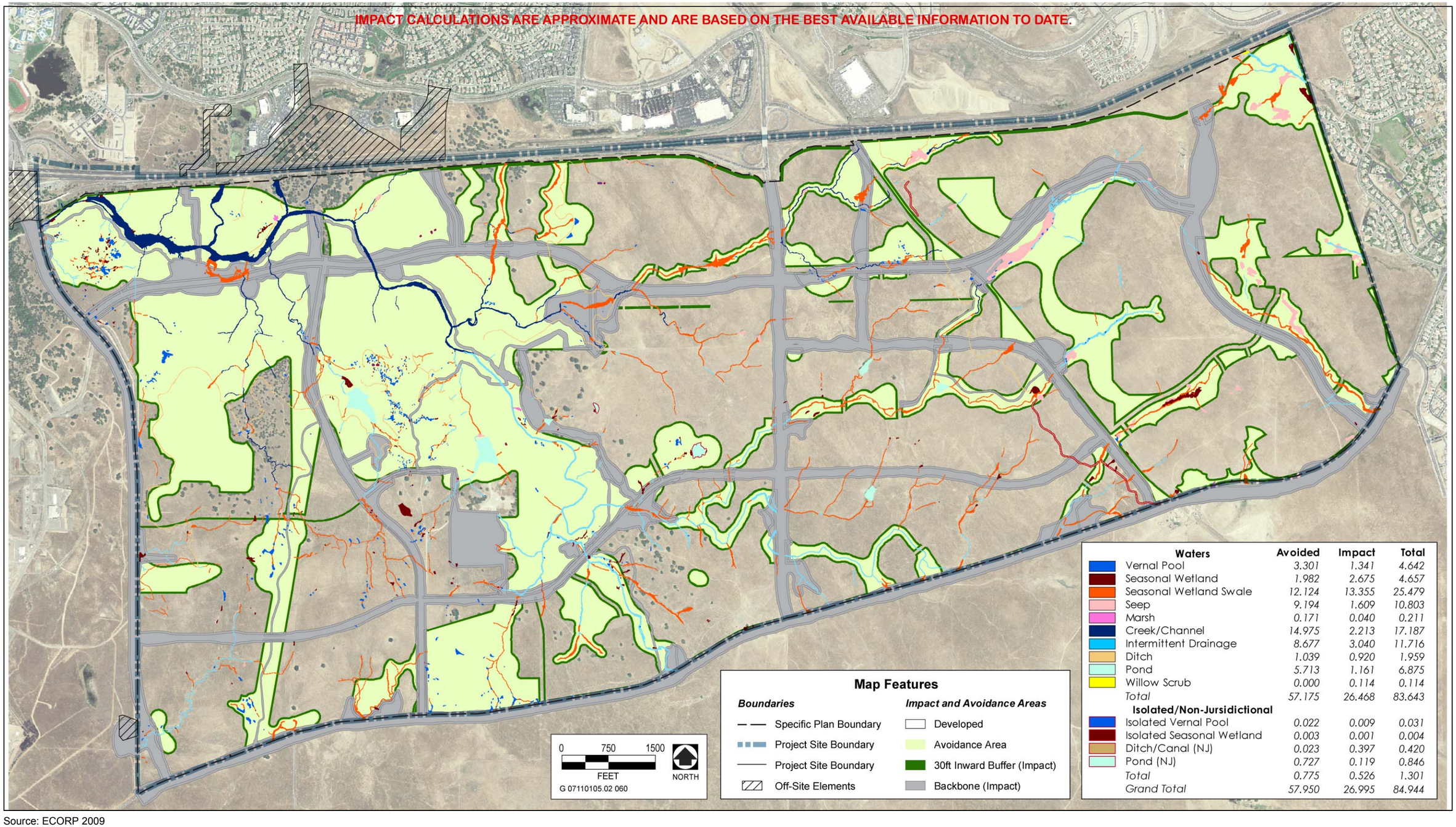
RHD

The Reduced Hillside Development Alternative would result in fill of 42.69 acres (51%) of Federally protected waters of the U.S., including wetlands. This is 3.19 acres more than would be filled under the Proposed Project Alternative. In addition, 1.28 of the existing 1.30 acres of waters of the state would be filled under this alternative; 0.02 acre more than would be filled under the Proposed Project Alternative. In addition to direct impacts resulting from the placement of fill material into Federally jurisdictional waters of the U.S., the Reduced Hillside Development Alternative would also result in indirect impacts to 0.25 acre of waters of the U.S. from fragmentation. Fragmented waters under this alternative consist of 0.17 acre of seasonal wetland swale, 0.01 acre of stream channel, 0.06 acre of seasonal drainage channel, and 0.01 acre of ditch. The total acreage of fragmented waters under this alternative is 0.04 acre less than the acreage of fragmented waters under the Proposed Project Alternative. Exhibit 3A.3-8 depicts aquatic resources in the SPA relative to the open space areas and impact areas for the Proposed Project Alternative. See Table 3A.3-4 above for a comparison of preserved versus affected acreage of wetlands and other waters of the U.S. for each project alternative.

Grading and creation of impervious surfaces in adjacent upland habitats would be the same under this alternative as under the Proposed Project Alternative. However, this alternative includes control measures and performance standards that address stormwater flow, volume, and water quality for developed areas to minimize hydrologic and geomorphic modifications that could adversely affect wetlands and other waters that are preserved in the SPA. Therefore, potential adverse effects on wetlands and other waters from altered hydrologic patterns would be lessened relative to the Proposed Project Alternative, but not substantially because major grading and topographic modifications would still occur throughout the SPA and no greater wetland buffers would be provided. More intermittent tributaries and seasonal swales directly connected to Alder Creek would be filled by implementation of this alternative, thereby eliminating natural hydrologic connectivity.

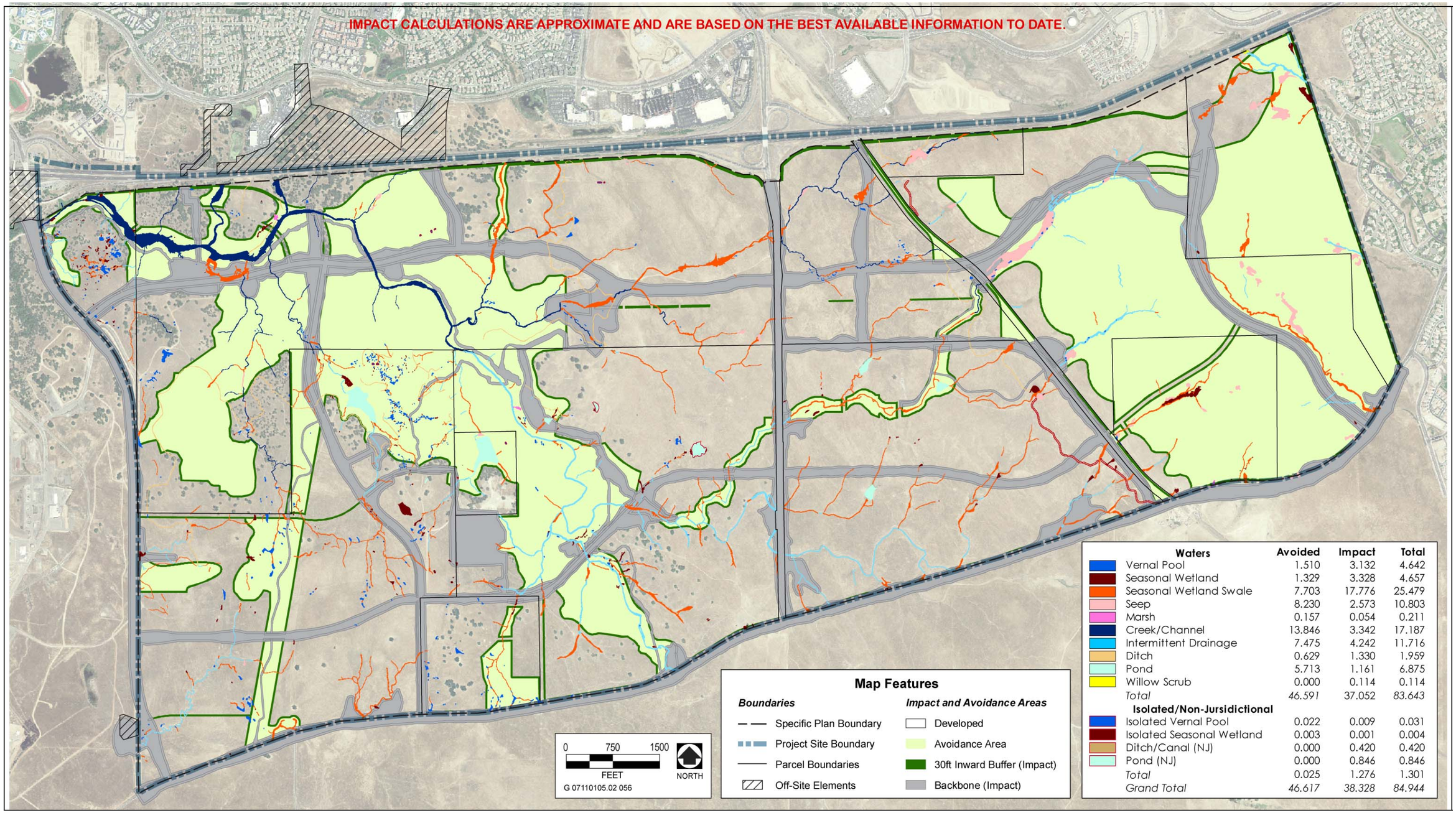
The loss and degradation of USACE jurisdictional vernal pools and other wetland habitats and other waters of the U.S. (e.g., ponds and drainage channels) that would occur with development of the Reduced Hillside Development Alternative constitutes a substantial adverse effect on Federally protected waters of the U.S., including wetlands, as defined by Section 404 of the CWA. Removal of 1.43 acres non-USACE jurisdictional wetlands in the SPA constitutes an adverse effect on waters of the state subject to Central Valley RWQCB jurisdiction. Therefore, **direct** and **indirect significant** impacts would occur. ***[Similar]***

Mitigation Measure: Implement Mitigation Measures 3A.3-1a and 3A.3-1b.



Source: ECORP 2009

Aquatic Resources and Open Space Areas under the Resource Impact Minimization Alternative **Exhibit 3A.3-6**



Source: ECORP 2009

Aquatic Resources and Open Space Areas Under the Centralized Development Alternative

Exhibit 3A.3-7

IMPACT CALCULATIONS ARE APPROXIMATE AND ARE BASED ON THE BEST AVAILABLE INFORMATION TO DATE.

Waters	Avoided	Impact	Total
Vernal Pool	1.155	3.487	4.642
Seasonal Wetland	0.941	3.716	4.657
Seasonal Wetland Swale	5.404	20.075	25.479
Seep	6.608	4.195	10.803
Marsh	0.157	0.054	0.211
Creek/Channel	13.802	3.385	17.187
Intermittent Drainage	7.084	4.632	11.716
Ditch	0.510	1.449	1.959
Pond	5.289	1.586	6.875
Willow Scrub	0.000	0.114	0.114
Total	40.951	42.692	83.643
Isolated/Non-Jursidictional			
Isolated Vernal Pool	0.019	0.013	0.031
Isolated Seasonal Wetland	0.003	0.002	0.004
Ditch/Canal (NJ)	0.000	0.420	0.420
Pond (NJ)	0.000	0.846	0.846
Total	0.021	1.280	1.301
Grand Total	40.972	43.973	84.944

Map Features

Boundaries
- Specific Plan Boundary
- Project Site Boundary
- Parcel Boundaries
- Off-Site Elements

Impact and Avoidance Areas
- Developed
- Avoidance Area
- 30ft Inward Buffer (Impact)
- Backbone (Impact)

0 750 1500
FEET
NORTH
G 07110105.02 059

Source: ECORP 2009

Aquatic Resources and Open Space Areas under the Reduced Hillside Development Alternative

Exhibit 3A.3-8

Off-Site Elements

Approximately 5.85 acres of waters of the U.S., including wetlands, would be permanently filled by construction of off-site infrastructure outside the project boundary. The off-site project elements that would directly affect potential waters of the U.S. are the detention basin west of Prairie City Road and the interchange improvements to U.S. 50. Affected wetlands and other waters of the U.S. consist of 0.59 acre of vernal pools, 0.25 acre of seasonal wetlands, 0.55 acre of seasonal wetland swales, 1.94 acres of freshwater marsh, 0.04 acre of intermittent drainage channels, 0.01 acre of ditch, and 2.47 acres of perennial stream channel. Indirect impacts on another 0.47 acre of waters of the U.S. could result from construction of the two roadway connections into El Dorado Hills.

The loss and degradation of USACE jurisdictional vernal pools and other wetland habitats and other waters of the U.S. (e.g., drainage channels) that would occur with project implementation constitutes a substantial adverse effect on Federally protected waters of the U.S., including wetlands, as defined by Section 404 of the CWA. Therefore, construction of off-site elements that support project development would result in **direct** and **indirect significant** impacts on waters of the U.S.

Implementation of Mitigation Measures 3A.3-1a and 3A.3-1b would reduce significant impacts on jurisdictional wetlands and other waters of the U.S. and waters of the state under the No USACE Permit, Proposed Project Alternative, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives, but not necessarily to a less-than-significant level. After a mitigation plan has been accepted by USACE and is implemented as required (including on-site preservation and purchase of credits at a mitigation bank and/or in-lieu fee mitigation), the direct impacts resulting from project implementation could be mitigated by providing “no net loss” of overall wetland acreage resulting from the project, as required in USACE permit conditions. However, USACE requires mitigation resulting in no net loss of wetland functions. Removal of 45.35 acres (39.5 acres on site and 5.85 acres off-site) of waters of the U.S., including stream channels, vernal pools, and other similar wetland habitats is a substantial loss, especially when considered in the context of the regional rate and acreage of habitat losses. Creating compensatory wetlands cannot be guaranteed to fully replace the functions of wetlands lost and temporal losses would occur unless all impacts could be mitigated through purchase of fully functioning, established, in-kind wetlands from an approved mitigation bank. It is unknown at this time if mitigation credits are available to fully cover the loss of wetland functions resulting from project implementation. Creation and preservation of wetlands within smaller and more fragmented areas surrounded by urban development cannot fully compensate for the whole suite of ecological services provided by larger expanses of interconnected wetland complexes surrounded by open space. Also, if compensatory wetland mitigation could not be provided in the same watershed an overall loss of function up to the subbasin level could result.

Considering the rate of development in Sacramento County and the limited amount of undeveloped, unspoken for land that supports existing wetlands that could be preserved, or that is suitable for creation of compensatory aquatic habitats similar to those that would be removed by project implementation, it may not be possible to fully mitigate the loss of habitat functions provided by the nearly 45 acres of aquatic habitats that would be lost as a result of the Proposed Project. Furthermore, indirect impacts would remain significant and unavoidable for the Proposed Project Alternative because:

- the amount of habitat loss and degradation is extensive and contributes significantly to the loss of this habitat type in the region,
- micro watersheds of aquatic resources retained on the site would not be preserved,
- wetland buffers from construction impacts would only be 25 feet in some cases and not more than 75 feet in many others,
- nearly 50% of the aquatic resources in the SPA would be filled, and

- the magnitude of topographic modification that would occur across the site with project implementation is severe.

All of these factors are likely to substantially diminish the water quality, hydrologic, and habitat functions of all wetlands remaining on site and downstream in the project vicinity. Therefore, direct and indirect impacts would remain **significant and unavoidable** for the Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives. Under the No USACE Permit Alternative, there would be no direct impacts, but indirect impacts would remain **significant and unavoidable**. In addition, some of the off-site elements fall under the jurisdiction of El Dorado and Sacramento Counties, and Caltrans; therefore, neither the City nor the project applicant(s) would have control over their timing or implementation.

IMPACT 3A.3-2 Loss and Degradation of Habitat for Special-Status Wildlife Species and Potential Direct Take of Individuals. *Project implementation would result in the loss and degradation of habitat for several special-status wildlife species. Take of several listed species, including vernal pool invertebrates, valley elderberry longhorn beetle, and Swainson's hawk, could also occur.*

On-Site and Off-Site Elements

NP

Under the No Project Alternative, the SPA would remain as open space used for livestock grazing consistent with the current AG-80 zoning designation, and no off-site water facilities would be constructed. Continuation of existing land uses is not expected to result in changes to the types and quality of wildlife habitat available in the SPA. The AG-80 zoning designation is considered to provide 100% foraging habitat value for Swainson's hawk (Sacramento County 2006). Under the No Project Alternative, site topography would not be altered, existing vegetation would not be removed, and no loss of vernal pools or other aquatic habitats would be expected. Therefore, **direct** and **indirect** impacts would be **less than significant**. ***[Lesser]***

On-Site Elements

NCP

Wildlife Associated with Vernal Pools

The No USACE Permit Alternative would result in no permanent fill of vernal pool, seasonal wetlands, or seasonal wetland swales, which are potential habitat for vernal pool fairy shrimp, conservancy fairy shrimp, vernal pool tadpole shrimp, and western spadefoot toad. No development would occur within 50 feet of wetland features and free spanning bridges would be constructed over waterways to avoid impacts from roadways. This alternative would designate an additional 456 acres of open space compared to the Proposed Project Alternative. Compared to the other Project Alternatives, the No USACE Permit Alternative would preserve a larger portion of wetlands within the SPA, provide a larger buffer to minimize impacts of adjacent land uses, and preserve a greater proportion of upland habitat to support species that use both wetland and upland habitats. However, mixed use development would still be constructed in adjacent uplands. Although they would be lessened, indirect effects on wetlands from topographic modifications, creation of impervious surfaces, urban runoff, erosion, siltation, intrusion of humans and domestic animals, and introduction of invasive plant species could result in habitat degradation. Implementation of the No USACE Permit Alternative would result in **no direct** impacts to wildlife species associated with vernal pools; however **indirect significant** impacts would still occur because of the substantial changes to the site topography, increased impervious surfaces, and urban development adjacent to wetland habitats. ***[Lesser]***

Swainson's Hawk and Other Raptors

The No USACE Permit Alternative would result in removal of approximately 362 acres of oak woodland, which provides potential nesting habitat for Swainson's hawk and other raptors. Tree removal during the raptor breeding season (February–August) could result in mortality of eggs and chicks if an active nest were present. Other construction activities could disturb active nests near the construction area or in trees not yet removed from the SPA, potentially resulting in nest abandonment by the adults and mortality of chicks and eggs. Implementation of the No USACE Permit Alternative would result in the direct loss of approximately 1,902 acres of grassland, which provides foraging habitat for Swainson's hawk and other raptors. Some of the remaining 692 acres of grassland habitat would be directly affected by contour grading, recreational amenities, and other activities within the open space area. In addition, this alternative would result in indirect effects to the nesting and foraging habitat remaining in the SPA due to disturbance from use of adjacent development, which could reduce nest success and foraging habitat quality. Therefore, **direct** and **indirect** impacts to Swainson's hawk and other raptors would be **significant.** ***[Similar]***

Valley Elderberry Longhorn Beetle

Implementation of the No USACE Permit Alternative could result in removal of elderberry shrubs containing valley elderberry longhorn beetle larvae. Indirect impacts from ground-disturbing activities or use of herbicides could also result if the health of elderberry shrubs containing valley elderberry longhorn beetle larvae is adversely affected. Therefore, **direct** and **indirect** impacts to valley elderberry longhorn beetle would be **significant**. ***[Similar]***

Tricolored Blackbird

Construction activities during implementation of the No USACE Permit Alternative could result in disturbance to tricolored blackbird colonies, which may result in nest abandonment and loss of eggs or young. Due to the potential for large numbers of nesting tricolored blackbirds to be lost, this **direct** impact would be considered **potentially significant**. Because project activities adjacent to potential nesting habitat are not expected to result in the mortality of individuals, chicks, or eggs, **indirect** impacts would be considered **less than significant**. ***[Similar]***

Special-Status Bats

Implementation of the No USACE Permit Alternative would likely require an abandoned mine shaft to be filled or capped. If the mine shaft is used by bats as a day roost, hibernation roost, or maternity colony roost, implementation of this alternative could result in injury and mortality of pallid bat, Townsend's big-eared bat, or other common bat species. Project activities could result in **significant direct** or **indirect** impacts on special-status bat species. ***[Similar]***

Other Special-Status Species

The No USACE Permit Alternative would have a **less-than-significant direct** and **indirect** impact on western pond turtle, loggerhead shrike, grasshopper sparrow, Modesto song sparrow, and American badger because implementation of this alternative would not substantially reduce their populations. ***[Similar]***

Mitigation Measure: Implement Mitigation Measures 3A.3-1a and 3A.3-1b.

Mitigation Measure 3A.3-2a: Avoid Direct Loss of Swainson's Hawk and Other Raptor Nests.

To mitigate impacts on Swainson's hawk and other raptors (including burrowing owl), the project applicant(s) of all project phases shall retain a qualified biologist to conduct preconstruction surveys and to identify active nests on and within 0.5 mile of the SPA and active burrows in the SPA. The surveys

shall be conducted before the approval of grading and/or improvement plans (as applicable) and no less than 14 days and no more than 30 days before the beginning of construction for all project phases. To the extent feasible, guidelines provided in *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in the Central Valley* (Swainson's Hawk Technical Advisory Committee 2000) shall be followed for surveys for Swainson's hawk. If no nests are found, no further mitigation is required.

If active nests are found, impacts on nesting Swainson's hawks and other raptors shall be avoided by establishing appropriate buffers around the nests. No project activity shall commence within the buffer area until the young have fledged, the nest is no longer active, or until a qualified biologist has determined in coordination with DFG that reducing the buffer would not result in nest abandonment. DFG guidelines recommend implementation of 0.25- or 0.5-mile-wide buffers, but the size of the buffer may be adjusted if a qualified biologist and the City, in consultation with DFG, determine that such an adjustment would not be likely to adversely affect the nest. Monitoring of the nest by a qualified biologist during and after construction activities will be required if the activity has potential to adversely affect the nest.

If active burrows are found, a mitigation plan shall be submitted to the City for review and approval before any ground-disturbing activities. The City shall consult with DFG. The mitigation plan may consist of installation of one-way doors on all burrows to allow owls to exit, but not reenter, and construction of artificial burrows within the project vicinity, as needed; however, burrow owl exclusions may only be used if a qualified biologist verifies that the burrow does not contain eggs or dependent young. If active burrows contain eggs and/or young, no construction shall occur within 50 feet of the burrow until young have fledged. Once it is confirmed that there are no owls inside burrows, these burrows may be collapsed.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties, or Caltrans).

Implementation: Project applicant(s) of all project phases.

Timing: Before the approval of grading and improvement plans, before any ground-disturbing activities, and during project construction as applicable for all project phases.

Enforcement:

1. California Department of Fish and Game.
2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
3. For the two roadway connections in El Dorado Hills: El Dorado County Development Services Department.
4. For the U.S. 50 interchange improvements: Caltrans.
5. For the detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.

Mitigation Measure 3A.3-2b: Prepare and Implement a Swainson's Hawk Mitigation Plan.

To mitigate for the loss of Swainson's hawk foraging habitat, the project applicant(s) of all project phases shall prepare and implement a Swainson's hawk mitigation plan including, but not limited to the requirements described below.

Before the approval of grading and improvement plans or before any ground-disturbing activities, whichever occurs first, the project applicant(s) shall preserve, to the satisfaction of the City or Sacramento County, as appropriate depending on agency jurisdiction, suitable Swainson's hawk foraging habitat to ensure 1:1 mitigation of habitat value for Swainson's hawk foraging habitat lost as a result of the project, as determined by the City, or Sacramento County, after consultation with DFG and a qualified biologist.

The 1:1 habitat value shall be based on Swainson's hawk nesting distribution and an assessment of habitat quality, availability, and use within the City's planning area, or Sacramento County jurisdiction. The mitigation ratio shall be consistent with the 1994 DFG Swainson's Hawk Guidelines included in the *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsoni*) in the Central Valley of California*. Such mitigation shall be accomplished through either the transfer of fee title or perpetual conservation easement. The mitigation land shall be located within the known foraging area and within Sacramento County. The City, or Sacramento County if outside City jurisdiction, after consultation with DFG, will determine the appropriateness of the mitigation land.

Before approval of such proposed mitigation, the City, or Sacramento County for the off-site detention basin, shall consult with DFG regarding the appropriateness of the mitigation. If mitigation is accomplished through conservation easement, then such an easement shall ensure the continued management of the land to maintain Swainson's hawk foraging values, including but not limited to ongoing agricultural uses and the maintenance of all existing water rights associated with the land. The conservation easement shall be recordable and shall prohibit any activity that substantially impairs or diminishes the land's capacity as suitable Swainson's hawk habitat.

The project applicant(s) shall transfer said Swainson's hawk mitigation land, through either conservation easement or fee title, to a third-party, nonprofit conservation organization (Conservation Operator), with the City and DFG named as third-party beneficiaries. The Conservation Operator shall be a qualified conservation easement land manager that manages land as its primary function. Additionally, the Conservation Operator shall be a tax-exempt nonprofit conservation organization that meets the criteria of Civil Code Section 815.3(a) and shall be selected or approved by the City or County, after consultation with DFG. The City, or County, after consultation with DFG and the Conservation Operator, shall approve the content and form of the conservation easement. The City, or County, DFG, and the Conservation Operator shall each have the power to enforce the terms of the conservation easement. The Conservation Operator shall monitor the easement in perpetuity to assure compliance with the terms of the easement.

The project applicant(s), after consultation with the City, or County of jurisdiction, DFG, and the Conservation Operator, shall establish an endowment or some other financial mechanism that is sufficient to fund in perpetuity the operation, maintenance, management, and enforcement of the conservation easement. If an endowment is used, either the endowment funds shall be submitted to the City for impacts on lands within the City's jurisdiction or Sacramento County for the off-site detention basin to be distributed to an appropriate third-party nonprofit conservation agency, or they shall be submitted directly to the third-party nonprofit conservation agency in exchange for an agreement to manage and maintain the lands in perpetuity. The Conservation Operator shall not sell, lease, or transfer any interest of any conservation easement or mitigation land it acquires without prior written approval of the City and DFG. Mitigation lands established or acquired for impacts incurred at the off-site detention basin shall require approval from Sacramento County prior to sale or transfer of mitigation lands or conservation easement.

If the Conservation Operator ceases to exist, the duty to hold, administer, manage, maintain, and enforce the interest shall be transferred to another entity acceptable to the City and DFG, or Sacramento County and DFG depending on jurisdiction of the affected habitat. The City Planning Department shall ensure that mitigation habitat established for impacts on habitat within the City's planning area is properly established and is functioning as habitat by conducting regular monitoring of the mitigation site(s) for the

first 10 years after establishment of the easement. Sacramento County shall monitor habitat and ensure success for impacts on habitat at the off-site detention basin.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., Sacramento County and Caltrans).

Implementation: Project applicant(s) of all project phases.

Timing: Before the approval of grading, improvement, or construction plans and before any ground-disturbing activity in any project development phase that would affect Swainson's hawk foraging habitat.

Enforcement:

1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For the detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.
3. For the U.S. 50 interchange improvements: Caltrans.

Mitigation Measure 3A.3-2c: Avoid and Minimize Impacts to Tricolored Blackbird Nesting Colonies.

To avoid and minimize impacts to tricolored blackbird, the project applicant(s) of all project phases shall conduct a preconstruction survey for any project activity that would occur during the tricolored blackbird's nesting season (March 1–August 31). The preconstruction survey shall be conducted by a qualified biologist before any activity occurring within 500 feet of suitable nesting habitat, including freshwater marsh and areas of riparian scrub vegetation. The survey shall be conducted within 14 days before project activity begins.

If no tricolored blackbird colony is present, no further mitigation is required. If a colony is found, the qualified biologist shall establish a buffer around the nesting colony. No project activity shall commence within the buffer area until a qualified biologist confirms that the colony is no longer active. The size of the buffer shall be determined in consultation with DFG. Buffer size is anticipated to range from 100 to 500 feet, depending on the nature of the project activity, the extent of existing disturbance in the area, and other relevant circumstances.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries (i.e., U.S. 50 interchange improvements) must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., Caltrans).

Implementation: Project applicant(s) of all project phases.

Timing: Before the approval of any ground-disturbing activity within 500 feet of suitable nesting habitat as applicable for all project phases.

Enforcement:

1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For the U.S. 50 interchange improvements: Caltrans.

Mitigation Measure 3A.3-2d: Avoid and Minimize Impacts to Special-Status Bat Roosts.

The project applicant of all project phases containing potential bat roosting habitat shall retain a qualified biologist to conduct surveys for roosting bats. Surveys shall be conducted in the fall to determine if the mine shaft is used as a hibernaculum and in spring and/or summer to determine if it is used as a maternity or day roost. Surveys shall consist of evening emergence surveys to note the presence or absence of bats and could consist of visual surveys at the time of emergence. If evidence of bat use is observed, the number and species of bats using the roost shall be determined. Bat detectors may be used to supplement survey efforts. If no bat roosts are found, then no further study shall be required.

If roosts of pallid bat or Townsend's big-eared bats are determined to be present and must be removed, the bats shall be excluded from the roosting site before the mine shaft is removed. A mitigation program addressing compensation, exclusion methods, and roost removal procedures shall be developed in consultation with DFG before implementation. Exclusion methods may include use of one-way doors at roost entrances (bats may leave but not reenter), or sealing roost entrances when the site can be confirmed to contain no bats. Exclusion efforts may be restricted during periods of sensitive activity (e.g., during hibernation or while females in maternity colonies are nursing young). The loss of each roost (if any) will be replaced in consultation with DFG and may include construction and installation of bat boxes suitable to the bat species and colony size excluded from the original roosting site. Roost replacement will be implemented before bats are excluded from the original roost sites. Once the replacement roosts are constructed and it is confirmed that bats are not present in the original roost site, the mine shaft may be removed.

Implementation: Project applicant(s) of all project phases containing potential bat roosting habitat.

Timing: Before the approval of removal or fill of the mine shaft in the SPA.

Enforcement: City of Folsom Community Development Department.

Mitigation Measure 3A.3-2e: Obtain an Incidental Take Permit under Section 10(a) of ESA; Develop and Implement a Habitat Conservation Plan to Compensate for the Loss of Vernal Pool Habitat.

The project applicant(s) for all project phases shall obtain an incidental take permit under Section 10(a) of ESA. No project construction shall proceed in areas supporting potential habitat for Federally listed vernal pool invertebrates, or within adequate buffer areas (250 feet or lesser distance deemed sufficiently protective by a qualified biologist with approval from USFWS), until a BO has been issued by USFWS and the project applicant(s) have abided by conditions in the BO (including all conservation and minimization measures). Conservation and minimization measures are likely to include preparation of supporting documentation describing methods to protect existing vernal pools during and after project construction.

Under the No USACE Permit Alternative, interagency consultation under Section 7 of ESA would not occur; therefore, the project applicant(s) would be required to develop a habitat conservation plan to mitigate impacts on Federally listed vernal pool invertebrates. The project applicant(s) shall complete and implement, or participate in, a habitat conservation plan that shall compensate for the loss of acreage, function, and value of affected vernal pool habitat. The habitat conservation plan shall be consistent with the goals of the *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (USFWS 2005) and must be approved by USFWS.

The project applicant(s) for all project phases shall ensure that there is sufficient upland habitat within the target areas for creation and restoration of vernal pools and vernal pool complexes to provide ecosystem health. The land used to satisfy this mitigation measure shall be protected through a fee title or conservation easement acceptable to the City and USFWS.

The project applicant(s) for all project phases shall identify the extent of indirectly affected vernal pool and seasonal wetland habitat, either by identifying all such habitat within 250 feet of project construction activities or by providing an alternative technical evaluation in support of a lesser indirect impact distance. If a lesser distance is pursued, this distance shall be approved by USFWS. The project applicant(s) shall preserve 2 wetted acres of vernal pool habitat for each wetted acre of any indirectly affected vernal pool habitat. This mitigation shall occur before the approval of any grading or improvement plans for any project phase that would allow work within 250 feet of such habitat, and before any ground-disturbing activity within 250 feet of the habitat. The project applicant(s) will not be required to complete this mitigation measure for direct or indirect impacts that have already been mitigated to the satisfaction of USFWS through another BO or mitigation plan.

A standard set of BMPs shall be applied to construction occurring in areas within 250 feet of off-site vernal pool habitat, or within any lesser distance deemed adequate by a qualified biologist (with approval from USFWS) to constitute a sufficient buffer from such habitat. Refer to Section 3A.9, "Hydrology and Water Quality - Land" for the details of BMPs to be implemented.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties or Caltrans).

Implementation: Project applicant(s) of all project phases and on-site and off-site elements.

Timing: Before the approval of any grading or improvement plans, before any ground-disturbing activities within 250 feet of said habitat, and on an ongoing basis throughout construction as applicable for all project phases as required by the habitat conservation plan and/or BO.

Enforcement:

1. U.S. Fish and Wildlife Service.
2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
3. For the two roadway connections in El Dorado Hills: El Dorado County Development Services Department.
4. For the detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.
5. For the U.S. 50 interchange improvements: Caltrans.

Mitigation Measure 3A.3-2f: Obtain an Incidental Take Permit under Section 10(a) of ESA; Develop and Implement a Habitat Conservation Plan to Compensate for the Loss of VELB Habitat.

As long as valley elderberry longhorn beetle remains a species protected under ESA, the project applicant(s) of all project phases containing elderberry shrubs shall obtain an incidental take permit under Section 10(a) of ESA for valley elderberry longhorn beetle. No project construction shall proceed in areas potentially containing valley elderberry longhorn beetle until a BO has been issued by USFWS, and the project applicant(s) for all project phases have abided by all pertinent conditions in the BO relating to the proposed construction, including all conservation and minimization measures. Conservation and minimization measures are likely to include preparation of supporting documentation that describes methods for relocation of existing shrubs and maintaining existing shrubs and other vegetation in a conservation area.

Under the No USACE Permit Alternative, interagency consultation under Section 7 of ESA would not occur; therefore, the project applicant(s) would be required to develop a habitat conservation plan to mitigate impacts on valley elderberry longhorn beetle. The project applicant(s) shall complete and implement a habitat conservation plan that will compensate for the loss of valley elderberry longhorn beetle. Relocation of existing elderberry shrubs and planting of new elderberry seedlings shall be implemented on a no-net-loss basis. Detailed information on monitoring success of relocated and planted shrubs and measures to compensate (should success criteria not be met) would also likely be required in the BO. Ratios for mitigation of valley elderberry longhorn beetle habitat will ultimately be determined through the ESA Section 10(a) consultation process with USFWS, but shall be a minimum of "no net loss."

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries (i.e., U.S. 50 interchange improvements) must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., Caltrans).

Implementation: Project applicant(s) of all project phases potentially containing elderberry shrubs.

Timing: Before the approval of any grading or improvement plans or any ground-disturbing activity within 100 feet of valley elderberry longhorn beetle habitat as applicable for all project phases, and on an ongoing basis as required by the habitat conservation plan and/or BO.

Enforcement:
1. U.S. Fish and Wildlife Service
2. City of Folsom Community Development Department.
3. For the U.S. 50 interchange improvements: Caltrans.

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Development under the Proposed Project Alternative would result in an increase in development and human population that would result in adverse effects on a number of special-status wildlife species. Special-status wildlife listed under ESA that could be substantially affected by the Proposed Project Alternative include vernal pool fairy shrimp, vernal pool tadpole shrimp, conservancy fairy shrimp, and valley elderberry longhorn beetle. Swainson's hawk, which is listed under CESA as threatened, could also be adversely affected by the Proposed Project Alternative. Impacts on these five listed species would be considered significant and are discussed in detail below. Special-status raptors, western spadefoot, tricolored blackbird, and special-status bats could also be adversely affected, and are discussed further below. Impacts on all other special-status wildlife species are considered less than significant because potential loss of a few individuals is not likely to result in a substantial adverse affect on the population.

Wildlife Associated with Vernal Pools

The SPA contains approximately 5 acres of vernal pools, 5 acres of seasonal wetlands, and 26 acres of seasonal wetland swales that are considered potential habitat for vernal pool fairy shrimp, conservancy fairy shrimp, vernal pool tadpole shrimp, and western spadefoot toad. Vernal pool tadpole shrimp and conservancy fairy shrimp are Federally listed as endangered. Vernal pool fairy shrimp is Federally listed as threatened. Western spadefoot is a California species of special concern. Vernal pool tadpole shrimp have been documented directly adjacent to the southwest corner of the SPA, and vernal pool fairy shrimp have been documented less than one mile to the south of the SPA (CNDDB 2008). Western spadefoot are known to occur in Mather Regional Park, more than 5 miles from the SPA.

California tiger salamander is not expected to occur in the SPA. Although there is potentially suitable breeding habitat in some vernal pools, seasonal wetlands, and ponds and suitable uplands in the grasslands on site, California tiger salamander have not been detected in Sacramento County north of the Cosumnes River (USFWS 2004). In a survey transect that extended along the west side of the Sacramento Valley from Shasta County to Solano County, California tiger salamanders were recorded only at the Jepson Prairie in Solano County (Watts 2008). Surveys of vernal pool habitats on and near the SPA have not incidentally detected California tiger salamander. Given that the closest known population is 15 miles to the south of the SPA and the lack of known populations in the project region, it is unlikely for California tiger salamander to occur in the SPA.

Protocol surveys (two wet-seasons or consecutive wet- and dry-season surveys) for Federally listed vernal pool crustaceans have been conducted on over 70% of the SPA and no listed adults or cysts were detected (MJM Properties 2007a, MJM Properties 2007b, Colliers International 2007a, Gibson and Skordal 2009). However, vernal pool fairy shrimp have been detected in two locations within the Prairie City Business Park property at the northwest corner of the SPA during wet-season surveys in 2008-2009 (ECORP 2009b). At least one wet-season survey has been conducted in other areas along the western portion of the site, but no listed vernal pool crustaceans have been detected (ECORP 2009b). Federally listed vernal pool crustaceans could occur elsewhere in the SPA where suitable habitat is present (Holloway Rassmusson Molondanof 2005 and The Hodgson Company 2007a). Although surveys over the majority of the SPA in suitable habitat indicate that listed vernal pool crustaceans may be absent from most of the site, vernal pool fairy shrimp is known to occur in at least one watershed, which is connected to other suitable habitats on the site. In addition, many of the wetlands surveyed contained linderiella, which is not a listed species, but is often found in association with listed crustaceans. Therefore, there remains potential for listed vernal pool crustaceans to occur in suitable habitats in the SPA.

Focused surveys for western spadefoot were conducted in April 2006 on approximately 40% of the SPA and were not detected (MJM Properties 2006d). The aquatic habitats surveyed were determined to be unsuitable for western spadefoot due to the abundance of predatory bullfrogs. Although habitat conditions may not be suitable for successful reproduction of western spadefoot, the species may be present in vernal pools or other seasonal wetlands in the SPA.

Implementation of the Proposed Project Alternative would permanently remove approximately 25 acres of potential habitat for special-status vernal pool crustaceans and western spadefoot, which includes approximately 3 acres of vernal pools, 4 acres of seasonal wetland, and 18 acres of seasonal wetland swale, as discussed under Impact 3A.3-1 “Loss and Degradation of Jurisdictional Wetlands and Other Waters of the U.S., and Waters of the State.” Approximately 2 acres of vernal pools, 1 acre of seasonal wetland, and 8 acres of seasonal wetland swale would be preserved in open space areas. Preserved wetlands within the designated open space areas would be provided with a 25-foot-wide buffer where no project-related ground disturbance would occur. Outside of the 25-foot-wide buffer, an additional 50 feet of “no-development” buffer would be established; however disturbance associated with contour grading, mitigation planting, trails, benches, and other passive recreational amenities may occur in this 50-foot “no development” buffer.

In addition to the direct effect of habitat loss or injury to individuals by filling suitable habitat, vernal pool species could be indirectly affected by project activities that occur adjacent to wetland habitats. Indirect effects include habitat degradation that could result from reduction in water quality caused by urban runoff, erosion, and siltation; intrusion of humans and domestic animals; and introduction of invasive plant species. In addition, the hydrology of the wetland habitats for vernal pool crustaceans and western spadefoot could be altered by substantial grading of the site, including within the open space areas, and creation of impervious surfaces proposed for adjacent uplands. All portions of the SPA, with the exception of 25-foot-wide buffers around preserved wetlands, would be subject to contour grading, which could affect wetland hydrology and water quality. Overall site topography would be substantially altered to achieve level ground for development. These earthmoving activities and resulting gradient changes across the SPA could alter hydrologic patterns and adversely affect wetlands and drainage channels retained in the SPA, as well as off-site wetlands, by altering hydration periods, peak flows, runoff volumes, and runoff durations. Construction of new roadways and roadway improvements associated with

development of the backbone infrastructure could disrupt or eliminate hydrologic and biological connectivity that is important to support wetlands and associated wildlife species. In addition, western spadefoot, if they occur in the SPA, could be indirectly affected by an increase in vehicular traffic on the site, which could result in mortality during dispersal or seasonal movements between aquatic and upland habitats.

Therefore, **direct** and **indirect** impacts to vernal pool fairy shrimp, conservancy fairy shrimp, vernal pool tadpole shrimp, and western spadefoot toad would be **significant.**

Swainson's Hawk and Other Raptors

Swainson's hawk, a species state-listed as threatened, is one of several raptors that are likely to nest and/or forage in the SPA. Two California species of special concern (western burrowing owl and northern harrier) have been documented foraging on the site (MJM Properties 2006b), and are expected to nest on site. White-tailed kite, which is fully protected under the California Fish and Game Code, is also expected to nest and forage on site. One additional California species of special concern, golden eagle, may forage on site outside of the breeding season. All raptors and their nests are protected under Section 3503.5 of the California Fish and Game Code. Common raptors that could nest in the SPA include Cooper's hawk, American kestrel, red-tailed hawk, red-shouldered hawk, western screech-owl, great horned owl, and barn owl.

Implementation of the Proposed Project Alternative would have a substantial adverse effect on nesting and foraging habitat for raptors. Of the approximately 642 acres of existing oak woodland that is considered potential nesting habitat for Swainson's hawk and other tree-nesting raptors, approximately 243 acres (37%) would be removed. If trees are to be removed during the raptor breeding season (February–August), mortality of eggs and chicks could result if an active nest were present. In addition, project construction could disturb active nests near the construction area or in trees not yet removed from the SPA, potentially resulting in nest abandonment by the adults and mortality of chicks and eggs. Indirect effects to nesting raptors include increased nest failure due to disruption of essential breeding and foraging behavior resulting from human disturbances in adjacent developed areas and increased nest predation by wildlife species associated with human development, such as crows and raccoons, as well as domestic cats (and dogs for ground-nesting raptors such as burrowing owl and northern harrier). The 2,594 acres of grassland habitat present in the SPA is considered foraging habitat for raptors and could be used for nesting by burrowing owl and northern harrier. The grading, paving, and other ground disturbances in the project footprint could indirectly affect nesting and foraging raptors by reducing the population of the small mammal prey base of many raptors over the entire SPA through conversion of natural vegetation cover. Large raptors generally require large areas of suitable foraging habitat. The remaining grassland in the open space areas would be fragmented by the development, which may cause the habitat to be unsuitable for raptor foraging.

As a consequence of direct loss of nesting and foraging habitat and indirect effects to nest success and foraging habitat quality, implementation of the Proposed Project Alternative could eventually lead to the permanent displacement of some raptors from the SPA. Therefore, the Proposed Project Alternative would result in **significant direct** and **indirect** impacts on Swainson's hawk and other raptors.

Valley Elderberry Longhorn Beetle

The valley elderberry longhorn beetle is Federally listed as threatened, but has been proposed for delisting. Several elderberry shrubs with stems greater than 1.0 inch in diameter at ground level, which provide potential habitat for valley elderberry longhorn beetle (USFWS 1999), have been documented throughout the SPA (GenCorp 2007d,e; MJM Properties 2006b; Colliers International 2006). Valley elderberry longhorn beetles have been documented within two miles of the site (CNDDB 2008), and beetle exit holes potentially created by valley elderberry longhorn beetles have been observed in elderberry shrubs adjacent to the SPA (ECORP 2007d).

Implementation of the Proposed Project Alternative could result in the direct or indirect loss of valley elderberry longhorn beetles or their habitat. Six elderberry shrubs have been mapped in the SPA (Exhibit 3A.3-1), but at

least one unmapped shrub is known to occur on site (GenCorp 2007d), and additional shrubs may also be present because thorough, focused surveys have not been conducted. Although a portion of the SPA including one mapped elderberry shrub has been set aside for preservation, at least four elderberry shrubs are known to be located within areas proposed for development, and additional shrubs may also be located within development and/or grading areas. If elderberry shrubs containing valley elderberry longhorn beetle larvae are removed while listed, direct take of this Federally-threatened species would result, which would constitute a significant impact. It is conceivable that over the 20-year buildout period, the species could become delisted. Indirect impacts could also result if the health of elderberry shrubs containing valley elderberry longhorn beetle larvae is adversely affected. Indirect impacts could occur if herbicides or insecticides are used in habitats adjacent to elderberry shrubs, if earthmoving activities disturb elderberry shrub roots, or if the topography and/or hydrology of the surrounding area are altered to the extent that it reduces the soil moisture surrounding the elderberry shrub. Therefore, direct and indirect impacts to valley elderberry longhorn beetle are considered to be significant. If delisting occurs, this **direct** and **indirect** impact would be less than significant, however for purposes of this EIR/EIS, this direct and indirect impact is considered **significant**.

Tricolored Blackbird

Nesting habitat for tricolored blackbird is found in riparian habitat and blackberry brambles along Alder Creek and adjacent to several ponds in the SPA. Tricolored blackbirds nest in colonies of 100s to 10,000s of individuals. Nesting colonies will often occur in the same location over many years, but colonies may also shift locations if nest failure occurs. An abundant insect source near the nesting colony is an important habitat component and nesting colonies are often associated with dairies, feedlots, or wastewater treatment ponds. Although tricolored blackbirds are not known to nest on the site and suitable nesting and foraging habitat is limited, several tricolored blackbird colonies are known from within 5 miles of the SPA (CNDDB 2008). Disturbance during construction could result in nest abandonment and loss of eggs or young if an active tricolored blackbird nesting colony were to be present during ground-disturbing activities. Due to the potential for large numbers of nesting tricolored blackbirds to be lost, this **direct** impact would be considered **potentially significant**. Because project activities adjacent to potential nesting habitat are not expected to result in the mortality of individuals, chicks, or eggs, **indirect impacts** would be considered **less than significant**.

Special-Status Bats

Several special-status bat species have potential to occur in the SPA, including pallid bat, Townsend's big-eared bat, western mastiff bat, and western red bat. These species may forage over open grassland and woodland areas, as well as riparian areas. Roosting habitat is typically a limiting factor to bat distribution. Western mastiff bat is unlikely to roost on site due to habitat preference to use tall cliffs and rocks, which are absent from the site. Western red bat roosts in tree foliage, especially in cottonwoods, sycamore, and other broad-leaved deciduous riparian trees (Pierson et al. 2004); suitable roosting habitat for western red bat is lacking from the site, as the riparian habitat along Alder Creek mostly consists of willow and blackberry scrub. An abandoned mine shaft is present in the south central portion of the site and would likely be filled or capped due to public safety issues. It is unknown if this mine shaft provides suitable thermal or structural conditions for roosting bats. However, if the mine shaft is used as a day roost, hibernation roost, or maternity colony roost, implementation of the Proposed Project Alternative could result in injury and mortality of pallid bat, Townsend's big-eared bat, or other common bat species. Day roosts are used throughout the spring and summer and maternity colony roosts can be active from approximately early April until mid-October. Hibernation roosts may be used from approximately November to early March. Loss of individual bats would be considered a **potentially significant, direct** impact. There would be **no indirect** impact on special-status bat species.

Other Special-Status Species

Several other special-status species have potential to occur in the SPA: western pond turtle, loggerhead shrike, grasshopper sparrow, Modesto song sparrow, and American badger, as discussed below.

Suitable habitat for western pond turtle occurs in two large ponds within the oak woodland community in the west-central portion of the site and in perennial portions of Alder Creek and tributaries. Western pond turtles are known to occur in at least one pond in the SPA and have been documented in Alder Creek immediately downstream of the SPA (GenCorp 2007e). No turtles were observed during focused surveys in the eastern central portion of the SPA (MJM Properties 2006b) and suitable habitat was determined to be absent in the southern and eastern portions of the site (MJM Properties 2006b, Centex Homes 2006a, Holloway Rassmusson Molondanof 2005). Implementation of the Proposed Project Alternative would not directly fill the occupied or suitable ponds in the western-central portion of the site or the perennial portions of Alder Creek and its tributaries, and upland habitats suitable for nesting would be retained in proximity to aquatic habitat. **Direct** and **indirect** impacts to western pond turtle are considered **less than significant**.

The SPA provides potential nesting habitat for loggerhead shrike, grasshopper sparrow, and Modesto song sparrow. Individuals of these species may nest in open woodland, grassland, or riparian habitats, respectively, on site. Portions of these habitats would be removed by project implementation, but large areas of oak woodland, grassland, and riparian habitat would be preserved in the open space areas, especially along Alder Creek. **Direct** and **indirect** impacts of project implementation on these species are considered **less than significant** because potential loss of a few individuals is not likely to result in a substantial effect on their populations.

American badger is a wide-ranging species that uses grassland and oak woodland habitats. American badger has been documented adjacent to the SPA by Matus (1981, cited in GenCorp 2007e), and nearly the entire SPA provides suitable habitat. It is unknown if the species currently occurs in the SPA. Although implementation of the Proposed Project Alternative would result in loss of habitat for American badger, oak woodland and grassland habitat would be preserved in the open space areas and abundant grassland habitat is present to the south of the SPA. The loss of habitat from the SPA would not be likely to cause loss of individuals because there would still be adequate suitable foraging and denning habitat in the area to support the local population. Therefore, **direct** and **indirect** impacts to American badger are considered **less than significant**.

Mitigation Measure: Implement Mitigation Measures 3A.3-1a, 3A.3-1b, 3A.3-2a, 3A.3-2b, 3A.3-2c, and 3A.3-2d.

Mitigation Measure 3A.3-2g: Secure Take Authorization for Federally Listed Vernal Pool Invertebrates and Implement All Permit Conditions.

No project construction shall proceed in areas supporting potential habitat for Federally listed vernal pool invertebrates, or within adequate buffer areas (250 feet or lesser distance deemed sufficiently protective by a qualified biologist with approval from USFWS), until a biological opinion (BO) has been issued by USFWS and the project applicant(s) of all project phases have abided by conditions in the BO (including conservation and minimization measures) intended to be completed before on-site construction. Conservation and minimization measures shall include preparation of supporting documentation describing methods to protect existing vernal pools during and after project construction, a detailed monitoring plan, and reporting requirements.

As described under Mitigation Measure 3A.3-1a, an MMP shall be developed that describes details how loss of vernal pool and other wetland habitats shall be offset, including details on creation of habitat, account for the temporal loss of habitat, contain performance standards to ensure success, and outline remedial actions if performance standards are not met.

The project applicant(s) of all project phases shall complete and implement a habitat MMP that will result in no net loss of acreage, function, and value of affected vernal pool habitat. The final habitat MMP shall be consistent with guidance provided in *Programmatic Formal Endangered Species Act Consultation on Issuance of 404 Permits for Projects with Relatively Small Effects on Listed Vernal Pool Crustaceans within the Jurisdiction of the Sacramento Field Office, California* (USFWS 1996) or shall provide an

alternative approach that is acceptable to the City, USACE, and USFWS and accomplishes no net loss of habitat acreage, function, and value.

The project applicant(s) of all project phases shall ensure that there is sufficient upland habitat within the target areas for creation and restoration of vernal pools and vernal pool complexes to provide ecosystem health. The project applicant(s) of all project phases shall identify the extent of indirectly affected vernal pool and seasonal wetland habitat, either by identifying all such habitat within 250 feet of project construction activities or by providing an alternative technical evaluation. If a lesser distance is pursued, this distance shall be approved by USFWS. The project applicant(s) shall preserve acreage of vernal pool habitat for each wetted acre of any indirectly affected vernal pool habitat at a ratio approved by USFWS at the conclusion of the Section 7 consultation. This mitigation shall occur before the approval of any grading or improvement plans for any project phase that would allow work within 250 feet of such habitat, and before any ground-disturbing activity within 250 feet of the habitat. The project applicant(s) will not be required to complete this mitigation measure for direct or indirect impacts that have already been mitigated to the satisfaction of USFWS through another BO or mitigation plan (i.e., if impacts on specific habitat acreage are mitigated by one project phase or element, the project applicant(s) will not be required to mitigate for it again in another phase of the project).

A standard set of BMPs shall be applied to construction occurring in areas within 250 feet of off-site vernal pool habitat, or within any lesser distance deemed adequate by a qualified biologist (with approval from USFWS) to constitute a sufficient buffer from such habitat. Refer to Section 3A.9, "Hydrology and Water Quality - Land" for the details of BMPs to be implemented.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties, or Caltrans).

Implementation: Project applicant(s) of all project phases.

Timing: Before the approval of any grading or improvement plans, before any ground-disturbing activities within 250 feet of said habitat, and on an ongoing basis throughout construction as applicable for all project phases as required by the mitigation plan, BO, and/or BMPs.

Enforcement:

1. U.S. Army Corps of Engineers, Sacramento District; U.S. Fish and Wildlife Service.
2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
3. For the two roadway connections in El Dorado Hills: El Dorado County Development Services Department.
4. For the U.S. 50 interchange improvements: Caltrans.
4. For the detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.

Mitigation Measure 3A.3-2h: Obtain Incidental Take Permit for Impacts on Valley Elderberry Longhorn Beetle and Implement All Permit Conditions.

Before each phase of the project, the project applicant(s) shall have a qualified biologist identify any elderberry shrubs within 100 feet of the project footprint and conduct a survey for valley elderberry

longhorn beetle exit holes in stems greater than 1 inch in diameter. If no project activity, including grading or use of herbicides, would occur within 100 feet of an elderberry shrub, then no further mitigation shall be required for valley elderberry longhorn beetle in those areas.

If project activities would occur within 100 feet of any elderberry shrubs, consultation with USFWS under Section 7 will be required. No project construction shall proceed in areas potentially containing valley elderberry longhorn beetle until a BO has been issued by USFWS, and the project applicant(s) of all project phases have abided by all pertinent conditions in the BO relating to the proposed construction, including conservation and minimization measures, intended to be completed before on-site construction. Conservation and minimization measures are likely to include preparation of supporting documentation that describes methods for relocation of existing shrubs and maintaining existing shrubs and other vegetation in a conservation area.

Relocation of existing elderberry shrubs and planting of new elderberry seedlings shall be implemented on a no-net-loss basis. Compensatory mitigation for elderberry shrubs that would be removed from their current locations would be developed in consultation with USFWS during the Section 7 consultation process. Compensatory mitigation may include planting replacement elderberry seedlings or cuttings and associated native plants within the open space areas of the SPA, planting replacement elderberry seedlings or cuttings and associated native plants at a suitable off-site location, purchasing credits at an approved mitigation bank, or a combination thereof. Relocated and replacement shrubs and associated native plantings shall be placed in conservation areas providing a minimum of 1,800 square feet per transplanted shrub. These conservation areas shall be preserved in perpetuity as habitat for valley elderberry longhorn beetle. The number of elderberry shrubs that would be affected by implementing the project is expected to be low because there are currently a total of less than 10 shrubs known to be present in the SPA. Ratios for mitigation of valley elderberry longhorn beetle habitat will ultimately be determined through the ESA Section 7 consultation process with USFWS, but shall be a minimum of "no net loss." USFWS uses stem count data, presence or absence of exit holes, and whether the affected elderberry shrubs are located in riparian habitat to determine the number of elderberry seedlings or cuttings and associated riparian vegetation that would need to be planted as compensatory mitigation for affected elderberry longhorn beetle habitat. The final VELB mitigation plan, including transplanting procedures, long-term protection, management of the mitigation areas, and monitoring procedures shall be consistent with the *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (USFWS 1999).

The population of valley elderberry longhorn beetles, the general condition of the conservation area, and the condition of the elderberry and associated native plantings in the conservation area must be monitored over a period of either ten consecutive years or for seven years over a 15-year period. A minimum survival rate of at least 60% of the elderberry plants and 60% of the associated native plants must be maintained throughout the monitoring period. Within one year of discovering that survival has dropped below 60%, the project applicant(s) shall replace failed plantings to bring survival above this level. Detailed information on monitoring success of relocated and planted shrubs and measures to compensate (should success criteria not be met) would be required in the BO.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries (i.e., U.S. 50 interchange improvements) must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., Caltrans).

Implementation: Project applicant(s) of all project phases.

Timing: Before the approval of any grading or improvement plans or any ground-disturbing activity within 100 feet of valley elderberry longhorn beetle habitat as applicable for all project phases, and on an ongoing basis as required by BO.

Enforcement:

1. U.S. Army Corps of Engineers, Sacramento District; U.S. Fish and Wildlife Service.
2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
3. For the U.S. 50 interchange improvements: Caltrans.

RIM

Wildlife Associated with Vernal Pools

The Resource Impact Minimization Alternative would result in permanent fill of approximately 1 acre of vernal pool, 3 acres of seasonal wetlands, and 13 acres of seasonal wetland swales, which is 6 acres less of potential habitat for vernal pool fairy shrimp, conservancy fairy shrimp, vernal pool tadpole shrimp, and western spadefoot toad directly affected than the Proposed Project Alternative. Indirect effects on vernal pool species would also be less because the Resource Impact Minimization Alternative generally includes at least a 250-foot buffer around wetland habitats, resulting in an additional 379 acres of open space, which would preserve more of the micro watersheds and maintain greater hydrologic function of wetland habitats. However, permanent loss of habitat for vernal pool fairy shrimp, conservancy fairy shrimp, vernal pool tadpole shrimp, and western spadefoot would still occur, and direct take of individuals could occur, as a result of implementation of the Resource Impact Minimization Alternative. Indirect effects to these species would still occur as a result of development in uplands adjacent to wetland habitats, including alteration of the topography and hydrologic function, increased run-off from adjacent impervious surfaces, and degraded water quality from containments. Therefore **direct** and **indirect** impacts to vernal pool-associated wildlife species would be **significant.** ***[Lesser]***

Swainson's Hawk and Other Raptors

The Resource Impact Minimization Alternative would result in removal of approximately 312 acres of oak woodland, which provides potential nesting habitat for Swainson's hawk and other raptors. Tree removal during the raptor breeding season (February–August) could result in mortality of eggs and chicks if an active nest were present. Other construction activities could disturb active nests near the construction area or in trees not yet removed from the SPA, potentially resulting in nest abandonment by the adults and mortality of chicks and eggs. Implementation of the Resource Impact Minimization Alternative would result in the direct loss of almost 2,000 acres of grassland, which provides foraging habitat for Swainson's hawk and other raptors. Some of the remaining 597 acres of grassland habitat would be directly affected by contour grading, recreational amenities, and other activities within the open space area. In addition, this alternative would result in indirect effects to the nesting and foraging habitat remaining in the SPA due to disturbance from use of adjacent development, which could reduce nest success and foraging habitat quality. Therefore, **direct** and **indirect** impacts to Swainson's hawk and other raptors would be **significant.** ***[Similar]***

Valley Elderberry Longhorn Beetle

Implementation of the Resource Impact Minimization Alternative could result in removal of elderberry shrubs containing valley elderberry longhorn beetle larvae. Indirect impacts from ground-disturbing activities or use of herbicides could also result if the health of elderberry shrubs containing valley elderberry longhorn beetle larvae is adversely affected. Therefore, **direct** and **indirect** impacts to valley elderberry longhorn beetle are considered to be **significant**. ***[Similar]***

Tricolored Blackbird

Construction activities during implementation of the Resource Impact Minimization Alternative could result in disturbance to tricolored blackbird colonies, which may result in nest abandonment and loss of eggs or young. Due to the potential for large numbers of nesting tricolored blackbirds to be lost, this **direct** impact would be considered **potentially significant**. Because project activities adjacent to potential nesting habitat are not expected to result in the mortality of individuals, chicks, or eggs, **indirect impacts** would be considered **less than significant**. ***[Similar]***

Special-Status Bats

Implementation of the Resource Impact Minimization Alternative would likely require an abandoned mine shaft to be filled or capped. If the mine shaft is used by bats as a day roost, hibernation roost, or maternity colony roost, implementation of this alternative could result in injury and mortality of pallid bat, Townsend's big-eared bat, or other common bat species. Project activities could result in **significant direct** or **indirect** impacts on special-status bat species. ***[Similar]***

Other Special-Status Species

The Resource Impact Minimization Alternative would have a **less-than-significant direct** and **indirect** impact on western pond turtle, loggerhead shrike, grasshopper sparrow, Modesto song sparrow, and American badger because implementation of this alternative would not substantially reduce their populations. ***[Similar]***

> Mitigation Measure: Implement Mitigation Measures 3A.3-1a, 3A.3-1b, 3A.3-2a, 3A.3-2b, 3A.3-2c, 3A.3-2d, 3A.3-2g, and 3A.3-2h.

CD

Wildlife Associated with Vernal Pools

The Centralized Development Alternative would result in permanent fill of approximately 3 acres of vernal pool, 3 acres of seasonal wetlands, and 18 acres of seasonal wetland swales, which is about 1 acre less of potential habitat for vernal pool fairy shrimp, conservancy fairy shrimp, vernal pool tadpole shrimp, and western spadefoot toad directly affected than the Proposed Project Alternative. Indirect effects on vernal pool species would also be less slightly less than the Proposed Project Alternative because the Centralized Development Alternative would designated an additional 414 acres of open space, which would preserve more of the uplands surrounding the wetlands, providing lager buffers and maintaining more of the micro watersheds and greater hydrologic function. However, permanent loss of habitat for vernal pool fairy shrimp, conservancy fairy shrimp, vernal pool tadpole shrimp, and western spadefoot would still occur as a result of implementation of the Centralized Development Alternative. Indirect effects to these species would still occur as a result of development in uplands adjacent to wetland habitats, including alteration of the topography and hydrologic function, increased runoff from adjacent impervious surfaces, and degraded water quality from containments. Therefore **direct** and **indirect** impacts to wildlife species associated with vernal pools would be **significant.** ***[Lesser]***

Swainson's Hawk and Other Raptors

The Centralized Development Alternative would result in removal of approximately 395 acres of oak woodland, which provides potential nesting habitat for Swainson's hawk and other raptors. Tree removal during the raptor breeding season (February–August) could result in mortality of eggs and chicks if an active nest were present. Other construction activities could disturb active nests near the construction area or in trees not yet removed from the SPA, potentially resulting in nest abandonment by the adults and mortality of chicks and eggs. Implementation of the Centralized Development Alternative would result in the direct loss of approximately 1,860

acres of grassland, which provides foraging habitat for Swainson's hawk and other raptors. Some of the remaining 734 acres of grassland habitat would be directly affected by contour grading, recreational amenities, and other activities within the open space area. In addition, this alternative would result in indirect effects to the nesting and foraging habitat remaining in the SPA due to disturbance from use of adjacent development, which could reduce nest success and foraging habitat quality. Therefore, **direct** and **indirect** impacts to Swainson's hawk and other raptors would be **significant.** ***[Similar]***

Valley Elderberry Longhorn Beetle

Implementation of the Centralized Development Alternative could result in removal of elderberry shrubs containing valley elderberry longhorn beetle larvae. Indirect impacts from ground-disturbing activities or use of herbicides could also result if the health of elderberry shrubs containing valley elderberry longhorn beetle larvae is adversely affected. Therefore, **direct** and **indirect** impacts to valley elderberry longhorn beetle would be **significant**. ***[Similar]***

Tricolored Blackbird

Construction activities during implementation of the Centralized Development Alternative could result in disturbance to tricolored blackbird colonies, which may result in nest abandonment and loss of eggs or young. Due to the potential for large numbers of nesting tricolored blackbirds to be lost, this **direct** impact would be considered **potentially significant**. Because project activities adjacent to potential nesting habitat are not expected to result in the mortality of individuals, chicks, or eggs, **indirect** impacts would be considered **less than significant**. ***[Similar]***

Special-Status Bats

Implementation of the Centralized Development Alternative would likely require an abandoned mine shaft to be filled or capped. If the mine shaft is used by bats as a day roost, hibernation roost, or maternity colony roost, implementation of this alternative could result in injury and mortality of pallid bat, Townsend's big-eared bat, or other common bat species. Project activities could result in **significant direct** or **indirect** impacts on special-status bat species. ***[Similar]***

Other Special-Status Species

The Centralized Development Alternative would have a **less-than-significant direct** and **indirect** impact on western pond turtle, loggerhead shrike, grasshopper sparrow, Modesto song sparrow, and American badger because implementation of this alternative would not substantially reduce their populations. ***[Similar]***

> Mitigation Measure: Implement Mitigation Measures 3A.3-1a and 3A.3-1b, 3A.3-2a, 3A.3-2b, 3A.3-2c, 3A.3-2d, 3A.3-2g, and 3A.3-2h.

RHD

Wildlife Associated with Vernal Pools

The Reduced Hillside Development Alternative would result in permanent fill of approximately 3.5 acre of vernal pool, 4 acres of seasonal wetlands, and 20 acres of seasonal wetland swales, which is about 3 acres more of potential habitat for vernal pool fairy shrimp, conservancy fairy shrimp, vernal pool tadpole shrimp, and western spadefoot toad directly affected than the Proposed Project Alternative. Indirect effects on vernal pool species would also be similar to the Proposed Project Alternative. Major grading and topographic modifications would occur throughout the SPA and similar wetland buffers would be provided as described in the Proposed Project Alternative. However, permanent loss of habitat for vernal pool fairy shrimp, conservancy fairy shrimp, vernal

pool tadpole shrimp, and western spadefoot would still occur as a result of implementation of the Reduced Hillside Development Alternative. Although this alternative includes control measures and performance standards that address stormwater flow, volume, and water quality for development areas to minimize hydrologic and geomorphic modifications, indirect effects to vernal pool associated species would still occur as a result of development in uplands adjacent to wetland habitats, due to alteration of the topography and hydrologic function, increased run-off from adjacent impervious surfaces, and degraded water quality from containments. Therefore **direct** and **indirect** impacts to wildlife species associated with vernal pools would be **significant.** ***[Greater]***

Swainson's Hawk and Other Raptors

The Reduced Hillside Development Alternative would result in removal of approximately 444 acres of oak woodland, which provides potential nesting habitat for Swainson's hawk and other raptors. Tree removal during the raptor breeding season (February–August) could result in mortality of eggs and chicks if an active nest were present. Other construction activities could disturb active nests near the construction area or in trees not yet removed from the SPA, potentially resulting in nest abandonment by the adults and mortality of chicks and eggs. Implementation of the Reduced Hillside Development Alternative would result in the direct loss of approximately 2,181 acres of grassland, which provides foraging habitat for Swainson's hawk and other raptors. Some of the remaining 413 acres of grassland habitat would be directly affected by contour grading, recreational amenities, and other activities within the open space area. In addition, this alternative would result in indirect effects to the nesting and foraging habitat remaining in the SPA due to disturbance from use of adjacent development, which could reduce nest success and foraging habitat quality. Therefore, **direct** and **indirect** impacts to Swainson's hawk and other raptors would be **significant.** ***[Similar]***

Valley Elderberry Longhorn Beetle

Implementation of the Reduced Hillside Development Alternative could result in removal of elderberry shrubs containing valley elderberry longhorn beetle larvae. Indirect impacts from ground-disturbing activities or use of herbicides could also result if the health of elderberry shrubs containing valley elderberry longhorn beetle larvae is adversely affected. Therefore, **direct** and **indirect** impacts to valley elderberry longhorn beetle would be **significant**. ***[Similar]***

Tricolored Blackbird

Construction activities during implementation of the Reduced Hillside Development Alternative could result in disturbance to tricolored blackbird colonies, which may result in nest abandonment and loss of eggs or young. Due to the potential for large numbers of nesting tricolored blackbirds to be lost, this **direct** impact would be considered **potentially significant**. Because project activities adjacent to potential nesting habitat are not expected to result in the mortality of individuals, chicks, or eggs, **indirect** impacts would be considered **less than significant**. ***[Similar]***

Special-Status Bats

Implementation of the Reduced Hillside Development Alternative would likely require an abandoned mine shaft to be filled or capped. If the mine shaft is used by bats as a day roost, hibernation roost, or maternity colony roost, implementation of this alternative could result in injury and mortality of pallid bat, Townsend's big-eared bat, or other common bat species. Project activities could result in **significant direct** or **indirect** impacts on special-status bat species. ***[Similar]***

Other Special-Status Species

The Reduced Hillside Development Alternative would have a **less-than-significant direct** and **indirect** impact on western pond turtle, loggerhead shrike, grasshopper sparrow, Modesto song sparrow, and American badger because implementation of this alternative would not substantially reduce their populations. ***[Similar]***

Mitigation Measure: Implement Mitigation Measures 3A.3-1a and 3A.3-1b, 3A.3-2a, 3A.3-2b, 3A.3-2c, 3A.3-2d, 3A.3-2g, and 3A.3-2h.

Off-Site Elements

Wildlife Associated with Vernal Pools

The off-site elements would result in fill of approximately 0.59 acres of vernal pool, 0.25 acres of seasonal wetlands, or 0.55 acres seasonal wetland swales, which are potential habitat for vernal pool fairy shrimp, conservancy fairy shrimp, vernal pool tadpole shrimp, and western spadefoot toad. Construction of the off-site elements that support project development could result in loss of individuals or potential habitat for special-status wildlife associated with vernal pools. Indirect effects could include habitat degradation from runoff, erosion, siltation, or alteration of the hydrologic function of the wetlands. Therefore, **significant direct** and **indirect** impacts would occur.

Swainson's Hawk and Other Raptors

Construction of the off-site elements could result in disturbance to nesting Swainson's hawk or other raptors or direct removal of nest trees. Ground-disturbing activities near active nest trees could result in nest abandonment by the adults and mortality of chicks and eggs. Although the interchange improvements would result in loss of approximately 43 acres of annual grassland, these area are not likely important raptor foraging areas, as they are adjacent to existing roadways and U.S. 50 and located in hilly terrain. Loss of an active Swainson's hawk or other raptor nest would be considered a **potentially significant direct** and **indirect** impact.

Valley Elderberry Longhorn Beetle

It is unknown if suitable habitat for valley elderberry longhorn beetle would be affected by the off-site elements. However, if elderberry shrubs with stems greater than 1 inch are present in or adjacent to project construction, **significant direct** or **indirect** impacts to valley elderberry longhorn beetle larvae could occur. There are no elderberry shrubs present at the off-site detention basin site or the off-site roadway connections into El Dorado County. Elderberry shrubs are present in the U.S. 50 Prairie City Road interchange improvement footprint.

Tricolored Blackbird

Construction activities for the off-site elements could result in disturbance to tricolored blackbird colonies, which may result in nest abandonment and loss of eggs or young. Due to the potential for large numbers of nesting tricolored blackbirds to be lost, this **direct** impact would be considered **potentially significant**. **Indirect** impacts on tricolored blackbirds from off-site construction would be **less than significant** because they are not expected to result in the mortality of individuals, chicks, or eggs.

Special-Status Bats

Construction of the off-site elements would not involve modification of any existing bridge or overpass structures or other habitat that could be used by roosting bats. Therefore, **no direct** or **indirect impacts** to special-status bats would occur.

Other Special-Status Species

Construction of the off-site elements would not remove or disturb important nesting habitat for loggerhead shrike, grasshopper sparrow, or Modesto song sparrow, and would not remove or disturb a substantial amount of suitable habitat for American badger or substantially reduce their populations. In addition, no aquatic habitat for western pond turtle would be affected by the off-site elements. Therefore, **direct** and **indirect** impacts from construction of the off-site elements to these special status species would be considered **less than significant**.

Mitigation Measure: Implement Mitigation Measures 3A.3-1a and 3A.3-1b, 3A.3-2a, 3A.3-2b, 3A.3-2c, 3A.3-2d, 3A.3-2g, and 3A.3-2h.

Implementation of Mitigation Measures 3A.3-2a, 3A.3-2b, 3A.3-2c, 3A.3-2d, 3A.3-2e, 3A.3-2f, 3A.3-2g, and 3A.3-2h would lessen significant direct and indirect impacts on special-status wildlife resulting from the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives; however, this impact would remain **significant and unavoidable** because the direct removal of approximately 2,700 acres and indirect effect to approximately 800 acres of potential habitat for special-status wildlife cannot be fully mitigated. In addition, some of the off-site elements (two roadway connections in El Dorado County, detention basin in Sacramento County, and U.S. 50 interchange improvements) fall under the jurisdiction of El Dorado and Sacramento Counties and Caltrans; therefore, neither the City nor the project applicant(s) would have control over their timing or implementation. The amount of habitat lost could potentially contribute to the decline of Swainson's hawk populations in the region. This decline would constitute a substantial adverse effect under CEQA.

Impacts on special-status wildlife species could be fully mitigated only through a combination of habitat preservation and restoration in the vicinity of the SPA. Parcels of similar habitat quality are currently present in the project vicinity, but these parcels would be of lesser value following development of the project because of the effects of habitat fragmentation and secondary and indirect impacts related to the project. Moreover, there would be a net loss of approximately 3,500 acres of potential habitat for special-status species regardless of the acreage preserved. Therefore, fully compensating for the impact by preserving existing habitat in the project vicinity is infeasible. The mitigation does include elements of habitat creation and enhancement that would increase the habitat value of preserved lands so that mitigation habitat could be of greater value than habitat lost and degraded, but there is not sufficient undeveloped land in the project vicinity to offset the effects of habitat fragmentation on special-status species, and thus, fully mitigate the impact, or reduce it to a less-than-significant level.

IMPACT 3A.3-3 Potential Loss or Degradation of Special-Status Plant Populations and Habitat. *Project implementation could result in direct removal of special-status plants, if they are present, through loss of suitable habitat or degradation of suitable habitat due to site alteration.*

On-Site and Off-Site Elements

NP

Under the No Project Alternative, the SPA would remain as open space used for livestock grazing consistent with the current AG-80 zoning designation, and no off-site water facilities would be constructed. Continuation of the existing land use would not result in substantial changes to the vegetation in the SPA or Water Facilities Study Area and habitat that could support special-status plants would not be removed. Therefore, potential **direct** and **indirect** impacts on special-status plants would be **less than significant**. ***[Lesser]***

NCP, PP, RIM, CD, RHD,

Eleven special-status plant species have the potential to occur in the SPA and off-site improvement areas in vernal pool, seasonal wetland, freshwater marsh, pond, oak woodland, and grassland habitats. Protocol-level surveys for eight of these species—Ahart's dwarf rush, Bogg's Lake hedge-hyssop, dwarf downingia, legenere, pincushion navarretia, Sacramento Orcutt grass, slender Orcutt grass, and Tuolumne button-celery—were conducted on the Folsom South property by ECORP in spring 2006 (MJM Properties LLC 2006) and no special-status plants were found. Protocol-level surveys were conducted on the Sacramento Country Day School property by Virginia Daines and Susan Saunders in spring 2005. Species targeted during the Country Day School surveys included the species targeted during the Folsom South surveys plus hoary navarretia (*Navarretia eriocephala*), a CNPS watch list species. No special-status plant species were found on the Sacramento Country Day School site. Neither of the

surveys included big scale balsamroot, Brandegee's clarkia, or Sanford's arrowhead as target species; therefore, these species could have been overlooked, if present during these surveys. Big scale balsamroot and Brandegee's clarkia grow in upland habitats that were not focused on during the Folsom South surveys because the target species of those surveys are associated with vernal pools or other wetland habitats. Sanford's arrowhead is an emergent species that grows in shallowly inundated areas such as pond edges or slow-moving stream channels. This species has been documented immediately adjacent to the SPA. It is unlikely that ponds were included in the Folsom South surveys, since species targeted during those surveys do not typically grow in ponds. Suitable habitat for Sanford's arrowhead is not likely present on the Sacramento Country Day School site.

In 2009, ECORP conducted protocol-level surveys at the Hillsborough and Prairie City Business Park properties for all of the target species listed previously, except for big-scale balsamroot. No special-status plant species were found during these surveys.

Protocol-level special-status plant surveys were conducted on the Carpenter Ranch property by Gibson and Skordal during April, May, and June 2009. All of the target species were included in these surveys. No special-status plant species were found during the surveys conducted on Carpenter Ranch.

Special-status plant surveys have not been conducted on any of the other properties comprising the SPA or in any of the off-site improvement areas. Bogg's Lake hedge-hyssop, a species that is state-listed as endangered, has been documented in close proximity to the proposed off-site detention basin near the southwest boundary of the SPA. Potentially suitable habitat for this species is present on the proposed off-site detention basin site and there is high potential for it to be present there. Potentially suitable habitat for special-status plants is also present in the interchange improvement areas and the roadway connections into El Dorado County. In addition, because the project would be constructed in phases over a period of approximately 15 to 20 years, special-status plants could colonize previously surveyed areas before construction begins. Therefore, the possibility that special-status plants are present, or would be present at the beginning of construction, in the SPA or off-site improvement areas cannot be eliminated at this time.

Loss of suitable habitat as a result of project development could result in direct removal or mortality of special-status plants, if they are present. Project development could also result in indirect impacts on special-status plants including impacts caused by pollutants transported by urban runoff and other means, changes in vegetation as a result of changes in land use and management practices, altered hydrology from the construction of adjacent residential development and roadways, habitat fragmentation, and the introduction of invasive species or noxious weeds from surrounding development.

Because project development would result in loss and degradation of habitat that could support special-status plant species, **direct** and **indirect** impacts on special-status plant species are considered **potentially significant**. ***[Similar]***

> Mitigation Measure 3A.3-3: Conduct Special-Status Plant Surveys; Implement Avoidance and Mitigation Measures or Compensatory Mitigation.
>
> To mitigate for the potential loss or degradation of special-status plant species and habitat, the project applicant(s) of all project phases shall adhere to the requirements described below.
>
> - The project applicant(s) of all proposed project phases, including the proposed off-site elements, shall retain a qualified botanist to conduct protocol level preconstruction special-status plant surveys for all potentially occurring species. If no special-status plants are found during focused surveys, the botanist shall document the findings in a letter report to USFWS, DFG, the City of Folsom, Caltrans (for interchange improvements to U.S. 50), El Dorado County (for roadway connections in El Dorado County), and Sacramento County (for the off-site detention basin) and no further mitigation shall be required.

- If special-status plant populations are found, the project applicant(s) of affected project phases shall consult with DFG and USFWS, as appropriate depending on species status, to determine the appropriate mitigation measures for direct and indirect impacts on any special-status plant population that could occur as a result of project implementation. Mitigation measures may include preserving and enhancing existing populations, creation of off-site populations on project mitigation sites through seed collection or transplantation, and/or restoring or creating suitable habitat in sufficient quantities to achieve no net loss of occupied habitat or individuals.

- If potential impacts on special-status plant species are likely, a mitigation and monitoring plan shall be developed before the approval of grading plans or any ground-breaking activity within 250 feet of a special-status plant population. The mitigation plan shall be submitted to Caltrans (for interchange improvements to U.S. 50), El Dorado County (for impacts in roadway connections in El Dorado County), Sacramento County (for impacts in the off-site detention basin footprint), or the City of Folsom (for on-site impacts and all other off-site elements), for review and approval. It shall be submitted concurrently to DFG or USFWS, as appropriate depending on species status, for review and comment. The plan shall require maintaining viable plant populations on-site and shall identify avoidance measures for any existing population(s) to be retained and compensatory measures for any populations directly affected. Possible avoidance measures include fencing populations before construction and exclusion of project activities from the fenced-off areas, and construction monitoring by a qualified botanist to keep construction crews away from the population. The mitigation plan shall also include monitoring and reporting requirements for populations to be preserved on site or protected or enhanced off-site.

- If relocation efforts are part of the mitigation plan, the plan shall include details on the methods to be used, including collection, storage, propagation, receptor site preparation, installation, long-term protection and management, monitoring and reporting requirements, and remedial action responsibilities should the initial effort fail to meet long-term monitoring requirements.

- If off-site mitigation includes dedication of conservation easements, purchase of mitigation credits or other off-site conservation measures, the details of these measures shall be included in the mitigation plan, including information on responsible parties for long-term management, conservation easement holders, long-term management requirements, and other details, as appropriate to target the preservation on long term viable populations.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., Caltrans, El Dorado and/or Sacramento Counties).

Implementation: Project applicant(s) of all project phases and on- and off-site elements.

Timing: Before approval of grading or improvement plans or any ground disturbing activities, including grubbing or clearing, for any project phase, including off-site elements.

Enforcement:

1. U.S. Fish and Wildlife Service, California Department of Fish and Game.
2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
3. For the two roadway connections in El Dorado Hills: El Dorado County Development Services Department.
4. For the detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.

5. For the U.S. 50 interchange improvements: Caltrans.

Implementation of Mitigation Measure 3A.3-3 would reduce the potentially significant impacts on special-status plant species under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives to a **less-than-significant** level because each phase of development would be required to identify and avoid special-status plant populations or provide compensation for the loss of special-status plants through creation of off-site populations, conservation easements, or other appropriate measures. However, some of the off-site elements (U.S. 50 interchange improvements, two roadway connections in El Dorado County, and detention basin in Sacramento County) fall under the jurisdiction of Caltrans, El Dorado County, and Sacramento County, respectively. Therefore, neither the City nor the project applicant(s) would have control over their timing or implementation. Because the City does not control implementation of mitigation measures for off-site improvements constructed in areas under the jurisdiction of Caltrans, Sacramento County, or El Dorado County, this impact is considered **potentially significant and unavoidable** for off-site improvements that would be located in those jurisdictions.

IMPACT 3A.3-4 Loss of Sensitive Natural Communities (Not Already Covered under Other Impacts). *Project implementation would result in loss of riparian habitat, and valley needlegrass grassland that may be present in the SPA and could be removed by project development. These are natural communities considered sensitive by state and local resource agencies and require consideration under CEQA.*

On-Site and Off-Site Elements

NP

Under the No Project Alternative, the SPA would remain as open space used for livestock grazing consistent with the current AG-80 zoning designation, and no off-site water facilities would be constructed. Under the No Project Alternative, topography would not be altered, existing vegetation would not be removed, and no loss or alteration of vernal pools or other aquatic habitats would be expected. Therefore, potential **direct** and **indirect** impacts on sensitive natural communities would be **less than significant**. ***[Lesser]***

NCP, PP, RIM, CD, RHD

The SPA supports approximately 11 acres of riparian habitat. Implementation of the No USACE Permit and Resource Minimization Alternatives would each result in removal 0.50 acre of riparian habitat, while the Proposed Project Alternative would result in removal of approximately 0.70 acre of riparian habitat associated with Alder Creek and its tributaries. Implementation of the Centralized Development and Reduced Hillside Development Alternatives would each result in loss of 0.69 acres of riparian habitat. Construction of the Prairie City Road and Oak Avenue interchanges would result in removal of an additional 3.3 acres of riparian habitat associated with Alder Creek and tributaries. These off-site impacts would be the same under each action alternative and would not occur under the No Project Alternative because the interchanges would not be constructed or improved without project implementation. Construction of the off-site detention basin, the Rowberry Drive Overcrossing, the underground sewer force main, and two off-site roadway connections into El Dorado County would have no impact on riparian habitat. The interchange improvements to U.S. 50 at Prairie City Road would affect riparian habitat.

Potential indirect impacts on riparian habitat include degradation caused by pollutants transported by urban runoff, changes in vegetation as a result of changes in land use and management practices, altered site hydrology from the construction of adjacent residential development and roadways, and the introduction of invasive species or noxious weeds from the surrounding development, and intrusion by humans and domestic animals that could disturb riparian vegetation and reduce habitat values.

The SPA may also support valley needlegrass grassland, a community identified as sensitive by DFG and tracked in the CNDDB. Although plant communities in the SPA were mapped by ECORP, valley needlegrass grassland blends in with annual grassland and often occurs as small patches in large expanses of annual grassland. For this reason it is easily overlooked unless someone is specifically searching for it and may be present in patches too small to have been identified at the coarse scale that upland habitats were mapped. Valley needlegrass grassland has been identified adjacent to the SPA and could be present in the SPA. If present, valley needlegrass grassland could be removed as a result of project implementation. This community was not found in any of the off-site improvement areas.

The loss and degradation of riparian habitat that would occur with project implementation constitutes an adverse effect on a sensitive natural community regulated by DFG under Section 1602 of the California Fish and Game Code. Therefore, a **direct** and **indirect significant** impact would result. ***[Similar]***

The loss of valley needlegrass grassland would be an adverse affect on a sensitive natural community. Because it is unknown if this community is present in the SPA, this is considered a **potentially significant direct** impact. ***[Similar]***

Mitigation Measure: Implement Mitigation Measures 3A.3-1a and 1b.

Mitigation Measure 3A.3-4a: Secure and Implement Section 1602 Streambed Alteration Agreement.

The project applicant(s) of all project phases shall obtain a Section 1602 streambed alteration agreement from DFG for all construction activities that would occur in the bed and bank of Alder Creek and other drainage channels and ponds in the SPA. As a condition of issuance of the streambed alteration agreement, the project applicant(s) for all project phases affecting riparian habitat shall hire a qualified restoration ecologist to prepare a riparian habitat MMP. The draft MMP shall describe specific method(s) to be implemented to avoid and/or compensate for impacts on the stream channel of Alder Creek and other drainage channels within DFG jurisdiction, and the bed and banks of the on-site ponds. Mitigation measures may include establishment or restoration of riparian habitat within the project's open space areas along preserved stream corridors, riparian habitat restoration off-site, or preservation and enhancement of existing riparian habitat either on or off the SPA. The compensation habitat shall be similar in composition and structure to the habitat to be removed and shall be at ratios adequate to offset the loss of riparian habitat functions and services at the SPA. The riparian habitat compensation section of the habitat MMP shall include the following:

- compensatory mitigation sites and criteria for selecting these mitigation sites;
- complete assessment of the existing biological resources in both the on-site and off-site preservation and restoration areas;
- site-specific management procedures to benefit establishment and maintenance of native riparian plant species, including black willow, arroyo willow, white alder, and Fremont cottonwood;
- a planting and irrigation program if needed for establishment of native riparian trees and shrubs at strategic locations within each mitigation site (planting and irrigation may not be necessary if preservation of functioning riparian habitat is chosen as mitigation or if restoration can be accomplished without irrigation or planting);
- in kind reference habitats for comparison with compensatory riparian habitats (using performance and success criteria) to document success;
- monitoring protocol, including schedule and annual report requirements (compensatory riparian habitats shall be monitored for a minimum period of five years);

- ecological performance standards, based on the best available science and including specifications for native riparian plant densities, species composition, amount of dead woody vegetation gaps and bare ground, and survivorship; at a minimum, compensatory mitigation planting sites must achieve 80% survival of planted riparian trees and shrubs by the end of the five-year maintenance and monitoring period or dead and dying trees shall be replaced and monitoring continued until 80% survivorship is achieved;

- corrective measures if performance standards are not met;

- responsible parties for monitoring and preparing reports; and

- responsible parties for receiving and reviewing reports and for verifying success or prescribing implementation or corrective actions.

Any conditions of issuance of the Streambed Alteration Agreement shall be implemented as part of project construction activities that adversely affect the bed and bank and riparian habitat associated with Alder Creek and other drainage channels and ponds that are within the project area that is subject to DFG jurisdiction. The agreement shall be executed by the project applicant(s) and DFG before the approval of any grading or improvement plans or any construction activities in any project phase that could potentially affect the bed and bank of Alder Creek and other on-site or off-site drainage channels under DFG jurisdiction and their associated freshwater marsh and riparian habitat.

Mitigation for the U.S. 50 interchange improvements must be coordinated by the project applicant(s) of each applicable project phase with the Caltrans.

Implementation: Project applicant(s) of all project phases and the off-site Prairie City Road and Oak Avenue interchange improvements.

Timing: Before the approval of grading or improvement plans or any construction activities (including clearing and grubbing) that affect the bed and bank or riparian and freshwater marsh habitat associated with Alder Creek and other on-site or off-site drainage channels and ponds.

Enforcement:

1. California Department of Fish and Game,

2. City of Folsom Community Development Department.

3. Caltrans for interchange improvements to U.S. 50.

Mitigation Measure 3A.3-4b: Conduct Surveys to Identify and Map Valley Needlegrass Grassland; Implement Avoidance and Minimization Measures or Compensatory Mitigation.

The project applicant(s) of all project phases shall retain a qualified botanist to conduct preconstruction surveys to determine if valley needlegrass grassland is present in the SPA. This could be done concurrently with any special-status plant surveys conducted on site as special-status plant surveys are floristic in nature, i.e. require that all species encountered be identified, and require preparation of a plant community map. If valley needlegrass grassland is not found in the SPA, the botanist shall document the findings in a letter report to the City of Folsom, and no further mitigation shall be required. Valley needlegrass grassland was not found in any of the off-site project elements.

If valley needlegrass grassland is found in the SPA, the location and extent of the community shall be mapped and the acreage of this community type, if any, that would be removed by project implementation shall be calculated. The project applicant(s) for all project phases affecting valley needlegrass grassland

shall consult with DFG and the City of Folsom to determine appropriate mitigation for removal of valley needlegrass grassland resulting from project implementation. Mitigation measures may include establishment of valley needlegrass grassland within project's open space areas currently characterized by annual grassland, establishment of valley needlgrass grassland off-site, or preservation and enhancement of existing valley needlegrass grassland either on or off the SPA.

Implementation: Project applicant(s) of all project phases.

Timing: Before approval of grading or improvement plans or any ground-disturbing activities, including grubbing or clearing, for any project phase.

Enforcement: 1. California Department of Fish and Game,

2. City of Folsom Community Development Department.

Implementation of Mitigation Measures 3A.3-4a and 3A.3-4b would reduce significant impacts on sensitive natural communities under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives, and the off-site Prairie City Road and Oak Avenue interchange elements to a **less-than-significant** level because a mitigation and monitoring plan ensuring adequate compensation for the loss of riparian habitat would have to be developed and implemented as a condition of the streambed alteration permit and because valley needlegrass grassland would be identified and mapped in the SPA and the removed acreage of this community would be compensated through establishment elsewhere or preservation and enhancement of existing acreage of valley needlegrass grassland. However, some of the off-site elements (U.S. 50 interchange improvements) fall under the jurisdiction of Caltrans; therefore, neither the City nor the project applicant(s) would have control over their timing or implementation. Because the City does not control implementation of mitigation measures for off-site improvements constructed in areas under the jurisdiction of Caltrans, this impact is considered **potentially significant and unavoidable** for off-site improvements which would be located in Caltrans jurisdiction.

IMPACT 3A.3-5 Loss of Blue Oak Woodland and Individual Oak Trees. *Project implementation would result in the removal of blue oak woodland. In addition, individual oak trees meeting the criteria for protection under Folsom Municipal Code and the Sacramento County Tree Ordinance, but not included within the oak woodland, would also be removed.*

On-Site and Off-Site Elements

NP

Under the No Project Alternative, the SPA would remain as open space used for livestock grazing consistent with the current AG-80 zoning designation, and no off-site water facilities would be constructed. Under this alternative, site topography would not be altered and existing woodland vegetation would not be removed. Therefore, potential **direct** and **indirect** impacts on blue oak woodland and individual oak trees would be **less than significant**. ***[Lesser]***

On-Site Elements

NCP, RIM, CD

The Resource Impact Minimization, Centralized Development, and No USACE Permit Alternatives preserve a greater proportion of the on-site oak resources than the Proposed Project and Reduced Hillside Development Alternatives, but each would still result in removal of substantial acreage of blue oak woodland and protected trees.

Table 3A.3-5 provides a side-by-side comparison of the acreage of oak woodland impacts and percent preserved for each alternative. The No USACE Permit Alternative would remove the least acreage of blue oak woodland, and would preserve 79% of the existing blue oak woodland in the SPA. See Exhibits 3A.3-9, 3A.3-10, and 3A.3-11 for the habitat locations and acreages under each of the alternatives.

Table 3A.3-5
Summary of Blue Oak Woodland Impacts and Preservation for Each Project Alternative

Alternative	Acres of Existing Habitat	Acres of Impact	Acres Preserved	Percent Preserved
No Project	642.1	Unknown	Unknown	Unknown
No USACE Permit	642.1	130.1	512.1	79
Proposed Project	642.1	243.1	399.1	62
Resource Impact Minimization	642.1	154.7	487.5	75
Centralized Development	642.1	213.5	428.6	66
Reduced Hillside Development	642.1	245.8	396.4	61

Note: The acres of impact and acres and percent preserved cannot be determined under the No Project Alternative. Making such estimates would be considered too speculative for meaningful consideration because it cannot be predicted if such development under the Sacramento County General Plan would occur and the location in which it would occur. Development applications would be submitted and processed individually through the County.
Source: ECORP 2009a

Development of the No USACE Permit, Resource Impact Minimization, and Centralized Development Alternatives would involve similar contour grading, mitigation planting, road and trail development, and creation of impervious surfaces within and immediately adjacent to open space areas as the Proposed Project Alternative. These activities could result in indirect impacts affecting oak tree root systems. Trenching, grading, soil compaction, placement of fill, impervious surfaces, irrigation, and landscaping within the drip lines of oak trees could lead to root damage ultimately resulting in death of the tree. Additional indirect impacts could result from habitat fragmentation, introduction of invasive species or noxious weeds, vegetation management practices (e.g., clearing for fire control), and intrusion by humans and domestic animals that could disturb oak woodland vegetation and reduce habitat values.

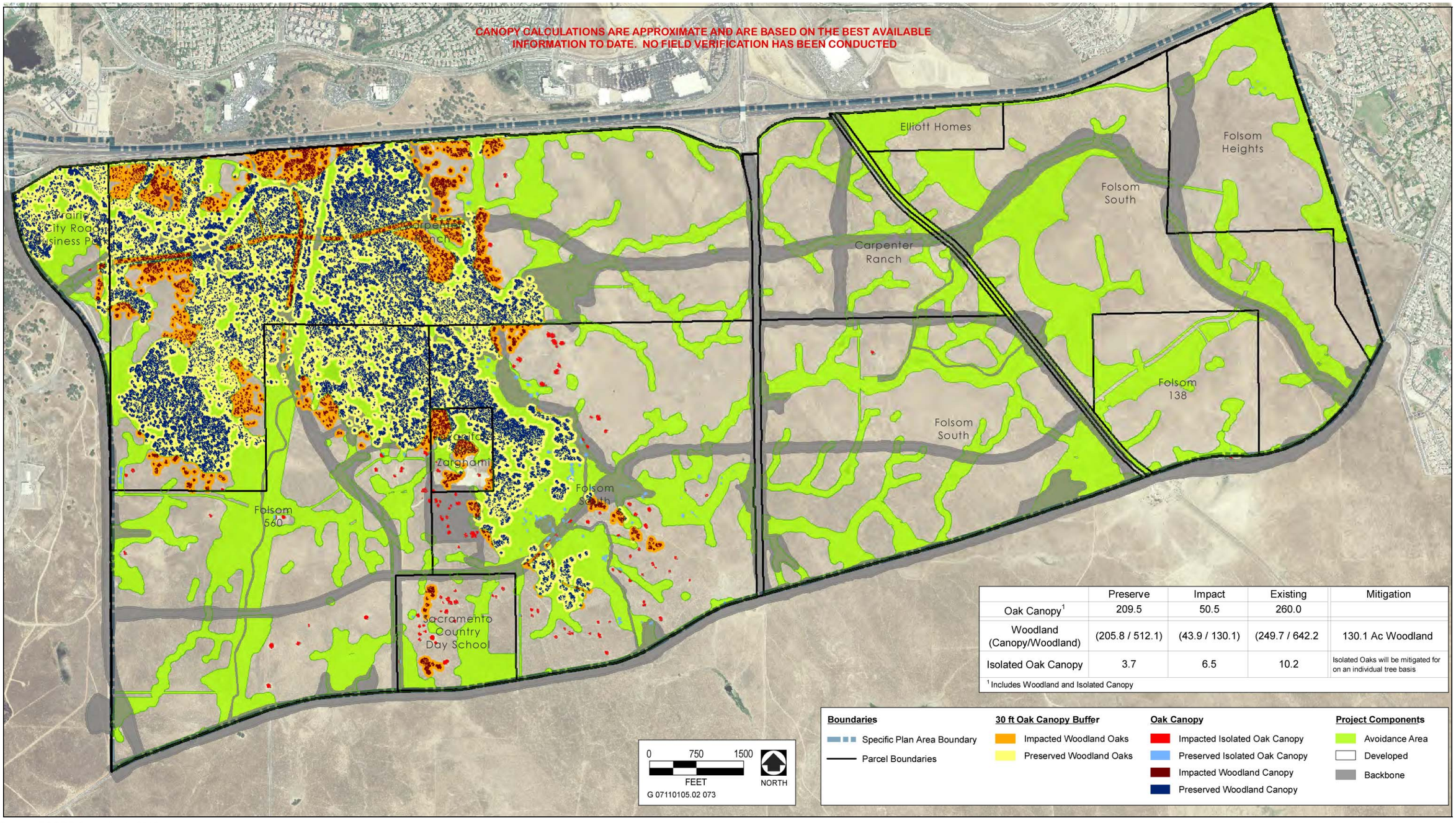
Because the No USACE Permit, Resource Impact Minimization, and Centralized Development Alternatives would result in the removal of substantial acreage of blue oak woodland and individual oak trees meeting minimum dbh criteria, a **direct significant** impact would result, but to a lesser degree than the Proposed Project Alternative. ***[Lesser]***

Because the No USACE Permit, Resource Impact Minimization, and Centralized Development Alternatives would result in urbanization adjacent to blue oak woodland and would include development activities that could mortally damage oak trees, including grading, trenching, and impervious surfaces, an **indirect significant** impact would result. ***[Similar]***

Mitigation Measure 3A.3-5: Conduct Tree Survey, Prepare and Implement an Oak Woodland Mitigation Plan, Replace Native Oak Trees Removed, and Implement Measures to Avoid and Minimize Indirect Impacts on Oak Trees and Oak Woodland Habitat Retained On Site.

The project applicant(s) shall prepare an oak woodland mitigation and monitoring plan. The project applicant(s) of all on- and off-site project phases containing oak woodland habitat shall adhere to the requirements described below, which are consistent with those outlined in California Public Resources Code 21083.4.

CANOPY CALCULATIONS ARE APPROXIMATE AND ARE BASED ON THE BEST AVAILABLE INFORMATION TO DATE. NO FIELD VERIFICATION HAS BEEN CONDUCTED



	Preserve	Impact	Existing	Mitigation
Oak Canopy[1]	209.5	50.5	260.0	
Woodland (Canopy/Woodland)	(205.8 / 512.1)	(43.9 / 130.1)	(249.7 / 642.2	130.1 Ac Woodland
Isolated Oak Canopy	3.7	6.5	10.2	Isolated Oaks will be mitigated for on an individual tree basis

[1] Includes Woodland and Isolated Canopy

Boundaries
- Specific Plan Area Boundary
- Parcel Boundaries

30 ft Oak Canopy Buffer
- Impacted Woodland Oaks
- Preserved Woodland Oaks

Oak Canopy
- Impacted Isolated Oak Canopy
- Preserved Isolated Oak Canopy
- Impacted Woodland Canopy
- Preserved Woodland Canopy

Project Components
- Avoidance Area
- Developed
- Backbone

Source: ECORP Consultants 2010

Oak Woodland Resources under the No USACE Permit Alternative

Exhibit 3A.3-9

CANOPY CALCULATIONS ARE APPROXIMATE AND ARE BASED ON THE BEST AVAILABLE INFORMATION TO DATE. NO FIELD VERIFICATION HAS BEEN CONDUCTED

Elliott Homes

Folsom Heights

Folsom South

Carpenter Ranch

Folsom 138

Folsom South

Folsom 560

Sacramento Country Day School

	Preserve	Impact	Existing	Mitigation
Oak Canopy[1]	200.0	60.0	260.0	
Woodland (Canopy/Woodland)	(196.7 / 487.5)	(53.1 / 154.7)	(249.8 / 642.2	154.7 Ac Woodland
Isolated Oak Canopy	3.3	6.9	10.2	Isolated Oaks will be mitigated for on an individual tree basis

[1] Includes Woodland and Isolated Canopy

Boundaries
- Specific Plan Area Boundary
- Parcel Boundaries

30 ft Oak Canopy Buffer
- Impacted Woodland Oaks
- Preserved Woodland Oaks

Oak Canopy
- Impacted Isolated Oak Canopy
- Preserved Isolated Oak Canopy
- Impacted Woodland Oak Canopy
- Preserved Woodland Oak Canopy

Project Components
- Open Space (Possible Temporary Disturbance) - Canopy Calculated as Avoided
- 30ft Inward Open Space (Possible Temporary Disturbance) - Canopy Calculated as Impact
- Project - Canopy Calculated as Impact
- Backbone - Canopy Calculated as Impact

0 750 1500
FEET
NORTH
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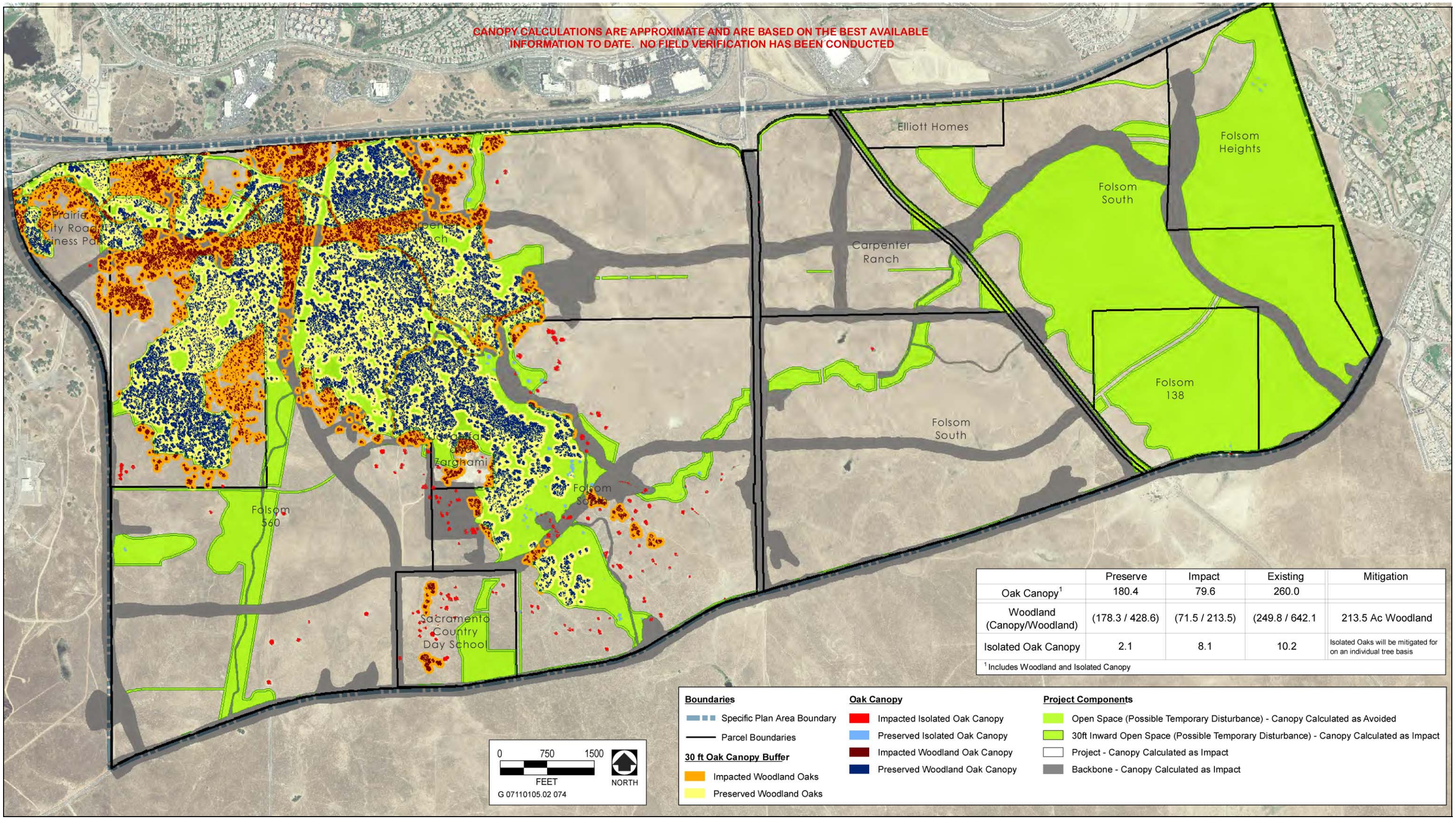
Source: ECORP Consultants 2010

Oak Woodland Resources under the Resource Impact Minimization Alternative **Exhibit 3A.3-10**



	Preserve	Impact	Existing	Mitigation
Oak Canopy[1]	180.4	79.6	260.0	
Woodland (Canopy/Woodland)	(178.3 / 428.6)	(71.5 / 213.5)	(249.8 / 642.1	213.5 Ac Woodland
Isolated Oak Canopy	2.1	8.1	10.2	Isolated Oaks will be mitigated for on an individual tree basis

[1] Includes Woodland and Isolated Canopy

Source: ECORP Consultants 2010

Oak Woodland Resources under the Centralized Development Alternative **Exhibit 3A.3-11**

Pursuant to Sacramento County General Plan policy, the acreage of oak woodland habitat for determining impacts and mitigation requirements was calculated as the oak tree canopy area within stands of oak trees having greater than 10% cover plus a 30-foot-radius buffer measured from the outer edge of the tree canopy. Oak trees located in areas greater than 30 feet from stands meeting the greater than 10% tree canopy cover criterion were considered isolated trees and not part of the blue oak woodland community. Mitigation for impacts on isolated oak trees is discussed separately below.

- Preserve approximately 399 acres of existing oak woodland habitat in the SPA (this acreage is based on the extent of oak woodland habitat as determined from aerial photograph interpretation; however, following completion of ground verification by a qualified arborist, the actual amount of oak woodland present within impact areas could be slightly greater or lesser than the amount calculated from aerial photograph and, therefore, the amount preserved could also be slightly greater or lesser than 399 acres).

- Create 243 acres of oak woodland habitat in the SPA by planting a combination of blue oak acorns, seedlings, and trees in the following SPA locations:

  - Non-wooded areas that are adjacent to or contiguous with the existing oak woodland habitat.

  - Preserve and passive open space zones throughout the SPA.

  - Open space areas that are adjacent to existing oak woodlands that will be impacted by project grading (i.e. catch slopes).

  - Other practical locations within the SPA in or adjacent to open space.

  The following oak woodland mitigation planting criteria shall be used to create oak woodland habitat:

  - A minimum of 55 planting sites per acre (with a total of 70 units, as defined below) will mitigate for one acre of oak woodland impacts. A combination of acorns, seedlings, and various sizes of container trees (#1 container, #5 container, #15 container) or transplanted trees shall be incorporated into the planting design. Mitigation acreage that is planted solely with larger oak trees (no acorns) shall have a minimum of 35 planting sites per acre. The units are defined as follows:

    – One established acorn equals one unit (acorns will be over planted to maximize potential germination).

    – One oak seedling equals one unit.

    – One #1 container oak tree equals two units.

    – One #5 container oak tree equals three units.

    – One #15 container oak tree equals four units.

    – One transplanted oak tree equals four units per trunk diameter inch (dbh).

- Preserve and protect existing off-site oak woodland habitat. Existing, unprotected oak woodland habitat within Sacramento and El Dorado Counties may be secured and placed under conservation easement in lieu of onsite mitigation measures if necessary. The off-site locations would be managed as oak woodland habitat in perpetuity.

- Create oak woodlands off site. Plant a combination of blue oak acorns, seedlings, and trees at off-site location(s), if needed to achieve the creation goal of 243 acres of new blue oak woodland habitat. This measure would only be needed if 243 acres of blue oak woodland could not be created in the SPA. Off-site creation shall follow the same guidelines as outlined in the Mitigation Planting Criteria for on-site creation. Off-site tree planting shall occur at sites within Sacramento County that should naturally support blue oak woodland and shall be used to restore former blue oak woodland habitat that has been degraded or removed through human activities. Restoration shall be designed to result in species composition and densities similar to those in the SPA prior to project development. Planted areas shall be placed under conservation easement and managed as oak woodland habitat in perpetuity.

- The oak woodland mitigation plan prepared by the project applicant(s) shall include a maintenance and monitoring program for any replacement trees. The program shall include monitoring and reporting requirements, schedule, and success criteria. Replacement oak trees shall be maintained and monitored for a minimum of eight years from the date of planting and irrigation shall be provided to planted trees for the first five years after planting. Any replacement trees that die during the monitoring period shall be replaced. The mitigation planting site must achieve 80% survival of planted trees by the end of the eight-year maintenance and monitoring period or dead and dying trees shall be replaced and monitoring continued until 80% survivorship is achieved. Security acceptable to the City and sufficient to cover maintenance and monitoring costs for eight years shall be provided to the City Planning Department. The security will be forfeited if the project applicant or designated responsible party fails to provide maintenance and monitoring and meet the success criteria.

The project applicant(s) of all on-site project phases containing individual trees and the off-site Prairie City Road and Oak Avenue interchange improvements to U.S. 50; Rowberry Drive Overcrossing; and the underground sewer force main shall develop a map depicting the tree canopy of all oak trees in the survey area and identifying the acreage of tree canopy that would be preserved and the acreage that would be removed. A tree permit for removal of isolated oak trees (those not located within the delineated boundary of oak woodland habitat) shall be obtained from the City Planning Director. As a condition of the tree removal permit, project applicant(s) shall be required to develop a Planting and Maintenance Agreement. The City's Tree Preservation Code requires compensatory mitigation and the City and the project applicants have developed a plan, as set forth Section 10 of the *Folsom Plan Area Specific Plan* (attached to this EIR/EIS as Appendix N) specifically to avoid and minimize adverse effects on individual oak trees from project development and to provide compensatory mitigation for removal of protected trees in the SPA. In addition to the language contained in the *Folsom Plan Area Specific Plan*, the following elements shall be included in a protected tree mitigation plan to be developed by the project applicants and agreed upon by the City:

- Project applicant(s) of projects containing isolated oak trees shall retain a certified arborist or registered professional forester to perform a determinate survey of tree species, size (dbh), condition, and location for all areas of the project site proposed for tree removal and encroachment of development. The condition of individual trees shall be assessed according to the American Society of Consulting Arborists rating system with the following added explanations:

    - 5 = Excellent; No problems – tree has no structural problems, branches are properly spaced and tree characteristics are nearly perfect for the species.

    - 4 = Good; No apparent problems – tree is in good condition and no apparent problems from visual inspection. If potential structural or health problems are tended at this stage, future hazard can be reduced and more serious health problems can be averted.

- 3 = Fair; Minor problems – There are some minor structural or health problems that pose no immediate danger. When the recommended actions in an arborist report are completed correctly the defect(s) can be minimized or eliminated.

- 2 = Poor; Major problems – the tree is in poor condition, but the condition could be improved with correct arboricultural work including, but not limited to: pruning, cabling, bracing, bolting, guying, spraying, mistletoe removal, vertical mulching, and fertilization. If the recommended actions are completed correctly, hazard can be reduced and the rating can be elevated to a 3. If no action is taken the tree is considered a liability and should be removed.

- 1 = Hazardous or non correctable condition – the tree is in extremely poor condition and in non-reversible decline. This rating is assigned to a tree that has structural and/or health problems that no amount of tree care work or effort can change. The issues may or may not be considered a dangerous situation. The tree may also be infested with a disease or pest(s) that is non-controllable at this time and is causing an unacceptable risk of spreading the disease or pests(s) to other trees.

- 0 = Dead – the tree has no significant signs of life (dead or very close to being dead).

► The determination for whether an individual tree shall be preserved, removed without compensation, or removed with compensatory mitigation shall be based on the condition and size of the tree as follows:

- Trees rated 0 or 1 may be removed with no mitigation.

- Trees rated 2 may be removed at 50% of the normal Folsom Municipal Code mitigation.

- Trees rated 3, 4, and/or 5 may be removed at the normal Folsom Municipal Code mitigation.

- Native oaks measuring 24 inches or greater dbh for a single trunk or 40 inches or more for a multi-trunked tree and rated a 4 or 5 shall be retained. Trees of this size but having a rating of 2 or 3 shall not be removed or mitigated, unless retaining wall(s) higher than 4 feet tall (from bottom of footing to the top of the wall) would be required to protect the tree(s) from mass grading of the SPA properties.

- Native oaks measuring between 12 and 24 inches dbh and rated a 4 or 5 shall not be removed or mitigated unless wall(s) would need to be built that are higher than 4 feet tall (from bottom of footing to the top of the wall) would be required to protect the tree(s) from mass grading of the SPA properties. Trees in this size class but rated 2 or 3 shall not be removed unless unreasonable costs to save the tree(s) (greater than the normal Folsom Municipal Code mitigation) would result.

- Native oaks measuring 5 inches or greater dbh but less than 12 inches dbh shall not be removed unless unreasonable costs to save the tree(s) (greater than the normal Folsom Municipal Code mitigation) would result.

- Native oak trees measuring 1 inch or greater dbh but less than 5 inches dbh may be preserved to receive a Small Tree Preservation Credit (STPC). Any tree that is to be considered for preservation credit shall be evaluated, included in the arborist report, and shall have been found to be rated a 3, 4, or a 5. Credits shall only be accepted if the tree protection zone (TPZ) (i.e., the outer edge of the tree canopy drip line) is protected with fencing in the exact manner that 5 inches dbh and greater trees are protected on a construction site, and the spacing is equal to the proper tree spacing dictated by the Folsom Master Tree List. STPC shall not count if they the tree is in a

poor growing space due to its position within the TPZ of another protected tree to be preserved. The City shall accept the preservation of native oak trees in this size class as credit towards the total removed inches based on the following STPC criteria:

Caliper of Tree Preserved	Mitigation Tree Credit Equivalent
1 inch or greater, but less than 2 inches	One #15 container tree or two #5 container trees
2 inches or greater, but less than 3 inches	Two #15 container trees
3 inches or greater, but less than 4 inches	Three #15 container trees
4 inches or greater, but less than 5 inches	Four #15 container trees

- Folsom Municipal Code requires one of the following be planted as compensation for each diameter inch of protected tree removed:

  - half of a 24-inch box tree;
  - one #15 container tree;
  - two #5 container trees; or
  - $150 in-lieu payment or other fee set by City Council Resolution.

- The Planting and Maintenance Agreement shall include a planting plan, planting and irrigation design details, and a weaning schedule for the establishment period. The plan shall include a 5-year establishment period for trees and 8 years for planted acorns with an annual monitoring report that includes corrections needed with proposed work plan, and notice of compliance within 90-days of annual monitoring report. Security in an form acceptable to the City and sufficient to cover maintenance and monitoring costs for eight years shall be provided to the City Planning Department. The security will be forfeited if the project applicant or designated responsible party fails to fulfill the Planting and Maintenance Agreement.

- To avoid and minimize indirect impacts on protected trees to remain in the SPA, the project applicant(s) of all affected project phases shall install high visibility fencing outside the outer edge of the drip lines of all trees to be retained in the SPA during project construction. The fencing may be installed around groups or stands of trees or whole wooded areas, but must be installed so that the drip lines of all trees are protected. Grading, trenching, equipment or materials storage, parking, paving, irrigation, and landscaping shall be prohibited within the fenced areas (i.e. drip lines of protected trees). If the activities listed cannot be avoided within the drip line of a particular tree, that tree shall be counted as an affected tree and compensatory mitigation shall be provided, or the tree in question shall be monitored for a period of five years and replaced only if the tree appears to be dead or dying within five years of project implementation.

Through a combination of the mitigation options presented above along with the proposed on-site preservation of blue oak woodland habitat in the open space areas, the project applicant(s) can satisfy the mitigation requirements for removal of trees protected under the Folsom Municipal Code while also mitigating the impacts on oak woodland habitat, as determined through consultation with the Sacramento County Planning Department and the City of Folsom.

Mitigation for the U.S. 50 interchange improvements must be coordinated by the project applicant(s) of each applicable project phase with Caltrans.

Implementation: Project applicant(s) of all project phases and off-site elements affecting blue oak woodland and protected trees.

Timing: Before approval of grading or improvement plans or any ground disturbing activities, including grubbing or clearing, for any project phase containing protected trees or oak woodland.

Enforcement: 1. City of Folsom Community Development Department.

2. Caltrans for interchange improvements to U.S. 50.

PP, RHD

The Proposed Project Alternative has been designed to retain a substantial portion of the on-site blue oak woodland habitat within designated open space. However, as shown above in Table 3A.3-5, implementation of the Proposed Project Alternative would still result in the removal or disturbance of 243 acres of blue oak woodland habitat containing 81.6 acres of oak tree canopy, and another 8.4 acres of isolated native oak tree canopy not contiguous with the blue oak woodland habitat (see also Exhibit 3A.3-12). The and Reduced Hillside Development Alternative would result in removal of approximately 246 acres of blue oak woodland habitat containing 83 acres of oak tree canopy and approximately 8.7 acres of isolated oak tree canopy (Exhibit 3A.3-13). Tree surveys conducted on the Folsom 138, Folsom South, Carpenter Ranch, and Sacramento Country Day School properties identified a total of 16,605 blue oak trees, 285 interior live oak trees, 114 valley oak trees, and 1 walnut tree meeting criteria for protection under Folsom Municipal Code. Tree surveys were not conducted on all parcels containing trees, but this information provides a general idea of the woodland composition in the SPA.

Development of the Proposed Project and Reduced Hillside Development Alternatives would also involve contour grading, mitigation planting, road and trail development, and creation of impervious surfaces within and immediately adjacent to open space areas containing protected oak trees. These activities could result in indirect impacts affecting oak tree root systems such as trenching, grading, soil compaction, placement of fill, impervious surfaces, irrigation, and landscaping within the drip lines of oak trees, which can lead to root damage ultimately resulting in death of the tree. Additional indirect impacts could result from habitat fragmentation, introduction of invasive species or noxious weeds, vegetation management practices (e.g., clearing for fire control), and intrusion by humans and domestic animals that could disturb oak woodland vegetation and reduce habitat values.

Removal of blue oak woodland and individual oak trees and other trees meeting minimum DBH criteria would conflict with local ordinances, specifically Folsom Municipal Code, as would damage to the root zones of protected trees that leads to eventual death of the trees. Furthermore, blue oak woodland is considered a sensitive natural community by DFG and California Public Resources Code 21083.4 requires counties to consider the environmental effects of oak woodland conversion. Therefore, a **direct** and **indirect significant** impact would result. ***[Similar]***

Mitigation Measure: Implement Mitigation Measure 3A.3-5.

Off-Site Elements

The off-site detention basin west of Prairie City Road and the two-roadway connections from Folsom Heights off-site into El Dorado Hills would have **no direct** or **indirect** impacts on blue oak woodland or individual oak trees, because none are present at those locations.

Development of the interchange improvements to U.S. 50 would result in removal of an additional 598 blue oak trees, 43 valley oak trees, and 61 interior live oak trees meeting criteria for protection under Folsom Municipal Code. Protected trees that would be removed for off-site improvements are as follows: 173 oak trees and 2 street trees at the Prairie City Road Interchange, 527 oak trees at the Oak Avenue interchange, and 3 oak trees at the Rowberry Drive Overcrossing. An additional 32 native oak trees could be removed or damaged during construction of the underground sewer force main.

A total of 39.9 acres of oak woodland habitat would be removed as a result of implementation of the off-site project elements. This acreage consists of 6.5 acres at the Prairie City Road interchange, 31.4 acres at the Oak Avenue interchange, 0.3 acre at the Rowberry Drive Overcrossing, and 1.7 acres at the underground sewer force main.

Construction of the U.S. 50 interchange improvements and the underground sewer alignment would result in removal of blue oak woodland and individual oak trees and other trees meeting minimum dbh criteria, which would conflict with Folsom Municipal Code, as would damage to the root zones of protected trees that leads to eventual death of the trees. Furthermore, blue oak woodland is considered a sensitive natural community by DFG and California Public Resources Code 21083.4 requires counties to consider the environmental effects of oak woodland conversion. Therefore, a **direct** and **indirect significant** impact would occur from construction of the Prairie City Road and Oak Avenue interchanges, Rowberry Drive Overcrossing, and the underground sewer force main.

Mitigation Measure: Implement Mitigation Measure 3A.3-5.

Implementation of Mitigation Measure 3A.3-5 would reduce significant impacts from loss of blue oak woodland and protected trees under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives and the off-site elements, but not to a less-than-significant level because the loss of individual oak trees and blue oak woodland acreage and function would be extensive and would contribute substantially to the regional loss of this resource. It is unknown at this time if blue oak woodland habitat acreage having similar tree sizes and densities, species composition, site condition, and landscape context to the blue oak woodland to be removed would be available for purchase and preservation in perpetuity. While preserving oak woodland habitat in the SPA to the maximum extent possible is desirable and valuable, the quality of oak woodland habitat remaining on the site after project development would be diminished because it would be converted from a large, contiguous patch of oak woodland habitat surrounded by undeveloped grasslands to a smaller habitat patch dissected by paved roads and surrounded by urban development. Furthermore, planting replacement trees would result in temporal losses of oak tree resources until the replacement trees reached comparable sizes as the trees to be removed; a process that would take many decades. In addition, the U.S. 50 interchange improvements fall under the jurisdiction of Caltrans; therefore, neither the City nor the project applicant(s) would have control over their timing or implementation. Therefore, impacts on blue oak woodland and protected trees would remain **significant and unavoidable**.

IMPACT 3A.3-6 Potential Interference with Wildlife Movement. *Project implementation could interfere with the movement of native resident or migratory wildlife species or with established native resident or migratory wildlife corridors.*

On-Site and Off-Site Elements

NP

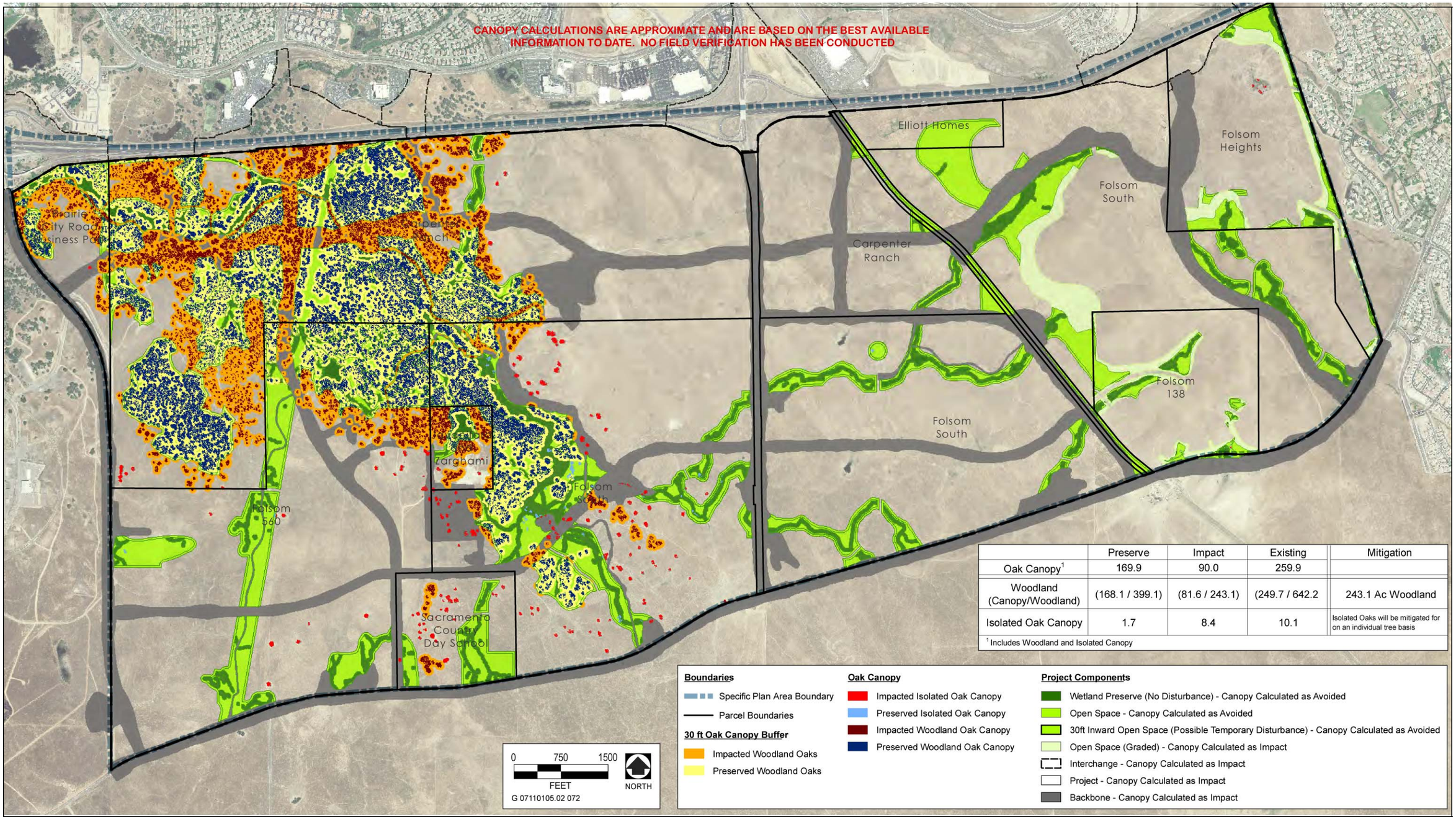
Development of the site under the existing AG-80 land use designation would not prevent movement of native wildlife and no movement corridors would be eliminated. There would be no off-site water facilities constructed. Therefore, **no direct** or **indirect** impacts to wildlife movement would occur. ***[Lesser]***

On-Site Elements

NCP, PP, RIM, CD, RHD

Wildlife corridors are features that provide connections between two or more areas of habitat that would otherwise be isolated and unusable. Often drainages, creeks, or riparian areas are used by wildlife as movement corridors as these features can provide cover and access across a landscape. Alder Creek flows northwesterly from White Rock Road to Prairie City Road. It is unknown the extent to which this creek corridor is used by wildlife in

CANOPY CALCULATIONS ARE APPROXIMATE AND ARE BASED ON THE BEST AVAILABLE INFORMATION TO DATE. NO FIELD VERIFICATION HAS BEEN CONDUCTED



	Preserve	Impact	Existing	Mitigation
Oak Canopy[1]	169.9	90.0	259.9	
Woodland (Canopy/Woodland)	(168.1 / 399.1)	(81.6 / 243.1)	(249.7 / 642.2	243.1 Ac Woodland
Isolated Oak Canopy	1.7	8.4	10.1	Isolated Oaks will be mitigated for on an individual tree basis

[1] Includes Woodland and Isolated Canopy

Boundaries
- Specific Plan Area Boundary
- Parcel Boundaries

30 ft Oak Canopy Buffer
- Impacted Woodland Oaks
- Preserved Woodland Oaks

Oak Canopy
- Impacted Isolated Oak Canopy
- Preserved Isolated Oak Canopy
- Impacted Woodland Oak Canopy
- Preserved Woodland Oak Canopy

Project Components
- Wetland Preserve (No Disturbance) - Canopy Calculated as Avoided
- Open Space - Canopy Calculated as Avoided
- 30ft Inward Open Space (Possible Temporary Disturbance) - Canopy Calculated as Avoided
- Open Space (Graded) - Canopy Calculated as Impact
- Interchange - Canopy Calculated as Impact
- Project - Canopy Calculated as Impact
- Backbone - Canopy Calculated as Impact

Source: ECORP Consultants 2010

Oak Woodland Resources under the Proposed Project Alternative

Exhibit 3A.3-12

CANOPY CALCULATIONS ARE APPROXIMATE AND ARE BASED ON THE BEST AVAILABLE INFORMATION TO DATE. NO FIELD VERIFICATION HAS BEEN CONDUCTED

Elliott Homes
Folsom Heights
Folsom South
Carpenter Ranch
Folsom 138
Folsom South
Folsom 560
Sacramento Country Day School

	Preserve	Impact	Existing	Mitigation
Oak Canopy[1]	168.4	91.6	260.0	
Woodland (Canopy/Woodland)	(166.8 / 396.4)	(83.0 / 245.8)	(249.8 / 642.2)	245.8 Ac Woodland
Isolated Oak Canopy	1.6	8.7	10.3	Isolated Oaks will be mitigated for on an individual tree basis

[1] Includes Woodland and Isolated Canopy

Boundaries
- Specific Plan Area Boundary
- Parcel Boundaries

30 ft Oak Canopy Buffer
- Impacted Woodland Oaks
- Preserved Woodland Oaks

Oak Canopy
- Impacted Isolated Oak Canopy
- Preserved Isolated Oak Canopy
- Impacted Woodland Oak Canopy
- Preserved Woodland Oak Canopy

Project Components
- Open Space (Possible Temporary Disturbance) - Canopy Calculated as Avoided
- 30ft Inward Open Space (Possible Temporary Disturbance) - Canopy Calculated as Impact
- Project - Canopy Calculated as Impact
- Backbone - Canopy Calculated as Impact

0 750 1500
FEET
NORTH
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Source: ECORP Consultants 2010

Oak Woodland Resources under the Reduced Hillside Development Alternative

Exhibit 3A.3-13

the area for movement. However, the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives include preservation of most of the Alder Creek corridor as open space. Other drainage features in the SPA do not support riparian vegetation cover and therefore do not provide valuable movement corridors. Annual grassland habitat present to the south is currently used as rangeland and would remain in open space into the foreseeable future based on zoning under the Sacramento County General Plan. This adjacent open space provides opportunities for wildlife to move around developed areas to preserved open spaces on site and to use the Alder Creek corridor to move across the SPA. Areas to the north and east of the SPA are already developed and do not provide natural habitat areas for wildlife.

Regionally common wildlife species, such as coyote, fox, raccoon, skunk, and possum, are expected to continue to use the Alder Creek corridor after project implementation. There are no established migratory routes through the SPA that are vital for the movement of any resident or migratory fish or wildlife species or population. Therefore, **direct** and **indirect** impacts on wildlife movement from the Proposed Project, Resource Impact Minimization, Centralized Development, Reduced Hillside Development, and No USACE Permit Alternatives are considered **less than significant**. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

Off-Site Elements

The off-site elements include several freeway interchange improvements and an overcrossing, two local roadway connections from Folsom Heights into El Dorado County, a new underground sewer force main, and a detention basin. These elements would not interfere with wildlife movement because the existing U.S. 50 limits wildlife movement in this area. The improvements to the existing Prairie City interchange would not substantially interfere with wildlife movement east and west along the Alder Creek corridor because the project activities would not extend into the creek corridor. The proposed detention basin to the west of the site also would not interfere with wildlife movement because it would not be located in areas providing important linkages between areas of wildlife habitat.

Because the off-site elements would not result in disruption of important linkages between wildlife habitats, this **direct** impact is considered **less than significant**. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.3-7 Conflict with an Adopted Habitat Conservation Plan. *Project implementation would not result in conflicts with the goals of an adopted Habitat Conservation Plan.*

On-Site and Off-Site Elements

NP, NCP, PP, RIM, CD, RHD

The South Sacramento Habitat Conservation Plan (SSHCP) is being prepared by the County of Sacramento. Project consistency with the SSHCP is not required under CEQA because the SSHCP has not been adopted and is not scheduled for completion and implementation until late 2010 or early 2011. Furthermore, while the exact scope and content of the SSHCP are not known at this time, the proposed planning area for the SSHCP does not include the SPA according to the notice of preparation issued on June 11, 2008 for the SSHCP EIR.

Implementation of the No Project, No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives, as well as the off-site elements, would not reduce the effectiveness of the proposed SSHCP's conservation strategy or adversely affect attainment of the goals and objectives of the SSHCP because the SPA and off-site elements are not included in the planning area and

the SSHCP is not adopted. Therefore, there is no conflict with any adopted HCPs and **no direct** or **indirect** impacts would occur. ***[Similar]***

Mitigation Measures: No mitigation measures are required.

3A.3.4 RESIDUAL SIGNIFICANT IMPACTS

Although impacts on some biological resources would be reduced to less-than significant levels through implementation of the mitigation measures described in this section, impacts on jurisdictional waters of the United States, including wetlands, and blue oak woodlands would remain significant and unavoidable even with implementation of the mitigation measures listed herein because the project would contribute substantially to the regional loss of these habitats and temporal losses of aquatic resources and blue oak woodland would occur during implementation of mitigation until performance standards and success criteria are met and it is unknown whether the acreage and functions of these habitats can be replaced through preservation and creation since mitigation sites have not been identified and a mitigation plan has not been developed. Even after a mitigation plan is developed and implemented, there would be a substantial regional loss of this resource for many decades and the full range of habitat functions may never be successfully replaced. Impacts on trees protected under Folsom Municipal Code and County Tree Preservation Ordinance would also remain significant and unavoidable because temporal losses of oak tree resources would persist until replacement trees reached comparable sizes to the trees to be removed; a process that would take many decades, and it is unknown if suitable mitigation sites are available in the region to establish replacement trees at appropriate ratios to compensate for the loss of oak tree resources in the SPA. Cumulative impacts on aquatic resources, oak woodlands, nesting and foraging habitat for raptors, including Swainson's hawk, and potential habitat for special-status plant species would remain significant and unavoidable even with implementation of the mitigation measures because the project would contribute substantially to the regional loss and degradation of these habitats.

In addition, some of the off-site elements fall under the jurisdiction of El Dorado County, Sacramento County, or Caltrans; therefore, neither the City nor the project applicant(s) would have control over the timing or implementation of mitigation measures for these interchange improvements. Because the City does not control implementation of mitigation measures for off-site improvements constructed in areas under the jurisdiction of these other agencies, Impacts 3A.3-1 through 3A.3-5 are considered potentially significant and unavoidable for off-site improvements which would be located in the jurisdiction of El Dorado County, Sacramento County, or Caltrans.

This section was prepared by RMC Water and Environment.

3B.3 BIOLOGICAL RESOURCES – WATER

3B.3.1 AFFECTED ENVIRONMENT

As provided in Chapter 2, Alternatives, physical improvements proposed as part of the Off-site Water Facility Alternatives would be limited to Zone 4 of the "Water" Study Area. In this context, emphasis for the description of the affected environment for the "Water" Study Area is placed on Zone 4. No new facilities are proposed within Zones 1, 2, and 3 and, therefore, the description of the affected environment for biological resources for these areas is limited to those details necessary to support the discussion of potential operational-related effects of the Off-site Water Facility Alternatives. More specifically, the description of the affected environment for Zones 1 and 2 is focused on fishery resources within the Sacramento River and wetland resources within the NCMWC serviced area. The Freeport Regional Water Project EIR/EIS provides extensive detail regarding the terrestrial biological and fishery resources present within Zone 3, including portions of Zone 2 within the immediate vicinity of the Freeport Project intake, and is incorporated by reference into this EIR/EIS.

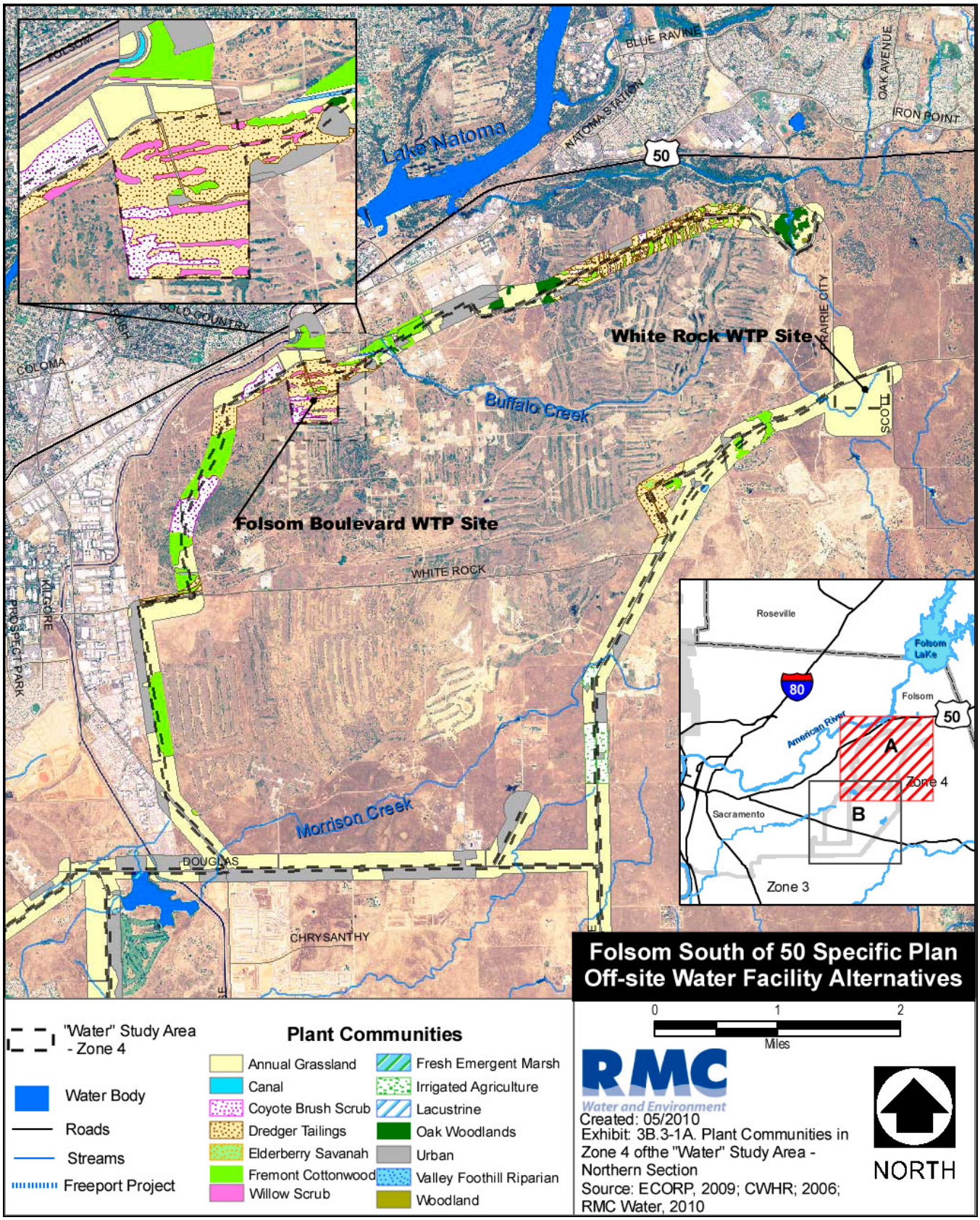
PLANT COMMUNITIES IN ZONE 4 OF THE "WATER" STUDY AREA

The established vegetative communities within the "Water" Study Area and their associated habitat values are identified and described in this section using the California Department of Fish and Game's (DFG) *A Guide to Wildlife Habitats* (Mayer and Laudenslayer 1988). As shown in Exhibits 3B.3-1A and 3B.3-1B, a majority of Zone 4 of the "Water" Study Area is comprised of urban or developed habitat, coyote scrub brush, annual grassland, dredge tailings, and, to a lesser extent, woodlands and savannah. Exhibit 3B.3-1A illustrates plant communities within the northern portion of the Zone 4 "Water" Study Area, including the two off-site WTP locations, while Exhibit 3B.3-1B depicts the plant communities within the southern portions of Zone 4. As shown in these two exhibits, sensitive plant communities documented within Zone 4 include Valley oak woodland, fresh emergent marsh, elderberry savannah, Valley foothill riparian, vernal pools, and seasonal and perennial wetlands.

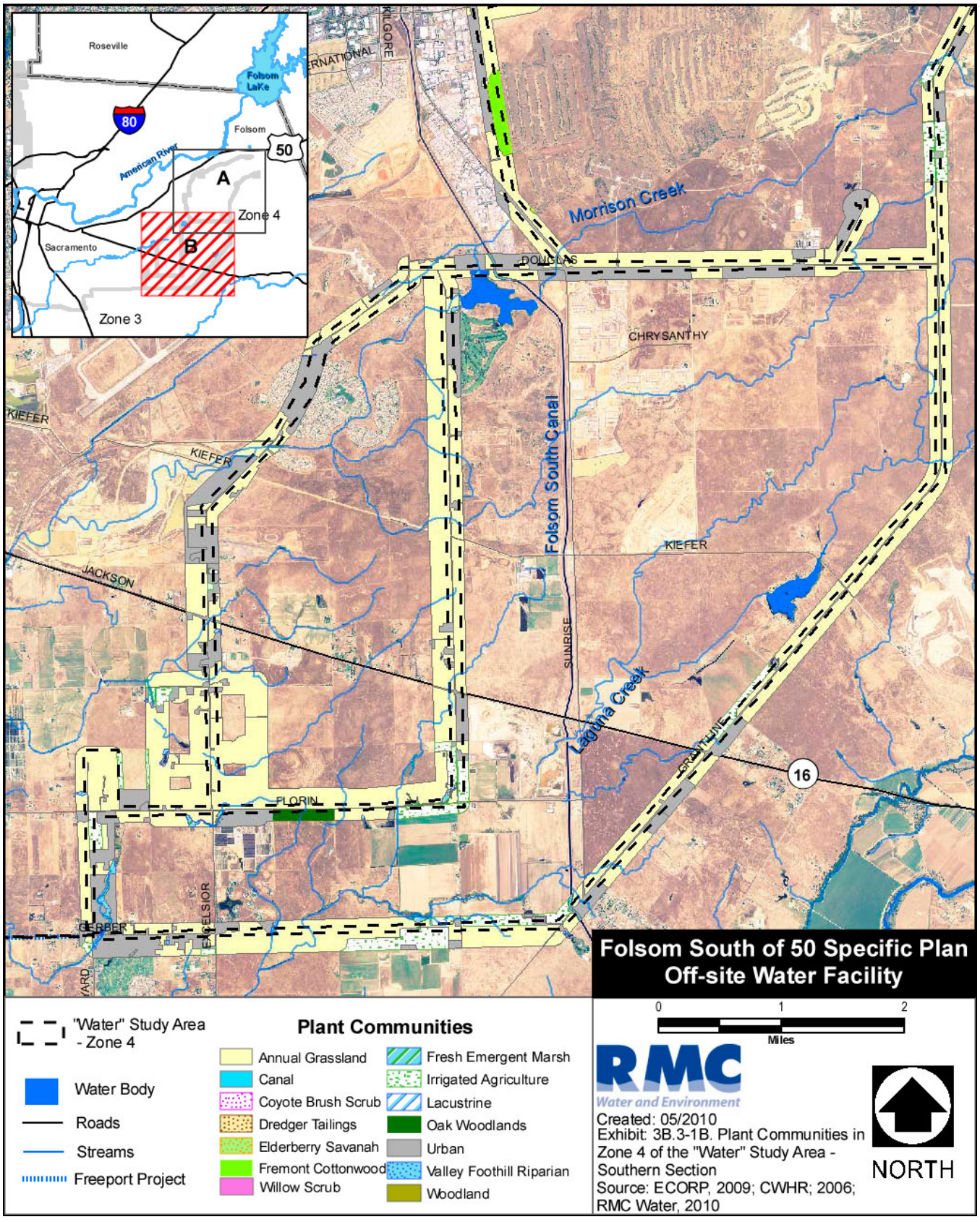
The Off-site Water Facility Alternatives conveyance alignment(s) are mostly located within existing and/or planned roadway rights-of-way for Kiefer Boulevard and Grant Line, White Rock, Douglas, Florin, Excelsior, and Eagles Nest Roads. These roadways cross through open annual grassland, mixed oak savanna, vernal pools, and riparian communities in close proximity to local waterways, including Morrison, Elder, Buffalo, and Laguna Creeks. As shown in Exhibits 3B.3-1A and 3B.3-1B riparian and wetland plant communities are extensive along the numerous drainages that traverse the "Water" Study Area.

The White Rock Water Treatment Plant (WTP) site is located within an undeveloped area, immediately south of White Rock Road and characterized by rolling annual grassland near the headwaters of Buffalo Creek (see Exhibit 3B.3-1A). This site is bordered by the Prairie City Off-Highway Vehicle (OHV) Area to the south. A perimeter reconnaissance-level survey of the subject property indicates the site is currently used for livestock grazing and consists primarily of annual grasslands with a small, seasonal drainage bisecting it diagonally from the northeast and numerous seasonal wetlands situated within the associated floodplain.

The Folsom Boulevard WTP site is located within an urbanized area, just south of Folsom Boulevard and is characterized by ruderal and urban habitats, dredge tailings containing sparse vegetation, a small patch of Fremont cottonwood, several narrow strips of willow scrub, and patches of coyote brush scrub along the western and southern perimeters (see Exhibit 3B.3-1A). Buffalo Creek meanders along the northern perimeter of the subject property. Areas adjacent and to the north are developed with various commercial and light industrial uses. Areas to the west of the Folsom Boulevard WTP site are planned for development in conjunction with the City of Rancho Cordova's planned Westborough Specific Plan area.



Plant Communities within Northern Sections of Zone 4 of the "Water" Study Area **Exhibit 3B.3-1A**



Plant Communities within Southern Sections of Zone 4 of the "Water" Study Area **Exhibit 3B.3-1B**

Plant communities found in Zone 4 of the "Water" Study Area are described in the following paragraphs. Acreage estimates in the following sections represent the total amount of each community type located within areas that could be affected by any of the Off-site Water Facility Alternatives. Acreage was calculated conservatively, assuming a 200-foot corridor for pipeline alignments.

Upland Communities

Urban or Developed Environments

Urban or developed environments comprise approximately 325.3 acres of Zone 4 of the "Water" Study Area and generally provide limited habitat for common wildlife species such as rock pigeon (*Columba livia*), house sparrow (*Passer domesticus*), and American crow (*Corvus brachyrhynchos*). Species occurring within this habitat type are typically common and well-adapted to an urban environment. Paved roadways are included as developed areas and provide minimal habitat for most wildlife species. Within the Off-site Water Facilities Study Area, urban or developed areas include paved surfaces and development within the City of Rancho Cordova and within unincorporated portions of Sacramento County along existing roadways, highways, and railroad easements (see Exhibit 3B.3-1).

Annual Grassland

California annual grasslands are extensive throughout the "Water" Study Area covering approximately 671.1 acres and consist of open grasslands composed primarily of nonnative annual plant species which include wild oats (*Avena fatua*), soft chess (*Bromus hordeaceus*), Italian ryegrass (*Lolium multiflorum*), and ripgut brome (*Bromus diandrus*). Annual grassland communities may provide habitat for common species such as rock pigeon, house sparrow, mourning dove (*Zenaida macroura*), and western meadowlark (*Sturnella neglecta*). Raptor species forage in annual grassland as well. Many of the annual grasslands support vernal pools, seasonal wetlands, and seasonal wetland swales (ECORP 2009).

Numerous elderberry shrubs (*Sambucus mexicana*) are also documented within this habitat type along White Rock Road and the planned Easton Valley Parkway.

Canal

The Folsom South Canal (FSC) runs north-south through Zone 4 of the "Water" Study Area and is mapped as canal in Exhibit 3B.3-1. The FSC comprises 0.6 acres of Zone 4 and is characterized as a broad, trapezoidal, concrete-lined channel that is bordered by chain-link fence on both sites and supports no vegetation (ECORP 2009).

Coyote Brush Scrub

The coyote brush scrub community is primarily found within the low-lying areas between mine tailings, encompassing approximately 18.5 acres within Zone 4; mainly within the Off-site Water Facility Alternative 4 corridor (see Exhibit 3B.3-1). This community is dominated by coyote brush (*Baccharis pilularis*) and other shrubs, such as blue elderberry, poison oak (*Toxicodendron diversilobum*), willow (*Salix* sp.), and hoary coffeeberry (*Rhamnus tomentella*). Invasive plant species that occur in this community include yellow star-thistle (*Centaurea solstitialis*) and milk thistle (*Silybum marianum*).

Common wildlife associated with this community in the project area includes Pacific gopher snake (*Pituophis catenifer*), California quail (*Callipepla californica*), deer mouse (*Peromyscus maniculatus*), black-tailed jackrabbit (*Lepus californicus*), and gray fox (*Urocyon cinereoargenteus*).

Several seasonal wetlands and a few seasonal ponds also occur within the coyote brush scrub community (ECORP 2009).

Fremont-Cottonwood Woodland

The Fremont cottonwood woodland and Fremont cottonwood-oak woodland communities occur scattered throughout the northern sections of Zone 4. They encompass a combined total of approximately 46.6 acres. Fremont cottonwood (*Populus fremontii*) dominates the former community, whereas Fremont cottonwood and various oak species (*Quercus* sp.) are co-dominants in the latter community. The understory of both communities consists of willows, coyote brush, poison oak, and annual grasses. In some areas, willows and elderberry shrubs also form part of the overstory.

Common wildlife species occurring in these communities include Pacific treefrog (*Hyla regilla*), racer (*Coluber constrictor*), Cooper's hawk (*Accipiter cooperii*), coyote (*Canis latrans*), and California vole (*Microtus californicus*). A few seasonal wetlands and seasonal ponds also occur within the cottonwood woodlands (ECORP 2009).

Willow Scrub

The willow scrub community occurs only in a few low-lying areas between mine dredge tailings, encompassing approximately 5.5 acres in the north-central portion of Zone 4. It also mixes with Fremont cottonwood and oaks in other low-lying areas between mine tailings (see Exhibit 3B.3-1) (ECORP 2009). This community is dominated by dense shrub-type willows. Other shrubs and herbaceous vegetation associated with the community include coyote brush, blue elderberry, poison oak, rush (*Juncus* spp.), and non-native grasses.

Some common wildlife species that occur in willow scrub include mountain garter snake (*Thamnophis elegans*), mourning dove, dusky-footed woodrat (*Neotoma fuscipes*), and desert cottontail (*Sylvilagus audubonii*).

Dredge Tailings

Dredge tailings occur throughout portions of Zone 4, north of Douglas Road, comprising approximately 83.2 acres, and are associated with historic mining activities. Vegetation within these areas varies both in terms of species composition and cover. This community includes those areas that remain almost entirely unvegetated; annual grasslands overlap with this mapping unit and include areas where a more uniform grassland has become established. A variety of plant communities have been documented in the lower-lying areas in-between the dredge tailings. These communities can range from rural vegetation to riparian woodlands.

Irrigated Agriculture

Major agricultural uses in the study area are orchards, vineyards, and other row crops. This cover type includes approximately 39.0 acres within Zone 4 of the "Water" Study Area.

Elderberry Savanna

Two small areas occupying approximately 0.3 acres in the southwest quadrant of the project site are dominated by elderberry savanna. This plant community is characterized by open stands of elderberry with an understory of annual grassland (ECORP 2009).

Oak and Foothill Woodlands

Mixed oak woodlands occur within Zone 4 of the "Water" Study Area and include mostly interior live oak (*Quercus wislizenii*) and blue oak (*Quercus douglasii*), with pockets of foothill pine (*Pinus sabiniana*). Valley foothill woodlands are composed primarily of Fremont cottonwood, willow, coyote brush, and poison oak. Patches of shrubs, annual grasses, and forbs make up the understory of both the oak and pine woodlands. The foothill pine-oak woodland communities are a common natural community, encompassing approximately

8.6 acres in northern portions of Zone 4. Trees dominate these communities, and a variety of shrubs, annual grasses, and other herbaceous species form the understory.

Common wildlife species that use this habitat include California slender salamander (*Batrachoseps attenuatus*), western fence lizard (*Sceloporus occidentalis*), red-tailed hawk (*Buteo jamaicensis*), deer mouse, raccoon (*Procyon lotor*), and black-tailed deer (*Odocoileus hemionus*). Bird species in particular, and mammals such as striped skunk (*Mephitis mephitis*), woodrat (*Neotoma* sp.), and black-tailed deer (*Odocoileus* sp.), use woodlands for foraging, breeding, and cover. Species observed within this habitat include black phoebe (*Sayornis nigricans*), red-tailed hawk (*Buteo jamaicensis*), and turkey vulture (*Cathartes aura*).

Seasonal wetlands and seasonal ponds occur within the foothill pine-oak woodland habitat as well as two ephemeral drainages (ECORP 2009).

Wetland Communities and Other Waters

Seasonal Wetlands and Seasonal Wetland Swales

Seasonal wetland and seasonal wetland swale ecosystems can occur in basins or depressions at all elevations, aspects, and exposures, but they are most common on level to gently rolling topography (Mayer and Laudenslayer 1988). Pond turtles and amphibians such as frogs and salamanders may inhabit seasonal wetland habitat. Waterfowl, wading birds, and aerial insectivores such as flycatchers, swallows, swifts, and bats may forage in or over larger wetland habitats. Seasonal wetlands and seasonal wetland swales occur throughout Zone 4 of the "Water" Study Area, comprising approximately 7.8 acres and 4.9 acres, respectively, and are concentrated along streams or drainages and within depressions.

Seasonal wetlands are similar to vernal pools in that they are seasonally inundated or saturated during the winter and spring and become dry in the summer and fall. Seasonal wetlands occur in low-lying areas and are generally wet only during or following rainfall. They are distinguished from vernal pools in that they support a different flora generally composed of species not particularly unique or restricted in distribution. Common plant species in seasonal marshes in the project area include Mediterranean barley (*Hordeum marinum*), and annual rabbit-foot grass (*Polypogon monspeliensis*), knotgrass (*Paspalum distichum*), pale spikerush (*Eleocharis macrostachya*), Baltic rush (*Juncus balticus*), cattail (*Typha* sp.), umbrella nut-sedge (*Cyperus eragrostis*), curly dock (*Rumex crispus*), watercress (*Rorippa* sp.), and cocklebur (*Xanthium strumarium*).

Seasonal wetlands and seasonal wetland swales are known to support a variety of wildlife species, including Western pond turtle (*Clemmys marmorata*), branchiopods such as fairy (*Branchinecta lynchi*) and tadpole *(Lepidurus packardi*) shrimp, amphibians such as Pacific tree frogs and western toads, and birds including a variety of wading birds, shorebirds and waterfowl.

Vernal Pools

Vernal pools are composed of seasonally flooded depressions underlain by a clay, rock, or mineral layer beneath the soil through which water cannot easily pass. These areas support plant species such as white meadowfoam (*Limnanthes alba*), Fremont's tidy-tips (*Layia fremontii*), and woolly marbles (*Psilocarphus brevissimus*). As previously indicated, vernal pool grasslands are extensive throughout the southern portions of Zone 4 of the "Water" Study Area; comprising approximately 10.8 acres of vernal pools.

Vernal pools often provide suitable habitat conditions for many rare plants and animals such as vernal pool tadpole and fairy shrimp, Conservancy fairy shrimp (*Branchinecta conservvatio*), and legenere (*Legenere limosa*).

Drainage Channels and Riverine Habitat

Drainage channels occur throughout Zone 4 of the "Water" Study Area. These include intermittent to nearly permanent stream channels, all of which have an ordinary high water mark. Morrison, Elder, Buffalo, and Laguna Creeks are intermittent to perennial streams that transect Zone 4 as shown in Exhibit 3B.3-1. Portions of Morrison, Elder, Buffalo, and Laguna Creeks support surface flow all year because flows are supplemented by runoff from adjacent developed areas, but upstream segments of these creeks are intermittent. Intermittent stream channels support flowing water through winter and spring, but dry up by summer. Many of the other intermittent channels present on the project site are tributary to Alder Creek. There are 6.7 acres of perennial stream channel (or riverine habitat) scattered throughout Zone 4. Jurisdiction over drainage channels outside the Folsom SPA has not been formally determined, but it is likely that the majority, if not all of these features are subject to Federal jurisdiction.

Wildlife such as great egret (*Ardea alba*), great blue heron (*Ardea herodias*), and other shorebirds may forage in these streams. The streams may provide habitat for Pacific chorus frog, western pond turtle, and other amphibians and reptiles.

Freshwater Forested/Willow Scrub

Approximately 2.2 acres of this community is present within Zone 4 of the "Water" Study Area and includes California box elder (*Acer negundo* var. *californicum*), Fremont cottonwood *(Populus fremontii* ssp. *fremontii*), valley oak (*Quercus lobata*), Oregon ash (*Fraxinus latifolia*), Himalayan blackberry (*Rubus discolor*), California blackberry (*Rubus ursinus*), and willows (*Salix* spp.). The willow scrub community is dominated by narrow-leaved willow (*Salix exigua*) and arroyo willow (*Salix lasiolepis*). Scattered white alder (*Alnus rhombifolia*) present and patches of poison hemlock (*Conium maculatum*). The canopy is fairly open, with dense thickets of shrub. The herbaceous layer is dominated by poison hemlock (*Conium maculatum*), annual grasses, and mugwort (*Artemesia* sp.). Wildlife species potentially occurring would be similar to the riverine habitat.

Freshwater Emergent Wetland or Marsh

Freshwater marsh is an emergent wetland plant community occurring in areas that are permanently or nearly permanently inundated. Within Zone 4 of the "Water" Study Area, this community type is found in association with the drainage channels described above. Approximately 13.2 acres of freshwater marsh are present throughout Zone 4 of the "Water" Study Area. Vegetation within the community consists primarily of wetland species, including cattails, hard-stem bulrush (*Scirpus acutus*), tall flatsedge (*Cyperus eragrostis*), soft rush (*Juncus effusus*), and willow. The permanently flooded marsh habitats along Morrison, Elder, Buffalo, and Laguna Creeks can be described as Valley Freshwater Marsh, a community considered sensitive by the CDFG due to activities throughout the state that have reduced the extent of the community.

Wildlife associated with this community include those commonly found in wetland environments, such as Pacific treefrog, bullfrog (*Rana catesbeiana*), western pond turtle, shorebirds, waterfowl, and other common wildlife found in riparian and wetland habitats.

Ponds

These include ponds created through impoundment of stream channels and excavated basins. Approximately 5.1 acres of pond habitat occur within Zone 4 of the "Water" Study Area. The on-site ponds are typically inundated year round and some support sparse cover of emergent vegetation along the shallow margins, and black willow and Fremont cottonwood on their banks. In contrast to seasonal wetlands, seeps, and marshes, ponds are characterized predominantly by open water or bare ground and are not vegetated wetlands. No ponds are present in off-site elements of the project. Wildlife species found within pond habitats would be similar to those found in perennial wetland and riverine habitats and could include bull frogs, western pond turtle, and shorebirds.

PLANT COMMUNITIES IN ZONES 1 AND 2 OF THE "WATER" STUDY AREA

Zone 1 comprises the Natomas Central Mutual Water Company's (NCMWC's) service area in the southern Natomas Basin, north of the City of Sacramento and Sacramento International Airport. Habitats found within Zone 1 include riverine/open water habitat along the Sacramento River, cropland, and urban land, mainly in the southern portion of NCMWC's service area. Open water habitats include ponds, flooded oxbows, rivers, streams, and canals and are present within the Sacramento River, Cache Creek, Willow Slough, Tule Canal, and other unnamed waterways. The depths and/or flow velocities of these features restrict the establishment of terrestrial vegetation, but submerged and floating aquatic vegetation may occur (Environmental Science Associates 2007). Several of these open water features are drainages that may support freshwater marsh or riparian communities. Based on National Wetland Inventory data produced by USFWS, Zone 1 of the "Water" Study Area contains a total of 143.13 acres of wetland habitat within NCMWC's service area, with freshwater emergent wetland comprising 85 acres and the remainder consisting of freshwater forested/shrub wetland, freshwater pond, and riverine. Urban and cropland habitats are present within the remainder of Zone 1 and comprise the majority of the land area.

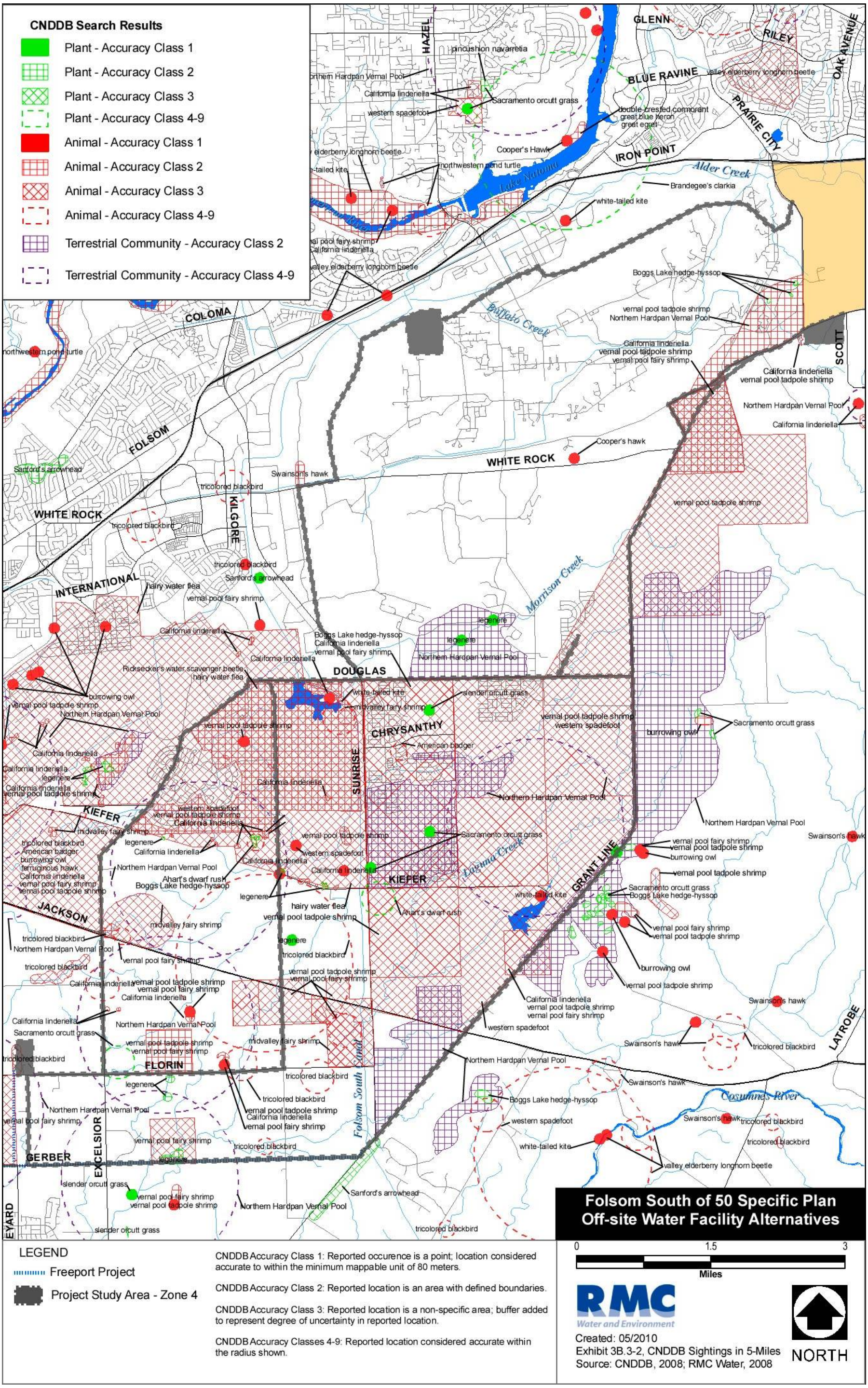
Zone 2 of the "Water" Study Area is comprised of the Sacramento River between Freeport and the NCMWC's service area. Zone 2 mainly consists of open water habitat with riparian habitats situated along the levees and banks. According to data produced by the National Wetland Inventory, Zone 2 is comprised of 1205 acres of riverine habitat and 12.2 acres of freshwater Forested/Shrub Wetland. Details regarding the quantity of flow within the river during dry, average, and wet year conditions are provided in Section 3.9B.1.

SPECIAL-STATUS SPECIES IN ZONE 4 OF THE "WATER" STUDY AREA

Sensitive biological resources addressed in this section include those that are afforded consideration or protection under the California Environmental Quality Act (CEQA), California Fish and Game Code, California Endangered Species Act (CESA), Federal Endangered Species Act (ESA), Clean Water Act (CWA), and the Porter-Cologne Water Quality Control Act (Porter-Cologne Act). For purposes of this analysis, the term "special-status" includes those species categories identified and described in Section 3A.3 (Biological Resources, "Land"), on page 3A.3-8. A list of special-status species with potential to occur within the vicinity of Zone 4 of the "Water" Study Area was compiled based on data from the above sources. Conclusions regarding habitat suitability and species occurrence are based on a reconnaissance-level assessment of the area, as well as existing literature, and other environmental documents prepared for other projects within Zone 4 of the "Water" Study Area. Exhibit 3B.3-2 illustrates the location of documented special-status species within a 5-mile radius of Zone 4 of the "Water" Study Area.

Surveys were conducted to determine habitat suitability for biological resources that could potentially occur within Zone 4 of the "Water" Study Area. Road alignment surveys included both sides of the roadway through a combination of foot surveys, where accessible, and by automobile, in instances where access was limited. The reconnaissance survey did not include areas that were inaccessible due to private property fencing, construction activities, or the planned Rancho Cordova and Easton Valley Parkway alignments. For planned roadways and areas where access was limited, the previously prepared environmental documents were used and are incorporated by reference. These documents include:

- White Rock Road Widening Project, Phases A, B, and C, EIR;
- Freeport Regional Water Project EIR/EIS;
- Easton Project EIR for the Easton Valley Parkway; and
- Rio del Oro Specific Plan EIR/EIS.



Special-Status Plant and Wildlife Species with Potential to Occur in Zone 4 of the "Water" Study Area **Exhibit 3B.3-2**

Special-status Plants

Based on information obtained from a literature review and from regulatory agencies, 17 special-status plant species were identified as having the potential to occur within Zone 4 of the "Water" Study Area (Appendix M-V, Tables 1 and 2). Appendix M-V provides additional information on the status, life history, distribution, and potential for occurrence in the project area for each of these species. Table 3B.3-1 identifies the plant and wildlife species that could occur, are likely to occur, and known to occur within Zone 4 the "Water" Study Area. Exhibit 3B.3-2 illustrates the relative locations of these special-status plant species occurrences.

Table 3B.3-1
Special-Status Plant Species with Potential to Occur in Zone 4 of the "Water" Study Area

Species	Federal/State/ CNPS Status	General Habitat	Potential for Species to Occur
PLANTS			
Arctostphaylos myrtifolia Ione manzanita	FT/--/1B.2	Chaparral and cismontane woodland on acidic, Ione soils, clay or sandy substrates. From 200 to 1,900 feet in elevation.	**Unlikely to Occur.** Unlikely to occur due to lack of suitable habitat in Zone 4 of Off-site Water Facilities Study Area.
Castilleja campestris ssp. *succulenta* succulent owl's–clover	FT/CE/1B.2	Vernal pools, often acidic. From 200 to 2,460 feet in elevation.	**Likely to Occur.** Potentially occurring in the project area. The project area is not within designated critical habitat.
Chlorogalum grandiflorun Red Hill's soaproot	--/--/1B.2	Cismontane woodland, chaparral, and lower montane coniferous forests on serpentine or gabbro soils. From 850 to 3,500 feet in elevation.	**Unlikely to Occur.** Zone 4 is outside of the species' known elevation range and no suitable habitat was observed.
Clarkia biloba ssp. *brandegeeae*	--/--/1B.2	Chaparral and cismontane woodland in openings and rocky slopes; often road cuts, from 0 to 3,000 feet in elevation.	**Unlikely to Occur.** No suitable habitat was observed in Zone 4.
Downingia pusilla Dwarf downingia	--/--/2.2	Mesic areas in valley and foothill grassland and vernal pools. From 3 to 1,450 feet in elevation.	**Likely to Occur.** Suitable habitat observed within Zone 4.
Eriogonum apricum var. *apricum* Ione buckwheat	FE/SE/1B.1	Chaparral in openings and Ione soil. From 200 to 475 feet in elevation.	**Unlikely to Occur.** Unlikely to occur due to lack of suitable habitat and soils in project area.
Eriogonum apricum var. *prostratum* Irish Hill buckwheat	FE/SE/1B.1	Chaparral in openings and Ione soil. From 200 to 400 feet in elevation.	**Unlikely to Occur.** Unlikely to occur due to lack of suitable habitat and soils in project area.
Eryngium pinnatisectum Tuolumne button-celery	--/--/1B.2	Cismontane woodlands, lower montane coniferous forests, and vernal pools in mesic areas. From 230 to 300 feet in elevation.	**Could Occur.** Potentially suitable habitat exists within Zone 4.
Gratiola heterosepala Bogg's Lake hedge-hyssop	--/CE/1B.2	Marshes and swamps and vernal pools, clay. From 30 to 7,800 feet in elevation.	**Likely to Occur.** Potentially occurring in the project area.
Horkelia parryi Parry's horkelia	--/--/1B.2	Chaparral and cismontane woodland, especially Ione formation. From 260 to 3,400 feet in elevation.	**Unlikely to Occur.** Lack of suitable habitat in zone 4 of project area.

Table 3B.3-1
Special-Status Plant Species with Potential to Occur in Zone 4 of the "Water" Study Area

Species	Federal/State/ CNPS Status	General Habitat	Potential for Species to Occur
Juncus leiospermus var. *ahartii* Ahart's dwarf rush	--/--/1B.2	Mesic areas in valley and foothill grassland. From 100 to 325 feet in elevation.	**Likely to Occur.** Potentially occurring in the project area.
Legenere limosa legenere	--/--/1B.1	Vernal pools. From 3 to 2,900 feet in elevation	**Likely to Occur.** Potentially occurring in the project area.
Navarretia myersii ssp. *Myersii* Pincushion navarretia	--/--1B.1	Vernal pools. From 65 to 1,100 feet in elevation.	**Likely to Occur.** Potentially occurring in the project area.
Orcuttis tenuis slender Orcutt grass	FT/CE/1B.1	Vernal pools. From 115 to 5,775 feet in elevation.	**Known to Occur.** Potentially occurring in the project area. The project area is located within Critical Habitat Unit 6 (Off-site Water Facility Alternatives 2, 2A, 3, 3A, 4, and 4A).
Orcuttia viscida Sacramento Orcutt grass	FE/CE/1B.1	Vernal pools. From 115 to 325 feet in elevation.	**Known to Occur.** Potentially occurring in the project area. The project area is located within Critical Habitat Unit 2 (Off-site Water Facility Alternatives 2, 2A, 3, 3A, 4, and 4A).
Pseudobahia bahifolia Hartweg's golden sunburst	FE/CE/1B.1	Cismontane woodland and Valley and foothill grassland clay, often acidic soils. From 100 to 1,000 feet in elevation	**Likely to Occur.** Potentially occurring in the project area.
Sagittaria sanfordi Sanford's arrowhead	--/--/1B.2	Marshes and swamps. From 0 to 2,000 feet in elevation.	**Could Occur.** Potentially occurring in the project area.

Source: CNDDB 2008, RBI 2008

STATUS CODES

Federal

FE = Endangered
FT = Threatened
FC = Candidate

State

CE = Endangered
CT = Threatened
CFP = Fully Protected
CSC = California Department of Fish and Game Special Concern species

California Native Plant Society

List 1B = Plants rare, threatened, or endangered in California and elsewhere
List 2 = Plants rare, threatened, or endangered in California, but more common elsewhere
List 3 = Plants about which we need more information--a review list
List 4 = Plants of limited distribution--a watch list

0.1 = Seriously endangered in California
0.2 = Fairly endangered in California
0.3 = Not very endangered in California

Potential for Occurrence Definitions

Unlikely to occur: Species is unlikely to be present on the project site due to poor habitat quality, lack of suitable habitat features, or restricted current distribution of the species.

Could occur: Suitable habitat is available at the project site; however, there are little to no other indicators that the species might be present.

Likely to occur: Habitat conditions, behavior of the species, known occurrences in the project vicinity, or other factors indicate a relatively high likelihood that the species would occur at the project site.

Known to occur: The species, or evidence of its presence, was observed at the project site during reconnaissance surveys, or was reported by others.

Special-Status Wildlife

Based on information obtained from a literature review and from regulatory agencies, 25 special-status terrestrial wildlife species were identified as having the potential to occur within Zone 4 of the "Water" Study Area (Appendix M-V, Tables 1 and 2). Appendix M-V provides additional information on the status, life history, distribution, and potential for occurrence in the project area for each of these species. Table 3B.3-2 identifies the wildlife species that could occur, are likely to occur, and known to occur within Zone 4 the "Water" Study Area. Exhibit 3B.3-2 illustrates the relative locations of these special-status wildlife species occurrences.

Table 3B.3-2
Special-Status Wildlife Species with Potential to Occur in Zone 4 of the "Water" Study Area

Species	Federal/State	General Habitat	Potential for Species to Occur
INVERTEBRATES			
Branchinecta conservvatio Conservancy fairy shrimp	FE/--	Large vernal pools with cool, moderately turbid water	**Could Occur.** Potentially suitable habitat occurs in Zone 4, but Zone 4 is not within designated critical habitat.
Branchinecta lynchi vernal pool fairy shrimp	FT/--	Vernal pools throughout California west of the Sierra Nevada.	**Known to Occur**. Potentially occurring in the project area. The project area is within Critical Habitat Unit 13 (Off-site Water Facility Alternatives 2, 2A, 3, 3A, 4, and 4A).
Desmocerus californicus dimorphus = valley elderberry longhorn beetle	FT/--	Elderberry shrubs throughout the Central Valley and foothills below 3,000 feet elevation.	**Known to Occur.** Potentially occurring in the project area. Several elderberry shrubs were detected in the project area during surveys along White Rock Road and the Off-site Water Facility Alternative 1A alignment and the planned Easton Valley Parkway.
Lepidurus packardi vernal pool tadpole shrimp	FE/--	Vernal pools in the Central Valley containing clear to highly turbid water.	**Known to Occur.** The project area is within Critical Habitat Unit 8 (Off-site Water Facility Alternatives 2, 2A, 3, 3A, 4, and 4A).
AMPHIBIANS AND REPTILES			
Actinemys (=Emys) marmorata marmorata northwestern pond turtle	--/CSC	Ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Requires basking sites and suitable upland habitat for egg-laying. Nest sites most often characterized as having gentle slopes (<15%) with little vegetation or sandy banks.	**Likely to Occur**. Suitable habitat is found along local drainages within the Off-site Water Facilities Study Area. Nearest known occurrence is at Mather Lake (DFG 2008).
Ambystoma californiense California tiger salamander	FT (central population)/--	Requires underground refuges, such as ground squirrel burrows, for shelter; typically found in more friable soils. Water sources, such as vernal pools, are required for breeding.	**Unlikely to Occur**. Nearest recorded sighting is south of the Cosumnes River. No contributing drainages intersect the off-site water facility study area.
Rana aurora draytonii California red-legged frog	FT/CSC	Breeds in slow moving streams, ponds, and marshes with emergent vegetation; forages in nearby uplands within about 200 feet.	**Unlikely to Occur.** There are no known occurrences of California red-legged frog in Sacramento County. Sacramento County is not within the current range of the species.

Table 3B.3-2
Special-Status Wildlife Species with Potential to Occur in Zone 4 of the "Water" Study Area

Species	Federal/State	General Habitat	Potential for Species to Occur
Spea hammondii western spadefoot toad	--/CSC	Requires vernal pools and seasonal wetlands below 4,500 feet that lack predators for breeding. Also occurs in grassland habitat and occasionally in valley foothill oak woodlands and orchards.	**Known to Occur.** Documented within Off-site Water Facilities Study Area; sightings along Grant Line Road, south of Douglas Road.
Spea hammondii western spadefoot toad	--/CSC	Requires vernal pools and seasonal wetlands below 4,500 feet that lack predators for breeding. Also occurs in grassland habitat and occasionally in valley foothill oak woodlands and orchards.	**Known to Occur.** Documented within Off-site Water Facilities Study Area; sightings along Grant Line Road, south of Douglas Road.
Thamnophis gigas Giant garter snake	FT/ST	Marshes, sloughs, low-gradient streams, small lakes, and rice fields.	**Unlikely to Occur (Zone 4).** No documented sightings or suitable habitats were observed in Zone 4. Giant garter snake is known to occur in Zone 1 within NCMWC's service area.
BIRDS			
Ammodramus savannarum grasshopper sparrow	--/CSC(nesting)	Dry, dense grasslands and prairies, especially those with a variety of grasses and tall forbs and scattered shrubs for singing perches. Nests are built of grasses and forbs in a slight depression in ground, hidden at base of an overhanging clump of grasses or forbs.	**Could Occur.** Potentially occurring in the project area. May nest and forage in dense grassland areas along Grant Line, Douglas, and White Rock Roads.
Athene cunicularia hypugaea western burrowing owl	--/CSC	Year-long resident of open, dry grassland and desert habitats and in grass, forb, and open shrub stages of pinyon-juniper and ponderosa pine habitats up to 5,300 feet.	**Known to Occur.** Potentially occurring in the project area. May nest and forage in the Off-site Water Facilities Study Area.
Agelaius tricolor tricolored blackbird	--/CSC	Breeds near freshwater, preferably in emergent wetland with tall dense cattails or tules, but also in willow, blackberry, wild rose, and tall herbs. Forages in grassland and cropland in the Central Valley and on the coast.	**Known to Occur.** Potentially occurring in the project area. May forage in project area. This species is identified as occurring along Eagles Nest Road.
Aquila chrysaetos Golden eagle	CFP/--	Grasslands and early successional stages of forest and shrub habitats for foraging up to 11,500 feet. Secluded cliffs with overhanging ledges or large trees in open areas with unobstructed views for nesting.	**Could Occur.** May forage in portions of Zone 4.
Buteo swainsoni Swainson's hawk	--/ST	Uncommon breeding resident and migrant in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen County, and Mojave Desert. Riparian woodlands, juniper-sage flats, and oak woodlands for nesting. Grasslands and agricultural areas for foraging.	**Known to Occur**. Potentially occurring in the project area. May nest and forage in grassland portions of project area along White Rock, Grant Line, and Douglas Roads.
Circus cyaneus northern harrier	-- /CSC(breeding)	Grasslands, marshes, and agricultural areas for foraging and nesting.	**Likely to Occur.** Potentially occurring in the project area. May nest and forage in the Off-site Water Facilities Study Area.

Table 3B.3-2
Special-Status Wildlife Species with Potential to Occur in Zone 4 of the "Water" Study Area

Species	Federal/State	General Habitat	Potential for Species to Occur
Elanus leucurus white-tailed kite	--/CFP	Open woodland, marshes, partially cleared lands and cultivated fields, mostly in lowland situations. Nests in trees, often near a marsh, usually 20 to 50 feet above the ground in branches near the top of a tree.	**Known to Occur.** Observed southwest of the intersection of Sunrise Boulevard/ Douglas Road. May nest and forage in the Off-site Water Facilities Study Area.
Haliaeetus leucocephalus Bald eagle	FT/SE	Year-round resident in ice-free regions of California. Foraging areas include regulated and unregulated rivers, reservoirs, lakes, estuaries, and coastal marine ecosystems. Majority of bald eagles in California breed near reservoirs and nests are usually located within one mile of foraging habitat.	**Unlikely to Occur.** No appropriate nesting or foraging habitat present in Zone 4 of the off-site water study area.
Lanius ludovicianus Loggerhead shrike	--/CSC (nesting)	Open habitats with sparse shrubs and trees (or other suitable perch sites) and bare ground and/or low, sparse herbaceous cover; oak woodlands for nesting. Found in lowlands and foothills throughout California.	**Likely to Occur.** Suitable habitat observed during field reconnaissance. May nest and forage in the Off-site Water Facilities Study Area.
Ripaeria riparia Bank swallow	--/CSC	Sporadic colonial breeder, frequently near flowing water. Nests in steep sand, dirt, or gravel banks, in a burrow dug near the top of the bank, along the edge of inland water or in gravel pits, and road embankments.	**Unlikely to Occur.** No appropriate nesting or foraging habitat present in Zone 4 of the project area.
MAMMALS			
Antrozous pallidus pallid bat	--/CSC	Inhabits grasslands, shrublands, woodlands, and forests from sea level up through mixed conifer forests. Typically roosts in caves, crevices, or mines. Requires open habitat for foraging.	**Likely to Occur.** Potentially occurring in the project area. May forage in project area and use bridge structures.
Taxidea taxus American badger	--/CSC	Dry, open stages of most shrub, forest, and herbaceous habitats, with friable soils. Cultivated lands have been reported to provide little usable habitat.	**Likely to Occur.** Suitable habitat occurs along waterways traversing the Off-site Water Facilities Study Area. Not observed during field surveys.

Source: CNDDB 2008, RBI 2008, ECORP 2009

STATUS CODES

Federal

FE = Endangered
FT = Threatened
FC = Candidate

State

CE = Endangered
CT = Threatened
CFP = Fully Protected
CSC = California Department of Fish and Game Special Concern species

Potential for Occurrence Definitions

Unlikely to occur: Species is unlikely to be present on the project site due to poor habitat quality, lack of suitable habitat features, or restricted current distribution of the species.

Could occur: Suitable habitat is available at the project site; however, there are little to no other indicators that the species might be present.

Likely to occur: Habitat conditions, behavior of the species, known occurrences in the project vicinity, or other factors indicate a relatively high likelihood that the species would occur at the project site.

Known to occur: The species, or evidence of its presence, was observed at the project site during reconnaissance surveys, or was reported by others.

FISHERY RESOURCES IN ZONE 2 OF THE "WATER" STUDY AREA

Numerous fish monitoring studies have documented that a variety of resident and migratory fish and microinvertebrates are present in the Sacramento River in the vicinity of Zone 2 of the "Water" Study Area. Relevant studies include: (1) investigations of fish eggs and larvae near Hood, (2) fisheries surveys characterizing species composition, abundance, and seasonal distribution of downstream migrating juvenile Chinook salmon and steelhead near Knights Landing, and (3) seasonal and geographic distribution of various State and Federally listed threatened or endangered fish species including Winter-run and Central Valley fall/late fall-run Chinook salmon (*Onocorhynchus tshawytscha*), Green sturgeon (*Acipenseridae* sp.), Delta smelt (*Hypomesus transpacificus*), Sacramento splittail (*Pogonichthys macrolepidotus*), Longfin smelt (*Spirinchus thaleichthys*), and Central Valley steelhead (*Onocorhynchus mykiss*). These studies help define the existing conditions for Zone 2 of the Off-site Water Facilities Study Area.

Other fish species common in the Sacramento River near the Freeport Project intake location include river and Pacific lamprey (*Lampetra* sp.), California roach (*Hesperoleucus symmetricus*), large-mouth bass (*Micropterus salmoides*), hardhead, threadfin shad, catfish (*Ictalurus punctatus*), Sacramento pike (*Ptychocheilus grandis*), minnow, tule perch, sculpin, bullhead, and a variety of other resident fish species (FRWA 2003). The Sacramento River also provides habitat for a variety of invertebrates, including planktonic species such as copepods, and epibenthic species such as crawfish and amphipods.

Additional surveys beyond those available for the study area were not conducted. Historical survey information was deemed sufficient to establish information about composition and abundance of fishery species in Zone 2 of the "Water" Study Area.

Special-status Fish Species

Fish species listed for protection under CESA and known to occur within Zone 2 of the "Water" Study Area include Central Valley steelhead, winter-run and fall-run Chinook salmon, Delta smelt and green sturgeon. Other special-status fish species include longfin smelt, lamprey, hardhead, Sacramento splittail, and California roach. Based on currently available information regarding these species' habitat distributions and known or presumed occurrences, these species could potentially occur within Zone 2 of the "Water" Study Area. The Freeport Project EIR/EIS, incorporated by reference into this EIR/EIS, provides detailed descriptions for each of these fish species along with an assessment of the potential impacts associated with operation of the Freeport Project intake, which includes a positive barrier fish screen.

The species composition and relative abundance of both fish and macroinvertebrates within the Sacramento River vary within and among years in response to environmental factors such as changes in hydrologic conditions, seasonal migration patterns, and microhabitat conditions. Several of the fish species inhabiting Zone 2, most notably striped bass, white sturgeon, American shad, and catfish, support recreational fisheries, but are not listed under the state or Federal ESA. Many other fish and macroinvertebrates are considered to be important prey and forage species.

Several endangered or threatened fish species have been collected in the vicinity of the Sacramento River within the "Water" Study Area. These include: (1) winter-run Chinook salmon (listed as an endangered species under the CESA and Federal ESA, (2) spring-run Chinook salmon and steelhead (listed as threatened species under the CESA and Federal ESA), (3) green sturgeon juveniles and adults, (recently listed as a threatened species under the Federal ESA), and (4) Delta smelt (listed as a threatened species under the CESA and Federal ESA). Although Delta smelt have been occasionally collected in the Sacramento River near the Freeport Project diversion, they primarily occur downstream; that is, within the lower Sacramento River downstream of Sacramento and within the lower portions of the Delta and Suisun Bay.

Table 3B.3-3 identifies the wildlife species that could occur, are likely to occur, and known to occur within Zone 2 the "Water" Study Area.

Table 3B.3-3
Special-Status Fish Species with Potential to Occur in Zone 2 of the "Water" Study Area

Species	Federal/State	General Habitat	Potential for Species to Occur
Acipenser medirostris Green sturgeon	FT/CSC	Habitat requirements of green sturgeon are poorly known, but spawning and larval ecologies probably are similar to those of white sturgeon. Adult green sturgeon are more marine than white sturgeon, spending limited time in estuaries or freshwater (SWRCB 1999). Indirect evidence indicates that green sturgeon spawn mainly in the Sacramento River; spawning has been reported in the mainstem as far north as Red Bluff. Preferred spawning habitat is the lower reaches of large rivers with swift currents and large cobble.	**Likely to Occur.** Green sturgeon may spawn both upstream and downstream of Zone 2. It is probable that green sturgeon larvae or juveniles will be in the water column throughout the year.
Hypomesus transpacificus Delta smelt	FT/ST	Delta smelt are endemic to the upper Sacramento-San Joaquin Delta. Juvenile and adult Delta smelt typically inhabit open waters of the lower Delta and Suisun Bay including Suisun Marsh. Delta smelt inhabit shallow-water areas (typically less than nine feet deep at the lower low water); however, juvenile and adult Delta smelt are also known to occur within the deeper channel areas (Hanson, unpublished data). Juvenile and adult Delta smelt are generally found in the lower reaches of the Sacramento River downstream of Rio Vista, the San Joaquin River downstream of Mossdale, and within Suisun Bay (SWRCB 1999).	**Known to Occur.** Based on the Smelt's geographic distribution, the Freeport Project diversion and Zone 2 of the "Water" Study Area are located near the northern extent of the Delta smelt's geographic range and with the designated critical habitat for Delta smelt.
Lampetra tridentate River lamprey	FSC/CSC	The river lamprey has been captured mostly in the upper portion of the Sacramento-San Joaquin estuary and its tributaries in California.	**Known to Occur.** River lamprey have been found throughout the mainstem Sacramento River and the downstream Delta. They migrate through the mainstem river and tributaries to spawn in small streams in April and May.
Oncorhynchus mykiss Central Valley steelhead	FT/--	Steelhead typically return to their natal streams to spawn. Considerable variation occurs in steelhead-run timing. Stocks in the Central Valley are all winter steelhead. Adults migrate upstream through the Delta and into the Sacramento River and tributaries primarily during the late fall, winter, and spring. Steelhead begin moving through the mainstem in July, and continue migrating through February or March.	**Known to Occur.** The Freeport Project diversion and Zone 2 of the "Water" Study Area are located within an area of the Sacramento River designated as critical habitat for steelhead.

Table 3B.3-3
Special-Status Fish Species with Potential to Occur in Zone 2 of the "Water" Study Area

Species	Federal/State	General Habitat	Potential for Species to Occur
Oncorhynchus tshawytscha Central Valley spring-run Chinook salmon	FT/ST	Spring-Run salmon migrate upstream from March through October. Adults hold in deep cold pools within the rivers and tributaries over the summer months prior to spawning from August to October.	**Known to Occur.** The Freeport Project diversion and Zone 2 of the "Water" Study Area are located within an area of the Sacramento River designated as critical habitat for spring-run Chinook salmon.
Oncorhynchus tshawytscha Winter-run Chinook salmon	FE/SE	Adult winter-run Chinook salmon migrate through the Delta from late November through June and into the Sacramento River from December through July. Winter-run Chinook salmon remain in the river up to several months before spawning.	**Known to Occur.** The Freeport Project diversion and Zone 2 of the "Water" Study Area are located within an area of the Sacramento River designated as critical habitat for winter-run Chinook salmon.
Oncorhynchus tshawytscha Central Valley fall/late fall-run Chinook salmon	FP/CSC	Adult late-fall-run Chinook salmon migrate through the Delta and into the Sacramento River from October through March, or possibly April, and spawn from January through April. Peak spawning activity occurs in February and March.	**Known to Occur.** The Freeport Project diversion and Zone 2 of the "Water" Study Area are located within an area of the Sacramento River designated as critical habitat for fall/late fall-run Chinook salmon.
Pogonichthys macrolepidotus Sacramento splittail	FSC/SSC	The Sacramento splittail is a large minnow endemic to the Bay/Delta Estuary. Once found throughout low-elevation lakes and rivers of the Central Valley from Redding to Fresno, this native species now occurs in the lower reaches of the Sacramento and San Joaquin Rivers and tributaries, the Delta, Suisun and Napa marshes, the Sutter and Yolo Bypasses, and the tributaries of north San Pablo Bay.	**Known to Occur.** The Freeport Project diversion and Zone 2 of the "Water" Study Area are located within the range of Sacramento sptiltail.
Spirinchus thaleichthys Longfin smelt	FSC/SSC	The longfin smelt is a small, planktivorous fish that is found in several Pacific coast estuaries from San Francisco Bay to Prince William Sound, Alaska. Longfin smelt can tolerate a broad range of salinity concentrations, ranging from freshwater to seawater.	**Known to Occur.** The Freeport Project diversion and Zone 2 of the "Water" Study Area are located within an area of the Sacramento River likely on the edge of this species range.

Source: CNDDB 2008

STATUS CODES

Federal

FE = Endangered

FT = Threatened

FC = Candidate

State

CE = Endangered

CT = Threatened

CFP = Fully Protected

CSC = California Department of Fish and Game Special Concern species

Potential for Occurrence Definitions

Unlikely to occur: Species is unlikely to be present on the project site due to poor habitat quality, lack of suitable habitat features, or restricted current distribution of the species.

Could occur: Suitable habitat is available at the project site; however, there are little to no other indicators that the species might be present.

Likely to occur: Habitat conditions, behavior of the species, known occurrences in the project vicinity, or other factors indicate a relatively high likelihood that the species would occur at the project site.

Known to occur: The species, or evidence of its presence, was observed at the project site during reconnaissance surveys, or was reported by others.

Critical Habitat Designations for Fish

Central Valley Spring-run and Fall, Late Fall-run Chinook Salmon

NMFS recently designated critical habitat for the Central Valley spring-run Chinook salmon; effective January 2, 2006. Critical habitat consists of the waters, substrates, and adjacent riparian zones of accessible estuarine and riverine reaches. Critical habitat is designated to include all reaches accessible to Chinook salmon in the Sacramento River and its tributaries in California, all river reaches and estuarine areas of the Sacramento-San Joaquin Delta, all waters from Chipps Island westward to the Carquinez Bridge, including Honker Bay, Grizzly Bay, Suisun Bay, and Carquinez Straits, all waters of San Pablo Bay west of the Carquinez Bridge, and all waters of San Francisco Bay (north of San Francisco/Oakland Bay Bridge) from San Pablo Bay to the Golden Gate Bridge. Excluded are areas above specific dams or above long standing naturally impassable barriers.

Table 5-3 of the Freeport Project EIR, Life Stage Timing and Distribution of Selected Species Potentially Affected by the Proposed Alternatives, which is incorporated by reference into this EIR/EIS, provides the known timing and distribution of these species within the vicinity of the Freeport Project intake/fish screen. This table is included in Appendix M-V.

Existing Factors Affecting Chinook Salmon Populations

The following environmental and biological factors affect the abundance, mortality, and population dynamics of Chinook salmon:

- loss of access to historic spawning and juvenile rearing habitat within the upper reaches of the Sacramento River and its tributaries as a result of the migration barriers caused by major dams and reservoirs;
- river and creek water temperatures affect incubating eggs, holding adults, and growth and survival of juvenile salmon;
- changes in habitat quality including availability for spawning and juvenile rearing;
- exposure to contaminants;
- predation mortality by Sacramento pikeminnow, striped bass, and other predators;
- competition and interactions with hatchery-produced Chinook salmon; and
- recreational and commercial fishing of subadult and adult Chinook salmon.

In recent years, however, a number of changes have been made to improve the survival and habitat conditions for Chinook salmon. Several large, previously unscreened water diversions have been equipped with positive barrier fish screens. These screens include perforated metal plates, meshes, or other physical devices that are designed to prevent fish from passing into intake facilities (entrainment) while minimizing the stress and injury that may occur when fish impact the screen or are subjected to changes in water velocity caused by the diversion.

Changes to ocean salmon fishing regulations, and modifications to California State Water Project (SWP) and Central Valley Project (CVP) Delta export operations, have also been made to improve the survival of both adult and juvenile Chinook salmon. Improvements in fish passage facilities have been made to improve migration and upstream access. These and other changes in management actions, in combination with favorable hydrologic and oceanographic conditions in recent years, are thought to have contributed to the increasing abundance of adults returning to the upper Sacramento River in the mid-1990s. However, since 2006, hydrological conditions have been such that both spring and fall run populations have been low, necessitating commercial fishing bans in 2008 and 2009.

Central Valley Steelhead

NMFS recently designated critical habitat for Central Valley steelhead; effective January 2, 2006. Critical habitat is designated to include all river reaches accessible to listed steelhead in the Sacramento and San Joaquin Rivers and their tributaries. Also included are river reaches and estuarine areas of the Sacramento-San Joaquin Delta, all waters from Chipps Island westward to the Carquinez Bridge, including Honker Bay, Grizzly Bay, Suisun Bay, and Carquinez Straits, all waters of San Pablo Bay west of the Carquinez Bridge, and all waters of San Francisco Bay (north of the San Francisco/Oakland Bay Bridge) from San Pablo Bay to the Golden Gate Bridge. Excluded are areas of the San Joaquin River upstream of the Merced River confluence and areas above specific dams or above longstanding naturally impassable barriers.

Central Valley Winter-run Chinook Salmon

NMFS designated critical habitat for Central Valley winter-run Chinook salmon on June 16, 1993. Critical habitat is designated to include the Sacramento River from Shasta Dam to Chipps Island. Also included are all waters from Chipps Island westward to Carquinez Bridge, including Honker Bay, Grizzly Bay, Suisun Bay, and Carquinez Straits, all waters of San Pablo Bay west of the Carquinez Bridge, and all waters of San Francisco Bay (north of the San Francisco/Oakland Bay Bridge) from San Pablo Bay to the Golden Gate Bridge.

Delta Smelt

USFWS designated critical habitat for Delta smelt within the Sacramento-San Joaquin system on December 19, 1994. Specific areas identified as critical habitat for Delta smelt spawning include Barker, Lindsay, Cash, Prospect, Georgiana, Beaver, Hog, Sycamore Sloughs and the Sacramento River in the Delta, and the tributaries of northern Suisun Bay. Areas identified as critical habitat for Delta smelt rearing extend eastward from the Carquinez Straits, including Suisun, Grizzly, and Honker Bays, Montezuma Slough and its tributary sloughs, up the Sacramento River to its confluence with Three-Mile Slough, and south along the San Joaquin River including Big Break. The Sacramento River upstream of Sacramento (I Street Bridge) is not within the area designated as critical habitat by USFWS for Delta smelt.

Green Sturgeon

Green sturgeon is listed by NMFS as a threatened species under the Federal ESA. Critical habitat for the species was designated by NMFS on October 9, 2009.

Longfin Smelt

The longfin smelt is listed as a threatened species under the CESA. At this time, no critical habitat designations are currently in place for this species.

Wetlands and Other Waters of the United States

An inventory of wetland areas within Zone 4 of the "Water" Study Area was conducted using a combination of information produced by USFWS as part of the National Wetlands Inventory (2009) and wetland inventories conducted by ECORP, January 2009. These data sources provide complete coverage for the conveyance pipeline corridors evaluated for the Off-site Water Facility Alternatives and the Folsom Boulevard and White Rock WTP sites. Total acreage of jurisdictional wetlands within areas that could be affected by any of the Off-site Water Facility Alternatives was estimated, and has not been verified by USACE. Acreage was calculated conservatively, assuming a 200-foot corridor for pipeline alignments. The inventory revealed a total of 50.7 acres of potential waters of the U.S., including wetlands, within Zone 4 of the "Water" Study Area. Potential jurisdictional wetlands and waters of the U.S. inventoried within Zone 4 consist of 7.8 acres of seasonal wetlands, 4.9 acres of seasonal wetland swales, 10.8 acres of vernal pools, 6.7 acres of drainage channel, including intermittent and perennial stream channels (or riverine habitat), 2.2 acres of freshwater forested/shrub wetland, 13.2 acres of freshwater emergent wetland (or marsh), and 5.1 acres of freshwater pond. The locations and extent of wetlands and other

waters of the U.S., as mapped by the National Wetlands Inventory and ECORP (2009), are shown in Exhibits 3B.3-3a, Exhibits 3B.3-3b, Exhibits 3B.3-3c, and Exhibits 3B.3-3d.

As described in more detail in Section 3A.3, Biological Resources – "Land," wetlands and other waters of the U.S. on the project site, as well as waters of the state, provide important ecological functions within the watershed.

3B.3.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

The following Federal plans, policies, regulations, and laws related to biological resources are relevant to the Off-site Water Facilities, and are described in detail in Section 3A.3, "Biological Resources – Land:"

- Federal Endangered Species Act
- Section 404 of the Clean Water Act
- Section 401 Water Quality Certification
- Migratory Bird Treaty Act
- Wetland Conservation Provision (Swampbuster) of the Food Securities Act

Operations Criteria and Plan for Long-Term Operation of CVP/SWP

Reclamation, as a Federal agency, obtains incidental take authorization through consultation with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) under Section 7 of the ESA to facilitate operation of the CVP. Similar take authorizations apply to DWR as part of its operation of the SWP. As part of combined operation of the CVP/SWP, the USFWS and NMFS have issued biological opinions that apply to the coordinated operation and are described in more detail below.

FWS Biological Opinion on Coordinated Operations of the CVP and SWP. The December 15, 2008, biological opinion by the USFWS on the coordinated operations of the CVP/SWP concluded that continued long term operations of the CVP and SWP, as proposed, were "likely to jeopardize" the continued existence of delta smelt without further flow conditions in the Delta for their protection and the protection of designated delta smelt critical habitat. The FWS developed a Reasonable and Prudent Alternative (RPA), which consists of five components aimed at protecting delta smelt, improving and restoring habitat, and monitoring and reporting results. Two RPA components establish flow conditions on Old and Middle River (OMR) flows to reduce the effects that reverse flows have on the entrainment of adults, larvae and juvenile life stages into the CVP and SWP pumping facilities in the south Delta:

- RPA Component 1 – addresses high and low entrainment risk periods and actions to protect adult delta smelt under specific conditions during the winter adult migration period. The measures reduce entrainment risk by limiting OMR reverse flows.

- RPA Component 2 – implemented upon the completion of RPA Component 1 or when Delta water temperatures reach 12ºC, a level that is associated with the start of delta smelt spawning, or biological evidence is collected in trawl programs or at the fish facilities that adult smelt have started spawning. OMR flows are also limited under RPA Component 2 depending on the location of the population relative to the proximity of the conveyance channels leading to the pumping facilities in the south Delta.

NMFS Biological Opinion on Coordinated Operations of the CVP and SWP. The NMFS published a biological opinion on June 4, 2009 describing the anadromous fish protections for the continued long term coordinated operations of the CVP and SWP[1] (NMFS 2009). This BO concluded that continued long term

[1] Judge Wanger issued a preliminary injunction against portions of the 2009 BO that address conditions downstream of Zone 2 of the "Water" Study Area with focus on the relationship between San Joaquin River flows at Vernalis and CVP/SWP exports from the Delta and the maximum reverse flows within the Delta that CVP/SWP pumping can cause.

operations of the CVP and SWP, as proposed, were "likely to jeopardize" the continued existence of Sacramento River winter run Chinook salmon, Central Valley spring run Chinook salmon, Central Valley steelhead, and the southern Distinct Population Segment (DPS) of North American green sturgeon. They also concluded that continued CVP/SWP operations were "likely to destroy or adversely modify" designated or proposed critical habitat of these species.

The NMFS concluded that Reclamation and DWR (the "water projects") both "directly altered the hydrodynamics of the Sacramento-San Joaquin River basins and have interacted with other activities affecting the Delta to create an altered environment that adversely influences salmonid and green sturgeon population dynamics." Within the Delta, the NMFS opinion identified adverse effects which include: water diversion from the north Delta into the Delta interior; enhance vulnerability of juvenile salmonids to entrainment at the export pumping facilities; enhanced vulnerability of San Joaquin River steelhead to direct entrainment and export-related changes in Delta hydrodynamics; and direct mortality of salmonids due to entrainment at the export pumps. To address these issues, the NMFS described six actions within RPA IV to be taken in the Delta:

- Action IV.1 – Modify Delta Cross Channel gate operations and evaluate methods to control access to Georgiana Slough and the Interior Delta to reduce diversion of listed fish from the Sacramento River into the southern or central Delta.
- Action IV.2 – Control the net negative flows toward the export pumps in OMR to reduce the likelihood that fish will be diverted from the San Joaquin or Sacramento River into the southern or central Delta.
- Action IV.3 – Curtail exports when protected fish are observed near the export facilities to reduce mortality from entrainment and salvage.
- Action IV.4 – Improve fish screening and salvage operations to reduce mortality from entrainment and salvage.
- Action IV.5 – Establish a technical group to assist in determining real-time operational measures, evaluating the effectiveness of the actions, and modifying them if necessary.
- Action IV.6 – Do not implement the South Delta Barriers Improvement Program.

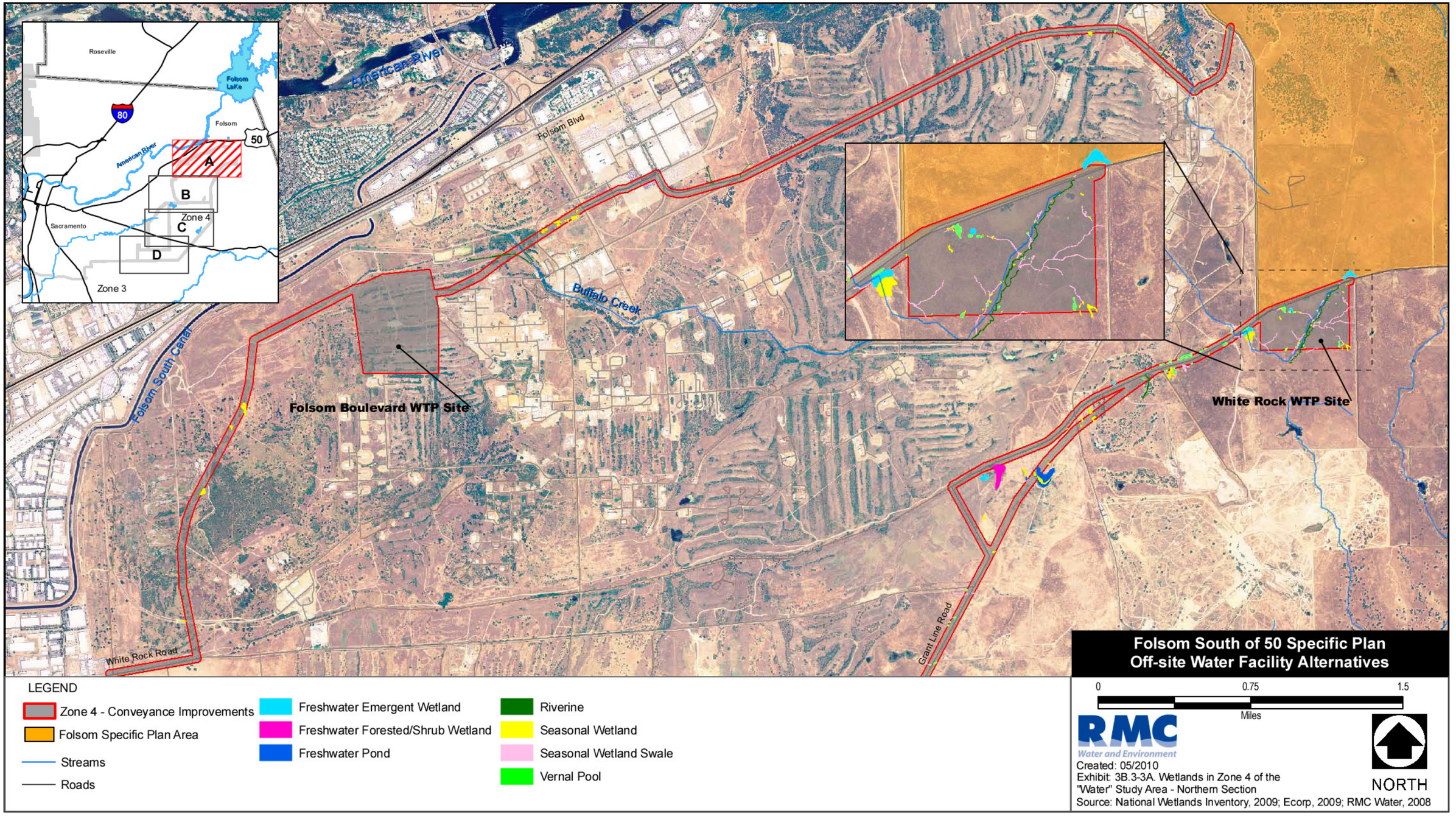
Essential Fish Habitat for Pacific Salmon

The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996, established procedures designed to identify, conserve, and enhance Essential Fish Habitat (EFH). The EFH designation applies to all species managed under a Federal Fishery Management Plan (FMP). In California, the FMP for salmon designates the mainstem Sacramento River as EFH (Pacific Fisheries Council 1999).

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

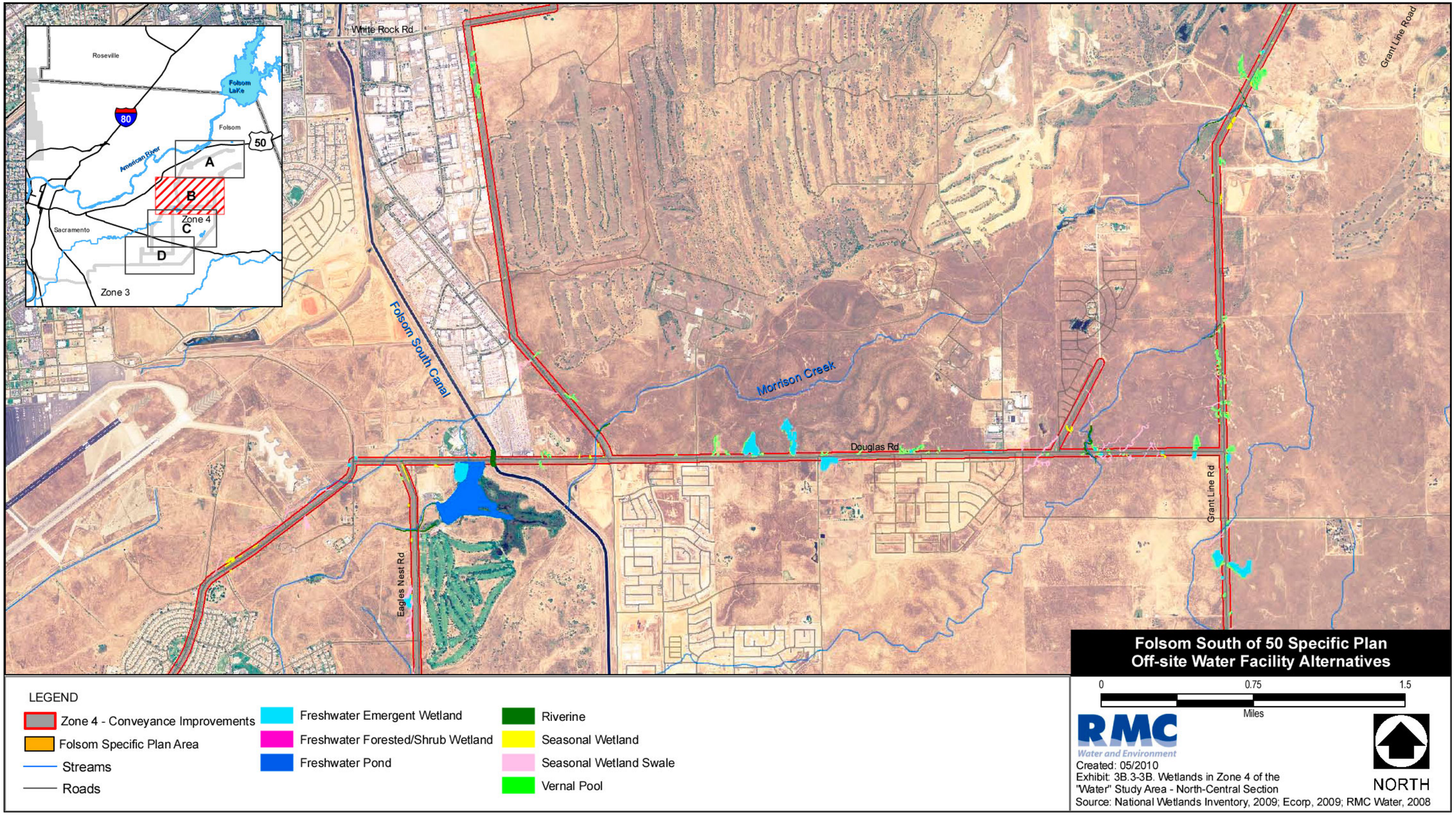
The following state plans, policies, regulations, and laws related to biological resources are relevant to the Off-site Water Facilities Alternatives, and are described in detail in Section 3A.3, "Biological Resources – Land:"

- California Endangered Species Act
- California Public Resources Code Section 21083.4 (Oak Woodlands)
- Section 1602 of the California Fish and Game Code
- Porter-Cologne Water Quality Control Act
- California Fish and Game Code Section 3503.5 (Protection of Raptors)

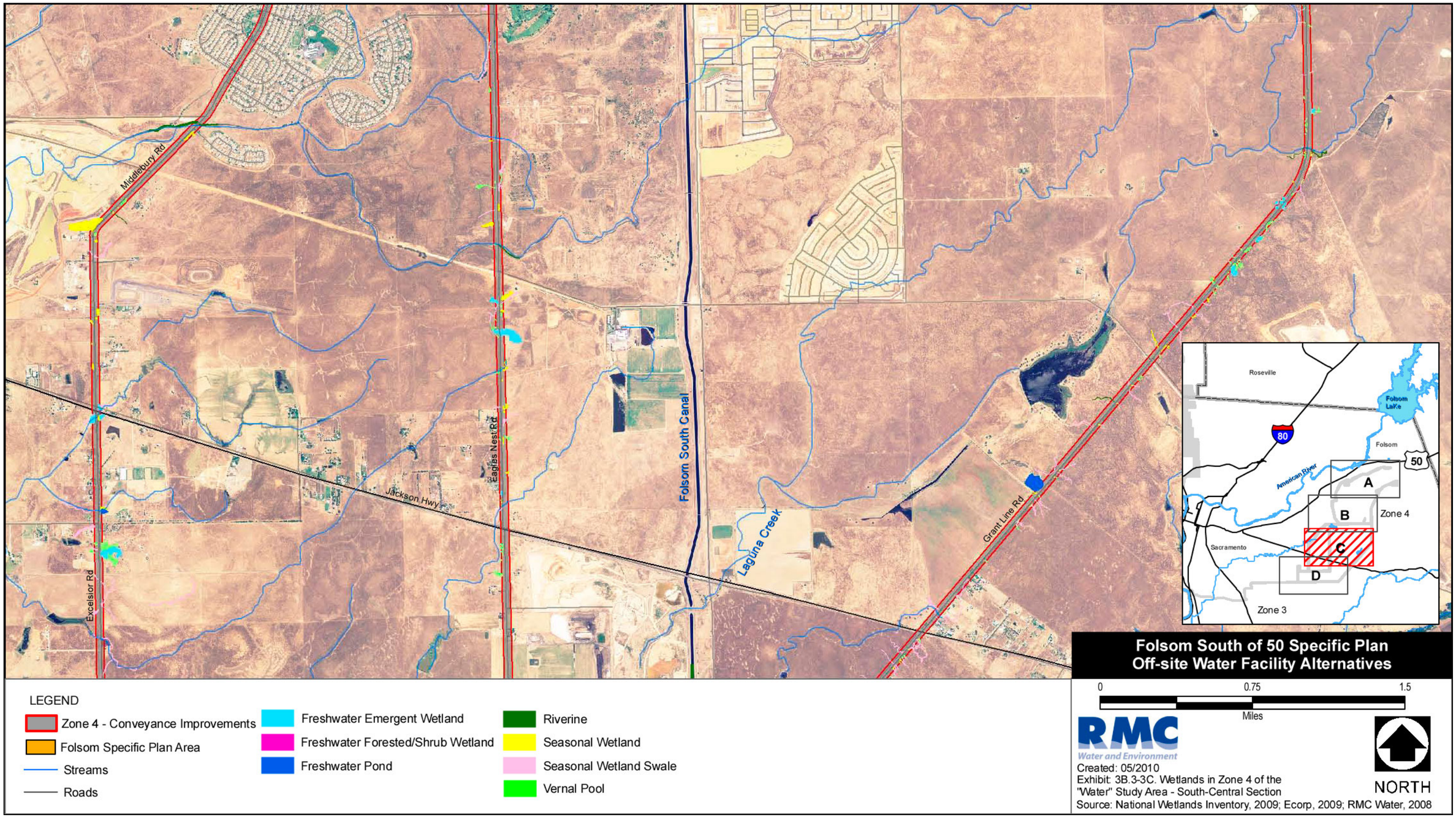


Wetland Areas in Northern Section of Zone 4

Exhibits 3B.3-3A

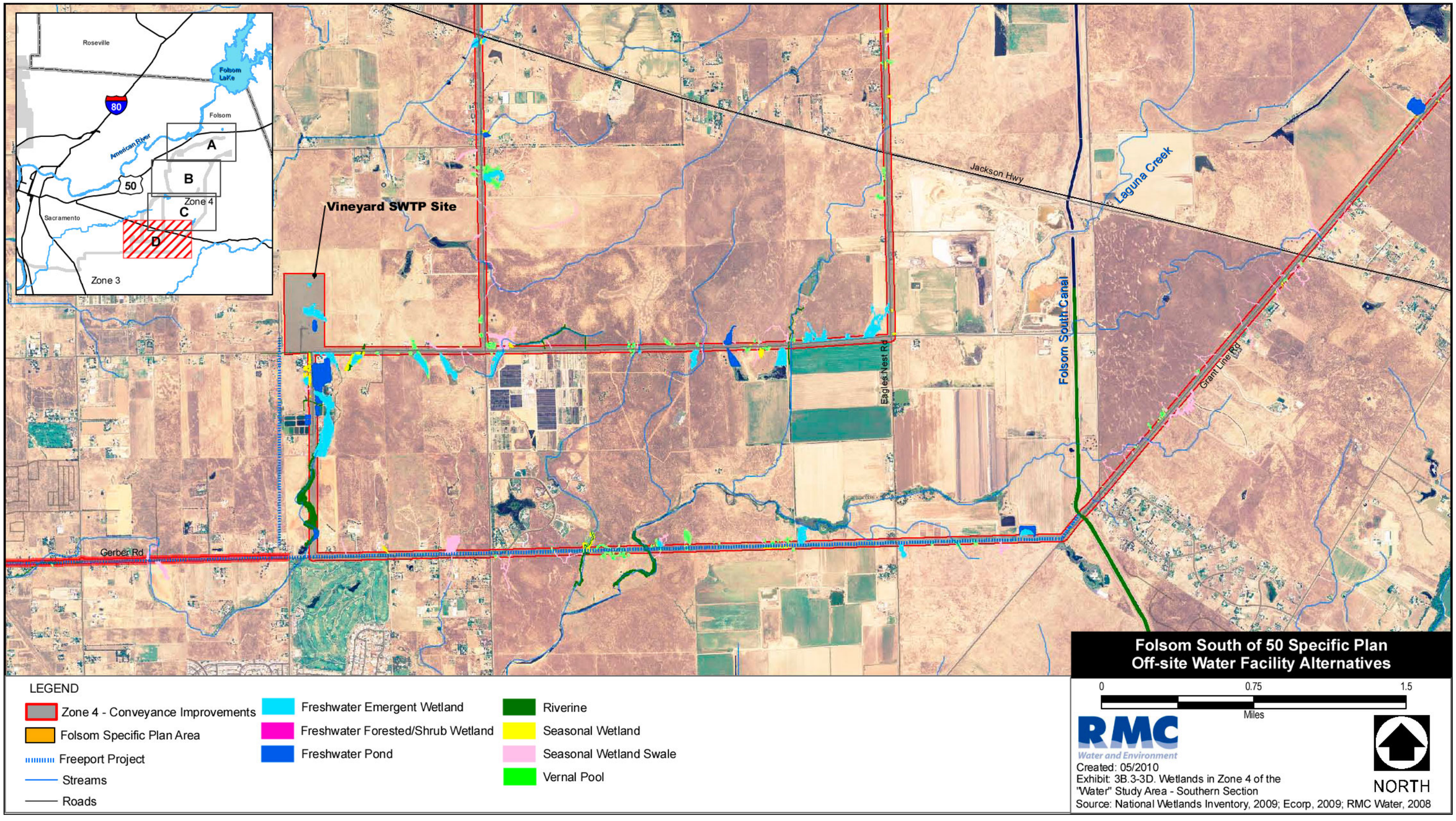


Wetland Areas in North-Central Section of Zone 4 **Exhibits 3B.3-3B**



Wetland Areas in South-Central Section of Zone 4

Exhibits 3B.3-3C



Wetland Areas in Southern Section of Zone 4

Exhibits 3B.3-3D

DFG 2081 Incidental Take Permit (ITP) for Longfin Smelt

The DFG issued an ITP pursuant to Fish and Game Code section 2081 to the DWR on February 23, 2009 for the on-going and long-term operation of SWP facilities in the Delta for the protection of longfin smelt. For the most part the 2081 ITP conditions of approval prescribe OMR flow requirements that are also included in the FWS OCAP BO. These requirements are designed to protect adult longfin smelt migration and spawning during the December through February period and larval and juvenile longfin smelt during the January through June period. For the adults (December through February) DFG identified OMR flows no more negative than -5,000 cfs. For the larval/juvenile longfin smelt period, they identified OMR flows no more negative than -1,250 to -5,000 cfs, January through March, no more negative than -2,000 to -5,000, April and May, and no more negative than -5,000 cfs during June.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

The following regional and local plans, policies, regulations, and laws related to biological resources are relevant to the Off-site Water Facilities Alternatives, and are described in detail in Section 3A.3, "Biological Resources – Land:"

- Sacramento County General Plan, Conservation and Open Space Elements
- Sacramento County Swainson's Hawk Ordinance
- Sacramento County Tree Preservation Ordinance
- Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon

Sacramento County General Plan

The Open Space Element of the County General Plan provides policies and strategies to conserve biological resources. Open space areas, including wetlands, waterways, oak woodlands, and grasslands, have been designated as part of the land use element. No portions of the Off-site Water Facilities Study Area have been designated as open space areas in the General Plan; however, wetlands, riparian habitat, and oak woodlands are present and may require compliance with the Conservation and Open Space Elements.

As indicated in Chapter 1B, Sacramento County currently released a draft of its 2025 General Plan; however, this update to the General Plan is not expected to be adopted until sometime in late 2010.

South Sacramento Habitat Conservation Plan

The proposed South Sacramento Habitat Conservation Plan (SSHCP) is a regional approach to conserving species and addressing issues related to urban development, habitat conservation, open space protection, and agricultural protection. The SSHCP would consolidate environmental efforts to protect and enhance vernal pool habitat and other aquatic and upland habitats to provide ecologically viable conservation areas in south Sacramento County for numerous species. Adoption of the SSHCP would authorize Sacramento County and its partners to issue permits that allow landowners to engage in specific development activities (covered activities) that could result in the incidental take of listed species. Sacramento County and its partners would adopt a developer-paid fee based on loss of habitat acreage, habitat type and long-term management costs. Fees would fund the habitat preservation, restoration and management elements of the proposed SSHCP.

The SSHCP will cover 40 species, 10 of which are either state or Federally listed. Sacramento County and its partners intend to apply for permits from the USFWS and the DFG for the incidental take of covered species resulting from otherwise lawful activities. Many of these species are documented within Zone 4 of the "Water" Study Area. The anticipated duration of the permit would be 30 years. Pursuant to the Federal ESA, Sacramento County and cooperating agencies, organizations, and stakeholders must prepare a regional habitat conservation plan (HCP) as part of their application for the Federal incidental take permit.

Sacramento County and USFWS issued a notice of preparation for the preparation of an EIR/EIS in June 2008. A draft of the SSHCP was released for public review in October of 2009. Zone 4 of the "Water" Study Area overlaps with portions of the SSHCP plan area. Due to uncertainties regarding the timing of the SSHCP process along with the expected approval date, the City has assumed a potential adoption date of early 2011.

Natomas Basin Habitat Conservation Plan

The adoption of the (1994) North Natomas Community Plan required the development and implementation of a HCP as mitigation for development in North Natomas. The purpose of the Natomas Basin Habitat Conservation Plan (NBHCP) is to promote biological conservation along with economic development and continuation of agriculture within the Natomas Basin. The Final NBHCP was released in April 2003, and approved by USFWS in June, 2003. The NBHCP covers 7 plant and 15 animal species, including giant garter snake.

Under the NBHCP, development projects must pay mitigation fees related to the acreage that will be disturbed by the project, conduct a biological survey for covered species, consult with USFWS and DFG regarding the results of the survey, and implement measures required by the agencies to avoid and minimize impacts to covered species. No physical disturbance to the site is permitted until the above conditions have been met.

City of Rancho Cordova

The following goals and policies of the City of Rancho Cordova's General Plan related to the protection of biological resources and applicable to one or more components of the Off-site Water Facilities Alternatives are as follows.

Goal NR1: Protect and preserve diverse wildlife and plant habitats, including habitat for special status species.

Goal NR.2: Preserve the City's rich and diverse natural wetlands.

Goal NR.3: Preserve and maintain creek corridors and wetland preserves with useable buffer zones throughout the new development areas as feasible.)

Goal NR.4: Encourage the planting and preservation of high-quality trees throughout the City.

Goal NR.5: Protect the quantity and quality of the City's water resources.

- **Policy NR.1.1:** Protect rare, threatened, and endangered species and their habitats in accordance with State and federal law.
- **Policy NR.1.2:** Conserve Swainson's hawk habitat consistent with State policies and Department of Fish and Game guidelines.
- **Policy NR.1.4:** Discourage the planting of invasive species.
- **Policy NR.1.5:**Ensure the protection of wildlife through the establishment of programs to control feral pet populations.
- **Policy NR.1.6:** Participate in the development of a habitat conservation plan to address the unique biological resources in Rancho Cordova.
- **Policy NR.1.7:** Prior to project approval, the City shall require a biological resources evaluation for private and public development projects in areas identified to contain or possibly contain listed plant and/or wildlife species based upon the City's biological resource mapping provided in the General Plan EIR or other technical materials.

- **Policy NR.1.9:** The City shall require that impacts to riparian habitats be mitigated at a no net loss of existing function and value based on field survey and analysis of the riparian habitat to be impacted. No net loss may be accomplished by avoidance of the habitat, restoration of existing habitat, or creation of new habitat, or through some combination of the above.

- **Policy NR.2.2:** Ensure that direct and indirect effects to wetland habitats are minimized by environmentally sensitive project siting and design, to the maximum extent feasible.

- **Policy NR.2.5:** The City shall require that drainage improvements that discharge into areas of wetlands to be preserved are, to the maximum extent feasible, designed to mimic the undeveloped surface water flow conditions of the area in terms of seasonality, volume, and flow velocity.

- **Policy NR.3.2:** In general, the City will encourage the preservation of existing location, topography, and meandering alignment of creeks. Where necessary, and if consistent with other City policies, the creation and realignment of creek corridors shall be constructed to recreate the character of the natural creek corridor. Channelization and the use of concrete within creek corridors shall not be supported.

- **Policy NR.4.1:** Conserve native oak and landmark tree resources for their historic, economic, aesthetic, educational, and environmental value.

3B.3.3 Environmental Consequences and Mitigation Measures

Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. These thresholds also encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. For the purposes of this analysis, an impact to biological resources would be considered significant if the construction or operation of the Off-site Water Faculty Alternatives would:

- have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game, National Marine Fisheries Service, or U.S. Fish and Wildlife Service;

- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game, National Marine Fisheries Service, or U.S. Fish and Wildlife Service;

- have a substantial adverse effect on Federally protected (or jurisdictional) wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal wetlands) through direct removal, filling, hydrological interruption, or other means;

- interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites;

- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or

- conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

ANALYSIS METHODOLOGY

This section provides a program-level analysis of potential impacts to local biological resources based on the description of the various Off-site Water Facility Alternative components and their respective footprints as identified and described in Chapter 2, "Alternatives." The impact analysis focuses on foreseeable changes to the baseline condition in the context of the significance criteria presented above. In conducting the following impact analysis for biological resources, three principal factors were taken into consideration when determining the significance of the Off-site Water Facilities:

- magnitude of the impact (e.g., substantial/not substantial);
- uniqueness of the affected resource (i.e., rarity of the resource); and
- susceptibility of the affected resource to disturbance (i.e., sensitivity of the resource).

The significance evaluation considers the interrelationship of these three components. For example, a relatively small magnitude impact to a state or Federally listed species or associated habitat would be considered significant if the species is very rare and is believed to be very susceptible to disturbance (e.g., vernal pool fairy shrimp). Conversely, common wildlife species found in urban areas are not rare or sensitive to disturbance. Therefore, a much larger magnitude of impact would be required to result in a significant impact.

As provided in Section 3B.9, "Hydrology and Water Quality – Water," the hydrological changes within the Natomas Basin, Sacramento River, and Freeport Project – or Zones 1, 2, and 3 of the Off-site Water Facilities Study Area – as a result of Off-site Water Facilities operations are expected to be minor with minimal changes to existing hydrologic conditions. This analysis acknowledges these findings and, therefore, places emphasis on potential impacts to special status species, wetlands, and sensitive habitats that occur within the 200-foot corridor under consideration for each of the Off-site Water Facility Alternatives. These improvements would be exclusively constructed within Zone 4 of the "Water" Study Area and, therefore, this analysis emphasizes those Zone 4 areas. Potential impacts to biological resources within the Folsom SPA, including issues related to the On-site WTP and sections of the pipeline for the Proposed Alternative along Oak Avenue are covered programmatically in Section 3A.3.3. Impacts to biological resources and fisheries within Zones 1, 2, and 3 as a result of operational effects to hydrology within the Sacramento River and drainage return flows within the NCMWC are also considered in this analysis and evaluated under separate subheadings, where appropriate, to provide the appropriate geographic context for the discussion.

The analysis of impacts to biological resources resulting from implementation of the Off-site Water Facility alternatives is based on review of existing biological resources, including wetlands and fisheries, documented on or within 5-miles of Zone 4 of the "Water" Study Area. Sources of information contributing to this analysis were obtained from the California Natural Diversity Database (CNDDB) and California Native Plant Society (CNPS) databases, National Wetlands Inventory, and reconnaissance-level surveys of accessible areas by RBI on October 6–7, 2008 (RBI 2008) and ECORP, Inc. during the months of October and November in 2008 (ECROP 2009). These background reports and databases included identification of vegetation communities, wildlife habitats, and animal species occurring in Zone 4 of the "Water" Study Area. The reconnaissance survey did not include areas that were inaccessible due to private property fencing, construction activities, or the area from the intersection of Sunrise Boulevard and Douglas Boulevard to the intersection of Prairie City Road and Easton Valley Parkway. Both sides of roads in the project area were surveyed by foot and by automobile, as appropriate. The following sources were reviewed to augment field reconnaissance, reports, and databases noted above in instances where access was restricted:

- Rio del Oro Specific Plan EIR/EIS;
- Freeport Regional Water Project EIR/EIS;
- Easton Project EIR; and

- White Rock Road Widening Project, Phases A, B, and C, EIR.

The Freeport Regional Water Project EIR/EIS provides extensive detail regarding the terrestrial biological and fishery resources present within Zones 2 and 3 and is incorporated by reference into this EIR/EIS. Discussions of the potential impacts to fisheries and aquatic species within Zones 1, 2, 3, and 4 incorporate and, where appropriate, summarize the findings of Freeport Project EIR analysis.

IMPACT ANALYSIS

Impacts that would occur under each of the Off-site Water Facility Alternatives are identified as follows:

NCP (No USACE Permit Alternative)

PA (Proposed Off-site Water Facility Alternative)

1 (Off-site Water Facility Alternative 1 – Raw Water Conveyance – Gerber/Grant Line Road Alignment and White Rock WTP)

1A (Off-site Water Facility Alternative 1A Raw Water Conveyance – Gerber/Grant Line Road Alignment Variation and White Rock WTP)

2 (Off-site Water Facility Alternative 2 Treated Water Conveyance – Douglas Road Alignment and Vineyard SWTP)

2A (Off-site Water Facility Alternative 2A Treated Water Conveyance – Excelsior Road Alignment Variation and Vineyard SWTP)

2B (Off-site Water Facility Alternative 2B Treated Water Conveyance – North Douglas Tanks Variation and Vineyard SWTP)

3 (Off-site Water Facility Alternative 3 Raw Water Conveyance – Excelsior Road Alignment and White Rock WTP)

3A (Off-site Water Facility Alternative 3A Raw Water Conveyance – Excelsior Road Alignment Variation and White Rock WTP)

4 (Off-site Water Facility Alternative 4 Raw Water Conveyance – Easton Valley Parkway Alignment and Folsom Boulevard WTP)

4A (Off-site Water Facility Alternative 4A Raw Water Conveyance – Easton Valley Parkway Alignment Variation and Folsom Boulevard WTP).

The impacts for each alternative are compared relative to the PA at the end of each impact conclusion (i.e., similar, greater, lesser).

IMPACT 3B.3-1 **Loss and Degradation of Waters of the U.S., including Wetlands, and Waters of the State.** *Construction of the Off-site Water Facility Alternatives has the potential to result in substantial adverse effects to Federally and state-protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to vernal pools and seasonal wetlands) through direct fill or excavation, hydrological interruption, or other indirect impacts. Wetlands, waters of the state, and other waters of the U.S. that would be affected by implementation of the Off-site Water Facility Alternatives include seeps, vernal pools, seasonal wetlands and seasonal wetland swales, drainage channels, ditches, and ponds.*

NCP

The No USACE Permit Alternative would be specifically designed so that the off-site water supply facilities would not result in any direct impacts (i.e., fill) to water of the United States, including wetlands. Under this

alternative, where the water conveyance facilities intersect waters of the U.S., the City would employ the use of trenchless construction methods, including but not limited to, horizontal directional drilling, microtunneling, or jack-and-bore. Furthermore, the new water treatment plant, whether on-site or off-site, would not be constructed within 50 feet of any waters of the U.S. Therefore, there would be **no direct** impacts from fill of jurisdictional waters of the U.S. ***[Lesser].***

However, there is a potential that indirect impacts, such as transport of sedimentation from construction activities, could still occur. Therefore, **indirect** impacts are considered **potentially significant.** ***[Lesser]***

Mitigation Measure: Implement Mitigation Measure 3B.3-1b and 3A.3-1a.

PA

Construction and operations of the Proposed Off-site Water Facility Alternative could involve construction-related, direct and indirect impacts to wetlands and waters of the U.S. within Zone 4 of the "Water" Study Area. A total of approximately 50.7 acres of waters of the U.S., including wetlands and vernal pools, occurs within the 200-foot pipeline corridor under consideration for these alternatives. Based on the hydrological changes anticipated within Zones 1 and 2 as a result of the Proposed Off-site Water Facility Alternative as described in more detail in Section 3B.9, Hydrology and Water Quality – "Water," these operational changes could affect existing riparian vegetation along the Sacramento River. These separate, interconnected impacts are discussed in more detail under the following subheadings. The analysis of potential wetland impacts for On-site WTP is covered under Section 3A.3, Biological Resources – "Land."

Construction Effects within Zone 4 of the "Water" Study Area

Implementation of the Proposed Off-site Water Facility Alternative could result in direct and indirect impacts to waters of the U.S. as result of the placement of fill materials or excavation within jurisdictional waters of the U.S., including wetlands within the pipeline corridor for the Proposed Off-site Facility Alternative. In reality, construction of the Off-site Water Facility Alternatives would be expected to affect a corridor of less than 100 feet in width and, to the extent feasible, the City would route the pipeline alignment to avoid waters of the U.S.; especially within the permanent easement. For this reason and to enable preliminary evaluation, the City has evaluated both sides of the corridor under consideration to determine where reductions in direct and indirect wetland impacts could be achieved. The left and right sides of the alignment corridor are defined as the sides of the roadway when facing in the direction of flow (i.e., facing toward the SPA, with the source of water or Freeport Project at the observer's back).

The 200-foot corridor for the Proposed Off-site Water Facility Alternative contains a total of $\pm$12.9 acres of waters of the U.S., including wetlands and vernal pools. Table 3B.3-4 provides a breakdown of the different wetland types potentially impacted by construction of the conveyance pipeline and WTP under this alternative. As shown in the table, along the left half of the two-hundred-foot corridor up to 0.53 acres of seasonal wetland, 0.96 acres of seasonal wetland swale, 2.01 acres of vernal pools, 0.5 acres of riverine habitat, 1.28 acres of freshwater emergent wetland, and 0.44 acres of freshwater pond could be subject to fill, excavation, or indirect impacts (e.g., sedimentation) during construction. Along the right half of the two-hundred-foot corridor, up to 1.09 acres of seasonal wetland, 1.18 acres of seasonal wetland swale, 3.12 acres of vernal pools, up to 1.09 acres of freshwater emergent wetland, 0.16 acres of riverine habitat, and 0.12 acres of freshwater forested/willow scrub could be subject to fill, excavation, or indirect impacts (e.g., sedimentation) during construction.

The potential for direct and indirect impacts to wetlands and waters of the U.S. exists. A majority of the direct effects would occur in areas where the conveyance alignment deviates outside the actual roadway or right-of-way and intersects with wetlands or other waters of the U.S. Although the City would to the maximum extent practical, route the conveyance pipeline along roadways or within portions of the roadway shoulder not containing wetlands, the possibility for the construction and permanent easement to impact wetlands directly or indirectly is

high given the number and frequency of potentially jurisdictional features. Additionally, this alternative travels cross-country, east of the end of Gerber Road and through an area containing vernal pools and riverine channels associated with Laguna Creek. This area contains a wetland preserve area immediately to the south of East Bay Municipal Utility District's (EBMUD's) easement for Segment 3 of the Freeport Project.

Table 3B.3-4
Summary of Wetland Impacts for the Off-site Water Facility Alternatives[a]

Wetland Type	PA		1 [(1)]		1A[(1)]		2		2A		2B		3[(1)]		3A[(1)]		4[(2)]		4A[(2)]	
	L [3]	*R*	*L*	*R*	*L*	*R*	*L*	*R*	*L*	*R*	*L*	*R*	*L*	*R*	*L*	*R*	*L*	*R*	*L*	*R*
Freshwater Emergent Wetland	1.28	1.09	1.08	0.93	1.05	0.93	3.26	3.93	1.24	3.24	0.53	0.21	3.36	4.03	1.34	3.34	2.57	2.67	0.58	1.98
Seasonal wetland	0.53	1.09	0.76	1.29	0.88	1.45	1.10	1.70	2.08	1.66	0.61	0.14	1.31	1.91	2.29	1.87	1.48	1.94	2.34	1.72
Seasonal wetland swale	0.96	1.18	1.30	1.55	1.31	1.55	1.28	0.70	0.79	0.58	0.23	0.26	1.64	1.06	1.15	0.94	1.04	0.46	0.56	0.34
Vernal Pool	2.01	3.12	2.34	3.36	2.36	3.35	2.73	2.08	2.36	1.99	1.06	1.11	3.07	2.42	2.70	2.33	1.51	1.81	1.14	1.72
Riverine	0.50	0.16	0.67	0.76	0.68	0.76	3.22	1.86	3.20	1.81	0.14	0.09	3.39	2.03	3.37	1.98	3.18	1.76	3.15	1.71
Seasonal Pond	0.44		0.43		0.62	0.26	0.35	3.07	0.39	3.29			0.35	3.07	0.39	3.29	0.40	3.01	0.25	2.98
Freshwater Forested/ Willow Scrub		0.12		0.13				0.13			0.13			0.13						
Subtotal (Waters of the U.S.)[4]	5.7	6.8	6.6	8.0	6.9	8.3	11.9	13.5	10.1	12.6	2.70	1.8	13.1	14.7	11.2	13.75	10.2	11.7	8.0	10.5
Grand Total*	12.9		11.1		12.8		25.4		22.7		4.5		25.4		22.7		21.9		18.4	

Notes:

[a] The No USACE Permit Alternative would be sited to avoid all direct wetland impacts.

[1] Includes wetland areas on White Rock WTP site.

[2] Includes wetland areas on Folsom Boulevard WTP Site.

[3] L=left side of 200-foot corridor; R=right side of 200-foot corridor. Left and right sides of the alignment corridor are defined as the sides of the roadway when facing in the direction of flow (i.e., facing toward the SPA, with the Freeport Project at the observer's back).

[4] rounded to the nearest tenth.

Source: National Wetlands Inventory 2009; ECORP 2009; and RMC 2010

Based on the preliminary estimates provided in Table 3B.3-4, the potential **direct** and **indirect** impacts to waters of the U.S., including wetlands, under this alternative could be up to 6.8 acres. Because the City has not yet completed project specific engineering details for this alternative, the actual impacts to waters of the U.S., including wetlands, cannot be determined. Based on these considerations, impacts to wetlands and waters of the U.S. could be **potentially significant**.

Operational Effects within Zones 1, 2, 3, and 4 of the "Water" Study Area

Section 3B.9.3 provides an analysis of the Off-site Water Facility's operation under a range of hydrologic conditions. Following construction of the Off-site Water Facilities, operational effects to waters of the U.S., including wetlands, would be expected to be limited to portions of Zone 1 and 2 (Sacramento River) where minor changes in surface water levels would occur. Minor changes in river conditions that would occur as part of the Off-site Water Facility operations (see Table 3B.9-3) would be expected to result in negligible changes in water levels within Sacramento River or drainage channels that expect irrigation return flow within the NCMWC service area. Based on these considerations, operation of the Proposed Off-site Water Facility Alternative would result in **less-than-significant direct** and **indirect** impacts to wetland and riparian areas within the hydrologic

influence of the Sacramento River within Zones 1 and 2 of the "Water" Study Area and drainage channels and irrigation canals with NCMWC's service area.

Mitigation Measure 3B.3-1a: Secure Clean Water Act Section 404 Permit and Implement All Permit Conditions; Ensure No Net Loss of Functions of Wetlands, Other Waters of the U.S., and Waters of the State.

Before the approval of grading and improvement plans and before any groundbreaking activity associated with the Off-site Water Facilities requiring fill of wetlands or other waters of the U.S. or waters of the state, the City shall obtain all necessary permits under Sections 401 and 404 of the CWA or the state's Porter-Cologne Water Quality Control Act for the respective phase. For each respective Off-site Water Facility component, all permits, regulatory approvals, and permit conditions for effects on wetland habitats shall be secured before implementation of any grading activities within 250 feet of waters of the U.S. or wetland habitats, including waters of the state, that potentially support Federally listed species. The City shall commit to replace, restore, or enhance on a "no net loss" basis (in accordance with USACE and the Central Valley RWQCB) the acreage of all wetlands and other waters of the U.S. that would be removed, lost, and/or degraded with implementation of project plans for that phase. Wetland habitat shall be restored, enhanced, and/or replaced at an acreage and location and by methods agreeable to USACE, the Central Valley RWQCB, and the City, as appropriate, depending on agency jurisdiction, and as determined during the Section 401 and Section 404 permitting processes.

As part of the Section 404 permitting process, a draft wetland mitigation and monitoring plan (MMP) shall be developed for the selected Off-site Water Facility Alternative on behalf of the City. Before any ground-disturbing activities that would adversely affect wetlands and before engaging in mitigation activities associated with each phase of development, the City shall submit the draft wetland MMP to USACE and the Central Valley RWQCB for review and approval of those portions of the plan over which they have jurisdiction. The MMP would have to be approved prior to issuance of a Section 404 permit. Once the final MMP is approved and implemented, mitigation monitoring shall continue for a minimum of 5 years from completion of mitigation, or human intervention (including recontouring and grading), or until the performance standards identified in the approved MMP have been met, whichever is longer.

As part of the MMP, the City shall prepare and submit plans for the creation of aquatic habitat in order to adequately offset and replace the aquatic functions and services that would be lost, account for the temporal loss of habitat, and contain an adequate margin of safety to reflect anticipated success. Restoration of previously altered and degraded wetlands shall be a priority of the MMP for offsetting losses of aquatic functions on the project site because it is typically easier to achieve functional success in restored wetlands than in those created from uplands. The MMP must demonstrate how the aquatic functions and values that would be lost through project implementation will be replaced.

The habitat MMP for jurisdictional wetland features shall be consistent with USACE's and EPA's April 10, 2008 *Final Rule for Compensatory Mitigation for Losses of Aquatic Resources* (33 CFR Parts 325 and 332 and 40 CFR Part 230). According to the *Final Rule*, mitigation banks should be given preference over other types of mitigation because a lot of the risk and uncertainty regarding mitigation success is alleviated by the fact that mitigation bank wetlands must be established and demonstrating functionality before credits can be sold. This also alleviates temporal losses of wetland function while compensatory wetlands are being established. Mitigation banks also tend to be on larger, more ecologically valuable parcels and are subjected to more rigorous scientific study and planning and implementation procedures than typical permittee-responsible mitigation sites (USACE and EPA 2008). It is not likely feasible to provide compensatory mitigation for all aquatic resource impacts on site. Therefore, a combination of on-site and off-site permittee-responsible mitigation and mitigation banking would likely be necessary to achieve the no-net-loss standard.

Compensatory mitigation for losses of stream and intermittent drainage channels shall be achieved through in-kind preservation, restoration, or enhancement, as specified in the *Final Rule* guidelines. The wetland MMP shall address how to mitigate impacts on all aquatic resource types and shall describe specific method(s) to be implemented to avoid and/or mitigate any Off-site Water Facility-related impacts. The wetland compensation section of the habitat MMP shall include all the contents identified in Mitigation Measure 3A.3-1A.

USACE has determined that the Off-site Water Facilities may require an individual permit. In its final stage and once approved by USACE, the MMP for the Off-site Water Facilities is expected to detail proposed wetland restoration, enhancement, and/or replacement activities that would ensure no net loss of aquatic functions in the project vicinity. Approval and implementation of the wetland MMP shall aim to fully mitigate all unavoidable impacts on jurisdictional waters of the U.S., including jurisdictional wetlands. To satisfy the requirements of the City and the Central Valley RWQCB, mitigation of impacts on the non-jurisdictional wetlands beyond the jurisdiction of USACE shall be included in the same MMP. All mitigation requirements determined through this process shall be implemented before grading plans are approved. The MMP shall be submitted to USACE and approved prior to the issuance of any permits under Section 404 of the CWA.

Water quality certification pursuant to Section 401 of the CWA will be required before issuance of the Section 404 permit. Before construction in any areas containing wetland features, the City shall obtain water quality certification for the Off-site Water Facilities. Any measures required as part of the issuance of water quality certification shall be implemented.

Implementation: City of Folsom Utilities Department

Timing: Before the approval of grading or improvement plans or any ground-disturbing activities for all the Off-site Water Facilities containing wetland features or other waters of the U.S. The MMP must be approved before any impact on wetlands can occur. Mitigation shall be implemented on an ongoing basis throughout and after construction, as required.

Enforcement: 1. U.S. Army Corps of Engineers, Regional Water Quality Control Board, California Department of Fish and Game.

Mitigation Measure 3B.3-1b: Maximize Use of Trenchless Technology for Conveyance Pipeline Design.

Following the selection of a Off-site Water Facility Alternative, the City shall design and route the water conveyance pipeline to avoid waters of the U.S. and State, including wetlands and vernal pools, to the maximize extent practical. Where avoidance is not practical, the City shall maximize the use of trenchless technologies (micro-tunneling or jack-and-bore), where feasible.

All trenchless construction crossings will include the preparation of a Frac-Out (or inadvertent return of drilling lubricants) Contingency Plan for tunneling activities that use drilling lubricants (e.g., construction of pipelines using jack-and-bore methods). The purpose of the plan will be to minimize the potential for a frac-out associated with tunneling activities, provide for the timely detection of frac-outs, and ensure an organized, timely, and "minimum-impact" response in the event of a frac-out and release of drilling lubricant (i.e., bentonite). Preparation and implementation of a Frac-Out Contingency Plan will be reflected in contract documents.

Implementation: City of Folsom Utilities Department

Timing: Prior to and during construction of all Off-site Water Facilities

Enforcement: 1. U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Regional Water Quality Control Board, California Department of Fish and Game.

Mitigation Measure 3B.3-1c: Restore all Waters Impacted by Trenching and Temporary Construction Staging Areas to Pre-Project Contours and Conditions.

For all water line crossings of waters of the U.S. or waters of the state in which the use of trenchless technologies are not feasible, the City shall ensure that all waters impacted by trenching activities are restored to pre-project contours and conditions. In addition, within 30 days following project construction, the City shall ensure that all temporary construction staging areas within waters of the U.S. or waters of the state are restored to pre-project contours and conditions.

At minimum, the City shall ensure that the following measures are implemented during construction:

- Conduct trenching and construction activities across drainages during low-flow (e.g., <1 to 2 cfs) or dry periods as feasible;
- If working in active channels, install cofferdam upstream and downstream of stream crossing to separate construction area from flowing waterway;
- Place sediment curtains upstream and downstream of the construction zone to prevent sediment disturbed during trenching activities from being transported and deposited outside of the construction zone;
- Locate spoil sites such that they do not drain directly into the drainages or seasonal wetlands;
- Store equipment and materials away from the drainages and wetland areas. No debris will be deposited within 250 feet of the drainages and wetland areas;
- Prepare and implement a revegetation plan to restore vegetation in all temporarily disturbed wetlands and other waters using native species seed mixes and container plant material that are appropriate for existing hydrological conditions.

Before the approval of grading and improvement plans and before any groundbreaking activity associated with the Off-site Water Facilities requiring fill of wetlands or other waters of the U.S. or waters of the state, the City shall submit a wetland mitigation and monitoring plan (MMP) for the restoration of these waters within the selected water alignment to the USACE and Central Valley RWQCB for review and approval of those portions of the plan over which they have jurisdiction. The MMP would have to be approved prior to issuance of a Section 404 permit. Once the final MMP is approved and implemented, mitigation monitoring shall continue for a minimum of 5 years from completion of restoration activities, or human intervention (including recontouring and grading), or until the performance standards identified in the approved MMP have been met, whichever is longer.

At minimum, the MMP shall provide the following information:

- A description and drawings showing the existing contours (elevation) and existing vegetation of the waters of the U.S. and waters of the state that would be impacted through trenching activities. This information shall include site photographs taken at each impacted water.
- Methods used to ensure that trenching within waters of the U.S. and waters of the state do not adversely alter existing hydrology, including the draining of the waters (e.g., use of cut-off walls).

- The methods used to restore the site to the original contour and condition, as well as a plan for the revegetation of the site following installation of the water line.
- Proposed schedule for restoration activities.

Implementation: City of Folsom Utilities Department

Timing: Before the approval of grading or improvement plans or any ground-disturbing activities for all the Off-site Water Facilities containing wetland features or other waters of the U.S.

Enforcement:
1. U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Regional Water Quality Control Board, California Department of Fish and Game.
2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
3. For improvements within Sacramento County or City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.

Mitigation Measure: Implement Mitigation Measure 3A.3-1a.

Implementation: City of Folsom Utilities Department

Timing: Prior to and during construction of all Off-site Water Facilities

Enforcement:
1. U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Regional Water Quality Control Board, California Department of Fish and Game.
2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
3. For improvements within Sacramento County or City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.

1

Off-site Water Facility Alternative 1 would involve similar construction and operational activities as previously described for the Proposed Off-site Water Facility. Unlike the previous alternative, this alternative would involve the construction of the off-site White Rock WTP. Table 3B.3-4 provides a breakdown of the different wetland types potentially impacted by construction of this alternative.

The 200-foot corridor and WTP site for Off-site Water Facility Alternative 1 contain a total of ±11.1 acres of waters of the U.S., including wetlands and vernal pools. The left half of the 200-hundred-foot corridor contains up to 0.76 acres of seasonal wetland, 1.3 acres of seasonal wetland swale, 2.34 acres of vernal pools, 0.67 acres of riverine habitat, 1.08 acres freshwater emergent wetland, and 0.43 acres of freshwater pond that could be subject to fill, excavation, or indirect impacts (e.g., sedimentation) during construction. Along the right half of the two-hundred-foot corridor, up to 1.29 acres of seasonal wetland, 1.55 acres of seasonal wetland swale, 3.36 acres of vernal pools, 0.76 acres of riverine habitat, 0.93 acres freshwater emergent wetland, and 0.13 acres of freshwater forested/ willow scrub could be subject to fill, excavation, or indirect impacts (e.g., sedimentation) during construction.

Of these wetland acreages, up to 0.21 acres of seasonal wetland, 0.36 acres of seasonal wetland swale, 0.34 acres of vernal pools, and 0.17 acres of riverine habitat, and 0.1 acres of freshwater emergent wetland, are included on the White Rock WTP site (ECORP, 2009). These wetland features are primarily associated with a seasonal drainage feature that traverse the White Rock WTP site diagonally from northeast to southwest.

Based on the preliminary estimates provided in Table 3B.3-4, the potential **direct** and **indirect** impacts to waters of the U.S., including wetlands, under this alternative during construction could be up to 8.0 acres. Because the City has not yet completed project specific engineering details for this alternative, the actual impacts to waters of the U.S., including wetlands, cannot be determined. For these reasons, this impact is considered **potentially significant**. ***[Greater]***

Mitigation Measure: Implement Mitigation Measures 3B.3-1a, 3B.3-1b, 3B.3-1c, and 3A.3-1a.

1A

Off-site Water Facility Alternative 1A would involve similar construction and operational activities as previously described for Off-site Water Facility Alternative 1. The 200-foot corridor for Alternative 1A contains a total of ±12.8 acres of waters of the U.S., including wetlands and vernal pools. Table 3B.3-4 provides a breakdown of the different wetland types potentially impacted by construction of this alternative. As shown along the left half of the two-hundred-foot corridor, up to 0.88 acres of seasonal wetland, 1.31 acres of seasonal wetland swale, 2.36 acres of vernal pools, 0.68 acres of riverine habitat, 1.05 acres freshwater emergent wetland, and 0.62 acres of freshwater pond could be subject to fill, excavation, or indirect impacts (e.g., sedimentation) during construction. Along the right half of the two-hundred-foot corridor, up to 1.45 acres of seasonal wetland, 1.55 acres of seasonal wetland swale, 3.35 acres of vernal pools, 0.76 acres of riverine habitat, 0.93 acres freshwater emergent wetland, and 0.26 acres of freshwater pond could be subject to fill, excavation, or indirect impacts (e.g., sedimentation) during construction. Of these wetland acreages, up to 0.21 acres of seasonal wetland, 0.36 acres of seasonal wetland swale, 0.34 acres of vernal pools, and 0.17 acres of riverine habitat, and 0.1 acres of freshwater emergent wetland are included on the White Rock WTP site.

Based on the preliminary estimates provided in Table 3B.3-4, the potential **direct** and **indirect** impacts to waters of the U.S., including wetlands, under this alternative during construction could be up to 8.3 acres. Because the City has not yet completed project specific engineering details for this alternative, the actual impacts to waters of the U.S., including wetlands, cannot be determined. Based on these considerations, impacts to wetlands and waters of the U.S. could be **potentially significant**. ***[Greater]***

Mitigation Measure: Implement Mitigation Measures 3B.3-1a, 3B.3-1b, 3B.3-1c, and 3A.3-1a.

2

Off-site Water Facility Alternative 2 would involve similar construction and operational activities as previously described for the Proposed Off-site Water Facility; however, this alternative would not involve the construction of a WTP. The 200-foot corridor for Off-site Water Facility Alternative 2 contains a total of ±22.7 acres of waters of the U.S., including wetlands and vernal pools. Table 3B.3-4 provides a breakdown of the different wetland types potentially impacted by construction of this alternative. Along the left half of the 200-foot corridor, up to 1.1 acres of seasonal wetland, 1.28 acres of seasonal wetland swale, 2.73 acres of vernal pools, 3.22 acres of riverine habitat, 3.26 acres freshwater emergent wetland, and 0.35 acres of freshwater pond could be subject to fill, excavation, or indirect impacts (e.g., sedimentation) during construction. Along the right half of the 200-foot corridor, up to 1.7 acres of seasonal wetland, 0.7 acres of seasonal wetland swale, 2.08 acres of vernal pools, 1.86 acres of riverine habitat, 3.93 acres freshwater emergent wetland, 3.07 acres of freshwater pond, and 0.13 acres of freshwater forested/willow scrub could be subject to fill, excavation, or indirect impacts (e.g., sedimentation) during construction. In addition, the Vineyard SWTP sites contains just under 3.6 acres of wetlands, mainly in the form of freshwater emergent marsh; however, as provided in Chapter 2, "Alternatives," improvements associated

with this alternative would be limited to the developed footprint of the SWTP and, therefore, these wetland areas are not included in the acreage estates for this alternative.

Based on the preliminary estimates provided in Table 3B.3-4, the potential **direct** and **indirect** impacts to waters of the U.S., including wetlands, under this alternative during construction could be up to 25.4 acres. Because the City has not yet completed project specific engineering details for this alternative, the actual impacts to waters of the U.S., including wetlands, cannot be determined. With additional wetland areas potentially affected along Eagles Nest Road, the magnitude of wetland impacts would be greater under this alternative as compared to the Proposed Off-site Water Facility Alternatives, and the **direct** and **indirect** impacts are considered **potentially significant**. ***[Greater]***

Mitigation Measure: Implement Mitigation Measures 3B.3-1a, 3B.3-1b, 3B.3-1c, and 3A.3-1a.

2A

Off-site Water Facility Alternative 2A would involve similar construction and operational activities as previously described for the Proposed Off-site Water Facility; however, this alternative would not involve the construction of a WTP. The 200-foot corridor for Off-site Water Facility Alternative 2A contains a total of ±22.7 acres of waters of the U.S., including wetlands and vernal pools. Table 3B.3-4 provides a breakdown of the different wetland types potentially impacted by construction of this alternative. As shown along the left half of the 200-foot corridor, up to 2.08 acres of seasonal wetland, 0.79 acres of seasonal wetland swale, 2.36 acres of vernal pools, 3.20 acres of riverine habitat, 1.24 acres freshwater emergent wetland, and 0.39 acres of freshwater pond could be subject to fill, excavation, or indirect impacts (e.g., sedimentation) during construction. Along the right half of the two-hundred-foot corridor, up to 1.66 acres of seasonal wetland, 0.58 acres of seasonal wetland swale, 1.99 acres of vernal pools, 1.81 acres of riverine habitat, 3.24 acres freshwater emergent wetland, and 3.29 acres of freshwater pond could be subject to fill, excavation, or indirect impacts (e.g., sedimentation) during construction. In addition, the Vineyard SWTP sites contains just under 3.6 acres of wetlands, mainly in the form of freshwater emergent marsh; however, as provided in Chapter 2, "Alternatives," improvements associated with this alternative would be limited to the developed footprint of the SWTP and, therefore, these wetland areas are not included in the acreage estates for this alternative.

Based on the preliminary estimates provided in Table 3B.3-4, the potential **direct** and **indirect** impacts to waters of the U.S., including wetlands, under this alternative during construction could be up to 12.6 acres. Because the City has not yet completed project specific engineering details for this alternative, the actual impacts to waters of the U.S., including wetlands, cannot be determined. With additional wetland areas potentially affected along Excelsior Road, the magnitude of wetland impacts would be greater under this alternative as compared to the Proposed Off-site Water Facility Alternative, and the **direct** and **indirect** impacts are considered **potentially significant**. ***[Greater]***

Mitigation Measure: Implement Mitigation Measures 3B.3-1a, 3B.3-1b, 3B.3-1c, and 3A.3-1a.

2B

Off-site Water Facility Alternative 2B would involve similar construction and operational activities as previously described for the Proposed Off-site Water Facility; however, this alternative would not involve the construction of a WTP. Additionally, the conveyance pipeline alignment under this alternative has a substantially reduced length. The 200-foot corridor for Off-site Water Facility Alternative 2B contains a total of ±4.5 acres of waters of the U.S., including wetlands and vernal pools. Table 3B.3-4 provides a breakdown of the different wetland types potentially impacted by construction of this alternative. As shown along the left half of the 200-foot corridor, up to 0.61 acres of seasonal wetland, 0.23 acres of seasonal wetland swale, 1.06 acres of vernal pools, 0.14 acres of riverine habitat, 0.53 acres freshwater emergent wetland, and 0.13 acres of freshwater forested/ willow scrub could be subject to fill, excavation, or indirect impacts (e.g., sedimentation) during construction. Along the right

half of the 200-hundred-foot corridor, up to 0.14 acres of seasonal wetland, 0.26 acres of seasonal wetland swale, 1.11 acres of vernal pools, 0.09 acres of riverine habitat, and 0.21 acres freshwater emergent wetland, could be subject to fill, excavation, or indirect impacts (e.g., sedimentation) during construction.

Based on the preliminary estimates provided in Table 3B.3-4, the potential **direct** and **indirect** impacts to waters of the U.S., including wetlands, under this alternative during construction could be up to 2.7 acres. Because the City has not yet completed project specific engineering details for this alternative, the actual impacts to waters of the U.S., including wetlands, cannot be determined. With the substantially reduced distance of the conveyance alignment, the magnitude of wetland impacts would be less under this alternative as compared to the Proposed Off-site Water Facility Alternative,and the **direct** and **indirect** impacts are considered **potentially significant**. ***[Lesser]***

Mitigation Measure: Implement Mitigation Measures 3B.3-1a, 3B.3-1b, 3B.3-1c, and 3A.3-1a.

3

Off-site Water Facility Alternative 3 would involve similar construction and operational activities as previously described for the Proposed Off-site Water Facility and Off-site Water Facility Alternative 1. The 200-foot corridor for Off-site Water Facility Alternative 3 contains a total of ±25.4 acres of waters of the U.S., including wetlands and vernal pools. Table 3B.3-4 provides a breakdown of the different wetland types potentially impacted by construction of this alternative. As shown along the left half of the 200-foot corridor, up to 1.31 acres of seasonal wetland, 1.64 acres of seasonal wetland swale, 3.07 acres of vernal pools, 3.39 acres of riverine habitat, 3.36 acres freshwater emergent wetland, and 0.35 acres of freshwater pond could be subject to fill, excavation, or indirect impacts (e.g., sedimentation) during construction. Along the right half of the two-hundred-foot corridor, up to 1.91 acres of seasonal wetland, 1.06 acres of seasonal wetland swale, 2.42 acres of vernal pools, 2.03 acres of riverine habitat, 4.03 acres freshwater emergent wetland, 3.07 acres of freshwater pond, and 0.13 acres of freshwater forested/willow scrub could be subject to fill, excavation, or indirect impacts (e.g., sedimentation) during construction. Of these wetland acreages, up to 0.21 acres of seasonal wetland, 0.36 acres of seasonal wetland swale, 0.34 acres of vernal pools, 0.17 acres of riverine habitat, and 0.1 acres of freshwater emergent wetland, are included on the White Rock WTP site.

Based on the preliminary estimates provided in Table 3B.3-4, the potential **direct** and **indirect** impacts to waters of the U.S., including wetlands, under this alternative during construction could be up to 14.7 acres Because the City has not yet completed project specific engineering details for this alternative, the actual impacts to waters of the U.S., including wetlands, cannot be determined. With additional wetland areas potentially affected along Excelsior Road, the magnitude of wetland impacts would be greater under this alternative as compared to the Proposed Off-site Water Facility Alternative, and the **direct** and **indirect** impacts are considered **potentially significant**. ***[Greater]***

Mitigation Measure: Implement Mitigation Measures 3B.3-1a, 3B.3-1b, 3B.3-1c, and 3A.3-1a.

3A

Off-site Water Facility Alternative 3A would involve similar construction and operational activities as previously described for the Proposed Off-site Water Facility and Off-site Water Facility Alternative 1. The 200-foot corridor for Off-site Water Facility Alternative 3A contains a total of ±22.7 acres of waters of the U.S., including wetlands and vernal pools. Table 3B.3-4 provides a breakdown of the different wetland types potentially impacted by construction of this alternative. As shown along the left half of the 200-foot corridor, up to 2.29 acres of seasonal wetland, 1.15 acres of seasonal wetland swale, 2.7 acres of vernal pools, 3.37 acres of riverine habitat, 1.34 acres freshwater emergent wetland, and 0.39 acres of freshwater pond could be subject to fill, excavation, or indirect impacts (e.g., sedimentation) during construction. Along the right half of the 200-foot corridor, 1.87 acres of seasonal wetland, 0.94 acres of seasonal wetland swale, 2.33 acres of vernal pools, 1.98 acres of riverine habitat,

up to 3.34 acres freshwater emergent wetland, and 3.29 acres of freshwater pond could be subject to fill, excavation, or indirect impacts (e.g., sedimentation) during construction. Of these wetland acreages, up to 0.21 acres of seasonal wetland, 0.36 acres of seasonal wetland swale, 0.34 acres of vernal pools, 0.17 acres of riverine habitat, and 0.1 acres of freshwater emergent wetland, are included on the White Rock WTP site.

Based on the preliminary estimates provided in Table 3B.3-4, the potential **direct** and **indirect** impacts to waters of the U.S., including wetlands, under this alternative during construction could be up to 13.75 acres. Because the City has not yet completed project specific engineering details for this alternative, the actual impacts to waters of the U.S., including wetlands, cannot be determined. With additional wetland areas potentially affected along Excelsior Road, the magnitude of wetland impacts would be greater under this alternative as compared to the Proposed Off-site Water Facility Alternative, and the **direct** and **indirect** impacts are considered **potentially significant**. ***[Greater]***

Mitigation Measure: Implement Mitigation Measures 3B.3-1a, 3B.3-1b, 3B.3-1c, and 3A.3-1a.

4

Off-site Water Facility Alternative 4 would involve similar construction and operational activities as previously described for the Proposed Off-site Water Facility; however, the WTP under this alternative would be constructed within a more urbanized environment and no wetland features delineated on the Folsom Boulevard WTP site. Instead, a series of linear willow scrub habitats totaling approximately 18.4 acres has formed in between some of the dredge tailings. The 200-foot corridor for Off-site Water Facility Alternative 4 contains a total of $\pm$21.9 acres of waters of the U.S., including wetlands and vernal pools. Table 3B.3-4 provides a breakdown of the different wetland types potentially impacted by construction of this alternative. As shown along the left, 100 feet of the corridor, up to 1.48 acres of seasonal wetland, 1.04 acres of seasonal wetland swale, 1.51 acres of vernal pools, 3.18 acres of riverine habitat, 2.57 acres freshwater emergent wetland, and 0.40 acres of freshwater pond could be subject to fill, excavation, or indirect impacts (e.g., sedimentation) during construction. Along the right, 100 feet of the corridor, up to 1.94 acres of seasonal wetland, 0.46 acres of seasonal wetland swale, 1.81 acres of vernal pools, 1.76 acres of riverine habitat, 2.68 acres freshwater emergent wetland, and 3.01 acres of freshwater pond could be subject to fill, excavation, or indirect impacts (e.g., sedimentation) during construction.

Based on the preliminary estimates provided in Table 3B.3-4, the potential **direct** and **indirect** impacts to waters of the U.S., including wetlands, under this alternative during construction could be up to 11.7 acres. Because the City has not yet completed project specific engineering details for this alternative, the actual impacts to waters of the U.S., including wetlands, cannot be determined. With additional wetland areas potentially affected along Eagles Nest Road, the magnitude of wetland impacts would be greater under this alternative as compared to the Proposed Off-site Water Facility Alternative. Both **direct** and **indirect** impacts to wetlands under this alternative are considered **potentially significant**. ***[Greater]***

Mitigation Measure: Implement Mitigation Measures 3B.3-1a, 3B.3-1b, 3B.3-1c, and 3A.3-1a.

4A

Off-site Water Facility Alternative 4A would involve similar construction and operational activities as previously described for the Proposed Off-site Water Facility; however, the WTP under this alternative would be constructed within a more urbanized environment with no delineated wetland features. The 200-foot corridor for Off-site Water Facility Alternative 4A contains a total of $\pm$18.4 acres of waters of the U.S., including wetlands and vernal pools. Table 3B.3-4 provides a breakdown of the different wetland types potentially impacted by construction of this alternative. As shown along the left, 100 feet of the corridor, up to 2.34 acres of seasonal wetland, 0.56 acres of seasonal wetland swale, 2.01 acres of vernal pools, 3.15 acres of riverine habitat, 0.58 acres freshwater emergent wetland, and 0.25 acres of freshwater pond could be subject to fill, excavation, or indirect impacts (e.g., sedimentation) during construction. Along the right, 100 feet of the corridor, up to 1.72 acres of seasonal

wetland, 0.34 acres of seasonal wetland swale, 1.72 acres of vernal pools, 1.71 acres of riverine habitat, 1.98 acres freshwater emergent wetland, and 2.98 acres of freshwater pond could be subject to fill, excavation, or indirect impacts (e.g., sedimentation) during construction.

Based on the preliminary estimates provided in Table 3B.3-4, the potential **direct** and **indirect** impacts to waters of the U.S., including wetlands, under this alternative during construction could be up to 10.4 acres. Because the City has not yet completed project specific engineering details for this alternative, the actual impacts to waters of the U.S., including wetlands, cannot be determined. With additional wetland areas potentially affected along Excelsior Road, the magnitude of wetland impacts would be greater under this alternative as compared to the Proposed Off-site Water Facility Alternative. Both **direct** and **indirect** impacts to wetlands under this alternative are considered **potentially significant**. ***[Greater]***

Mitigation Measure: Implement Mitigation Measures 3B.3-1a, 3B.3-1b, 3B.3-1c, and 3A.3-1a.

Implementation of Mitigation Measures 3B.3-1a, 3B.3-1b, 3B.3-1c, and 3A.3-1a would reduce significant impacts on jurisdictional wetlands and waters of the U.S. and waters of the state under the Off-site Water Facility Alternatives. Presuming the City completes additional routing analysis and prepares a mitigation plan that is acceptable to USACE and implemented as required, the direct and indirect impacts resulting from the Off-site Water Facility Alternatives could be mitigated to a **less-than-significant** level by providing "no net loss" of overall wetland acreage, as required in USACE permit conditions.

IMPACT 3B.3-2 Loss and Degradation of Habitat for Special-Status Wildlife Species and Potential Direct Take of Individuals. *The Off-site Water Facility Alternatives have the potential to result in a substantial adverse effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special-status by DFG, NMFS, and USFWS. Impacts could include loss and degradation of habitat for several special-status wildlife species or take of listed species, including vernal pool invertebrates, valley elderberry longhorn beetle, and Swainson's hawk.*

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A

As provided in Chapter 2, Alternatives, the "Water" Study Area includes four separate zones, however, construction activities would be limited to Zone 4 where physical improvements are proposed. In this context, this analysis provides discussions for the construction and operational impacts to special status wildlife species as a result of the Off-site Water Facility Alternatives.

Construction Impacts

Twenty-five special-status terrestrial wildlife species were identified as having the potential to occur within 5 miles of Zone 4 of the "Water" Study Area with 16 of these species having a moderate to high potential for occurrence, including vernal pool and conservancy fairy shrimp, Swainson's hawk, valley elderberry longhorn beetle, and vernal pool tadpole shrimp. Zone 4 of the "Water" Study Area also provides habitat for several species of concern, which include western spadefoot toad, burrowing owl, and pallid bat. Construction of the pipeline alignments, pump stations, and WTPs under these Off-site Water Facility Alternatives may result in direct or indirect impacts to animal species listed in Table 3B.3-5. Table 3B.3-2 presents a detailed accounting of those wildlife species potentially affected by each alternative conveyance alignment and WTP site. Specific impacts to special-status species are addressed below.

Vernal Pool Fairy Shrimp and Vernal Pool Tadpole

Vernal pools, seasonal wetlands, and seasonal wetland swale are documented throughout Zone 4 of the "Water" Study Area, comprising approximately 10.8 acres, 7.8 acres, and 4.9 acres, respectively, and support special-status invertebrates such as vernal pool fairy shrimp and vernal pool tadpole shrimp. Other species may include

California linderiella fairy shrimp (*Linderiella occidentalis*) or conservancy fairy shrimp (*Branchinecta conservatio*). As shown in Table 3B.3-5, vernal pool fairy shrimp and vernal pool tadpole shrimp are known to occur in the vicinity of all the Off-site Water Facility Alternatives that cross through Zone 4 of the "Water" Study Area. Depending on the location of the construction (i.e., roadway centerline verses shoulder) construction activities associated with the pipelines and WTPs could result in **significant direct** and **indirect** impacts to vernal pool habitat and, hence, vernal pool crustaceans. ***[Similar]***

Excavation and trenching activities could directly impact vernal pools, which could result in habitat loss or injury to individuals by filling or excavation within suitable habitat. Direct impacts could be minimized or avoided by constructing the conveyance alignments primarily along and within existing roadways or by using trenchless construction techniques to cross larger vernal pool or wetland features. However, without a more detailed alignment for each of the Off-site Water Facility Alternatives, such a determination is not possible. Temporary dewatering activities during construction could cause mortality of individual wetland species, especially vernal pool crustaceans. (See also discussion of dewatering in Section 3B.17, "Groundwater – Water"). Generally, the USFWS considers disturbance within 250 feet of vernal pool crustacean habitat to be an indirect impact to the species (USFWS 1996). Construction activities associated with pipeline and WTP facilities could result in **significant direct** impacts to vernal pool crustaceans, and may also lead to a cumulative decline of the species over time. **Indirect** impacts may include the temporary degradation of water quality or dewatering of pools during construction and could also be **significant**. ***[Similar]***

Western Spadefoot Toad and Northwestern Pond Turtle

Vernal pools, wetland, and wetland swale habitat occur throughout portions of Zone 4 of the "Water" Study Area and provide suitable habitat for special-status amphibians such as western spadefoot toad. Western pond turtle may occur in drainage ditches, sloughs, and other aquatic features within Zone 4 of the "Water" Study Area where suitable habitat is present. As shown in Table 3B.3-5, the nearest known occurrences of western spadefoot and northwestern pond turtle are within less than 1/4 mile. Construction activities associated with the conveyance pipeline and pump station facilities could result in direct and indirect impacts to vernal pools, wetlands, and creeks, and hence, potential habitat for western spadefoot toad and northwestern pond turtle. This **direct** impact is considered **potentially significant**. **Indirect** impacts may include the temporary degradation of water quality or dewatering of pools during construction and could also be **potentially significant**. ***[Similar]***

Valley Elderberry Longhorn Beetle

Table 3B.3-5 indicates that occurrences of elderberry shrubs – the exclusive habitat for valley elderberry longhorn beetle – are documented in the northeastern sections of Zone 4 of the "Water" Study Area. The nearest occurrence of these species is less than 50 feet from the centerline of White Rock Road and the planned Easton Valley Parkway (Sacramento County 2008a and 2008b, and ECORP 2009). As a result, construction of the conveyance pipelines within portions of these roadways could result in direct impacts to valley elderberry longhorn beetle.

Direct impacts to elderberry shrubs include damage, pruning, and/or removal of shrubs, potentially resulting from excavation and trenching that would be used to install pipeline across smaller ditches (less than 10 feet in width). Some direct impacts would be minimized by constructing primarily along and within existing roadways and within agricultural lands, and by using trenchless construction techniques to cross larger water bodies. Temporary dewatering activities during construction may cause mortality of individual shrubs, especially if long dewatering periods are required to construct the pipeline facilities. (See also discussion of dewatering in Section 3B.17, "Groundwater – Water").

Table 3B.3-5
Special-Status Wildlife Potentially Affected by Off-site Water Facility Alternatives

Species	Proximity to Water Project Alt.[1]	Off-site Water Facility Alternatives / Facilities									
		No USACE Permit and Proposed Alt	Alt 1	Alt 1A	Alt 2	Alt 2A	Alt 2B	Alt 3	Alt 3A	Alt 4	Alt 4A
Invertebrates											
Vernal pool fairy shrimp *Branchinecta lynchi*	<100 ft	X (A)	X (A)	X (A)	X (A)	X (A)	X (A)	X (A)	X (A)	X (A)	X (A)
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	<100 ft	X (B, E)	X (B, E)	X (B, E)	X (B, E)	X (B, E)	X (B, E)	X (B, E)	X (B, E)	X (C)	X (C)
Vernal pool tadpole shrimp *Lepidurus packardi*	<100 ft	X (A)	X (A)	X (A)	X (A)	X (A)	X (A)	X (A)	X (A)	X (A)	X (A)
Amphibians/Reptiles											
Northwestern pond turtle *Actinemys (Emys) marmorata*	<1/2 mile	--	--	--	X (B)	X (B)	X (B)	X (B)	X (B)	X (B)	X (B)
Western spadefoot toad *Spea hammondii*	<500 ft	X (A)	X (A)	X (A)	X (A)	X (A)	X (A)	X (A)	X (A)	X (A)	X (A)
Birds											
Tricolored blackbird *Agelaius tricolor*	<1/2 mile	--	--	--	X (A)	X (A)	--	X (A)	X (A)	X (A)	X (A)
Swainson's hawk *Buteo swainsoni* (breeding)	<1/2 mile	X (A)	X (A)	X (A)	X (A)	X (A)	X (A)	X (A)	X (A)	X (A)	X (A)
Grasshopper sparrow *Ammodramus savannarum*	<1/2 mile	X (A, B)	X (A, B)	X (A, B)	--	--	--	--	--	--	--
Western burrowing owl *Athene cunicularia hypugaea*	<1/2 mile	X (A, B)	X (A, B)	X (A, B)	X (A, B)	X (A, B)	X (A, B)	X (A, B)	X (A, B)	X (A, B)	X (A, B)
Loggerhead shrike *Lanius ludovicianus*	<1/2 mile	X (A, B)	X (A, B)	X (A, B)	X (A, B)	X (A, B)	X (A, B)	X (A, B)	X (A, B)	--	--
Northern harrier *Circus cyaneus*	<1/2 mile	X (A, B)	X (A, B)	X (A, B)	X (A, B)	X (A, B)	X (A, B)	X (A, B)	X (A, B)	--	--
Ferruginous hawk *Buteo regalis*	<500 ft	--	--	--	--	X (A)	--	--	X (A)	--	X (A)
White-tailed kite *Elanus leucurus*	<1/2 mile	X (A)	X (A)	X (A)	X (A)	X (A)	--	X (A)	X (A)	X (A)	X (A)
Mammals											
American badger *Taxidea taxus*	<500 ft	--	--	--	--	X (A)	--	--	X (A)	--	X (A)
Pallid bat *Antrozous pallidus*	<1/2 mile	X (A, B)	X (A, B)	X (A, B)	--	--	--	--	--	--	--

Notes:
[1] Proximity of occurrence was determined through a combination of GIS analysis and field verification, where possible.
Source: (A) – CNDDB 2008; (B) – RBI 3008; (C) – Sacramento County 2008b; (D) – City of Rancho Cordova 2005; and (E) – Sacramento County 2008a or 2008b
(Note: Source information compiled in Appendix M.)

Indirect impacts could occur if herbicides or insecticides are used in habitats adjacent to elderberry shrubs, if earthmoving activities disturb elderberry shrub roots, or if the topography and/or hydrology of the surrounding area are altered to the extent that it reduces the soil moisture surrounding the elderberry shrub. USFWS considers disturbance within 100 feet of an elderberry shrub to be a potential direct impact to valley elderberry longhorn beetle (USFWS, 1999). As a result, construction activities associated with the pipelines could result in **significant direct** and **indirect** impacts to valley elderberry longhorn beetle. ***[Similar]***

Swainson's Hawk and Other Raptors

As provided in Table 3B.3-5 and shown in Exhibit 3B.3-2, there are numerous documented sightings of Swainson's hawk within Zone 4 of the "Water" Study Area. Occurrences of nesting Swainson's hawks are documented within one mile of all the Off-site Water Facility Alternatives and 1/4 mile of the White Rock WTP. Swainson's hawk nests in trees, often within riparian habitats, and forage within cropland, fields, and open lands; hawks may occur within the alignment of each conveyance alignment alternative. Construction of the Off-site Water Facilities may temporarily and/or permanently disturb the nesting of state-threatened Swainson's hawk due to construction noise and disturbance, as well as potential nest site removal or abandonment during the breeding season.

DFG generally considers all disturbance within 1/2-mile of an active nest to be a potential impact to Swainson's hawk. Construction may also affect foraging habitat for Swainson's hawk in the Off-site Water Facilities Study Area (Swainson's Hawk Technical Advisory Committee [SHTAC] 2000). DFG generally considers impacts to suitable foraging habitat within 10 miles of an active nest to be a potential indirect impact to Swainson's hawk (SHTAC 2000). Based on this criterion, all facility siting options have a high likelihood of impacting Swainson's hawk foraging habitat. In addition, the White Rock WTP and conveyance alignment could adversely affect nesting habitat and result in a **potentially significant direct** and **indirect** impacts. ***[Similar]***

As shown in Table 3B.3-5, there are also several occurrences of burrowing owl within Zone 4 of the "Water" Study Area. Burrowing owls often occur along the edges of croplands and along drainage ditches and levees where suitable habitat containing burrows occurs. Construction of the Off-site Water Facility Alternatives may temporarily and permanently disturb the nesting of burrowing owl due to construction noise and disturbance, as well as permanent and temporary disturbance of foraging habitat. DFG generally considers all disturbance within 50 meters (160 feet) of an active nest to be a potential impact to burrowing owl (California Burrowing Owl Consortium [CBOC] 1993). Construction may also affect foraging habitat for burrowing owl in Zone 4 of the "Water" Study Area. As a result, each of the Off-site Water Facility Alternatives has a high likelihood to result in a **potentially significant direct** or **indirect** impacts on burrowing owl. ***[Similar]***

Construction of the Off-site Water Facility Alternatives could also temporarily and permanently disturb the nesting of White-tailed kite, Loggerhead shrike, and Tricolored blackbird, due to construction noise and disturbance, as well as potential nest site removal during the breeding season. Construction may also permanently and temporarily affect foraging habitat for these species within portions of the Zone 4 "Water" Study Area. Although direct impacts could be minimized or avoided by constructing primarily along and within existing roadways and by using trenchless construction techniques to cross larger water bodies, without a detailed alignment, the City is unable to confirm avoidance of impacts to these species. Additionally, DFG generally considers disturbance within 500 feet of a nesting raptor to be an impact and, therefore, construction activities associated with the conveyance pipeline, pump station, and WTP could result in **potentially significant direct** and **indirect** impacts to these species, and may also lead to a cumulative decline of the species over time. ***[Similar]***

Special-status Bats

Several special-status bat species have potential to occur within zone 4 of the "Water" Study Area, including pallid bat and Townsend's big-eared bat. These species may forage over open grassland and woodland areas, as

well as riparian areas. In addition, several small bridge crossings are present within Zone 4, which could provide suitable roosting habitat. At this time, it is unknown if these bridge structures provide suitable thermal or structural conditions for roosting bats. However, if one or more of these structures is used as a day roost, hibernation roost, or maternity colony roost, implementation of the Off-site Water Facility Alternatives could result in injury and mortality of pallid bat, Townsend's big-eared bat, or other common bat species. Day roosts are used throughout the spring and summer and maternity colony roosts can be active from approximately early April until mid-October. Hibernation roosts may be used from approximately November to early March. Loss of individual bats would be considered a **potentially significant, direct** impact. **Indirect** impact on special-status bat species could also be **potentially significant**. ***[Similar]***

Other Special-status Species

Several other special-status species have potential to occur on the project site: grasshopper sparrow, Modesto song sparrow, and American badger, as discussed below.

Zone 4 of the "Water" Study Area provides potential nesting habitat for grasshopper sparrow and Modesto song sparrow. Individuals of these species may nest in open woodland, grassland, or riparian habitats, respectively, on site. Portions of these habitats would be impacted during the implementation of the Off-site Water Facility Alternatives, however, no large habitat conversions are anticipated under the Off-site Water Facility Alternatives. As a result, direct and indirect impacts on these species as a result of the Off-site Water Facility Alternatives are considered less than significant because minor reduction in habitat is not likely to result in a substantial effect on their populations.

As provided in Table 3B.3-5, there are a few occurrences of American badger in Zone 4 of the "Water" Study Area. Due to the high mobility of this species, the relatively narrow and linear construction footprints, and the relative abundance of available habitat in Zone 4 of the "Water" Study Area, construction activities associated with the Off-site Water Facility Alternatives would not likely result in significant impacts to this species. Therefore, **direct** and **indirect** impacts to American badger would be **less than significant**. ***[Similar]***

Operational Impacts

Fish species listed for protection under CESA and known to occur within Zone 2 of the "Water" Study Area include Central Valley steelhead, winter-run and fall-run Chinook salmon, Delta smelt and green sturgeon. Other special-status fish species include longfin smelt, lamprey, hardhead, Sacramento splittail, and California roach. Each of these species are known to occur within the vicinity of Zone 2 of the "Water" Study Area at some point during the year and as a result could be impacted by the change in the agricultural delivery schedule of up to 8,000 acre-feet per year (AFY) of CVP water to a municipal and industrial (M&I) delivery schedule.

As described in more detail in Section 3B.9.3, hydrologic modeling results for the operations of the Off-site Water Facility Alternatives show no significant changes in any of the hydrologic indicators measured. The proposed change in the point of diversion and change in CVP delivery schedule are relatively minor when compared to overall flows in the Sacramento River system, including total Delta inflow and outflow, and Delta CVP and SWP exports (see Section 3B.9, "Hydrology and Water Quality – Water," for additional discussion). The minor changes in hydrologic conditions would have only very minimal impacts on overall aquatic habitat quantity and quality and would contribute additional flows to a section of the Sacramento River (e.g., Zone 2 of the "Water" Study Area). In this context, the operation of the Off-site Water Facility Alternatives would not result in any substantial changes in flows that could contribute to a reduction in fish populations or the quality or quantity of aquatic habitat within the Sacramento River system, including the Delta, for any special-status wildlife and fishery species and the **direct** and **indirect** impacts are considered **less than significant**. ***[Similar]***

As provided in Impact 3B.9-2, the major water quality changes associated with the operation of the Off-site Water Facility Alternatives are associated with the changes in the type of the return flows anticipated between agricultural and M&1 uses. Although currently a topic debate in relation to potential impacts to fishery resources,

the City acknowledges that the operation of the Off-site Water Facility Alternatives would indirectly contribute to additional ammonia loadings to the Sacramento River through discharges from SRCSD's WWTP. The extent of potential impact from increased discharges of ammonia and other priority pollutants on special status fish species would be contingent on the fate and transport of the pollutants in question in relation to the specific movement of fish under existing conditions and with the operation of the Off-site Water Facility Alternatives. Given all the various existing stressors that characterize existing river conditions combined with the fact that the Off-site Water Facility Alternatives would involve only minor hydrologic changes and essentially a trading in the type of nitrogen-based inputs to the system, potential impacts to fisheries in relation to cumulative sources of existing loadings are considered **less than significant**. ***[similar]*** Impact 3A.13.3 specially addresses the potential impacts of the corresponding increases in wastewater discharges to the SRCSD's WWTP from the SPA and SRCSD's ability to meet its waste discharge requirements.

As provided in Chapter 2, "Alternatives," implementation of the Off-site Water Facility Alternatives would not result in changes to existing irrigation patterns within NCMWC's service area or limit the availability of surface water for continued irrigated agriculture. Similarly and based on this circumstance, operation of the Off-site Water Facility Alternatives would result in no adverse effects to giant garter snake within the Natomas Basin. For this reason, a **less-than-significant** impact would occur. ***[Similar]***

Mitigation Measure 3B.3-2: Conduct Preconstruction Survey for Western Spadefoot Toad and Northwestern Pond Turtle and if Found, Implement Avoidance and Compensation Measures.

Prior to construction, a qualified biologist retained by the City shall conduct protocol-level surveys for the western spadefoot toad and northwestern pond turtle to determine if these species are currently using water features crossed by the selected alignment. If either of these species is detected, then the City shall consult with the DFG (and USFWS if appropriate) to develop additional minimization measures prior to project construction (if necessary). These additional measures may include timing restrictions for groundwater dewatering activities, construction monitoring, and long-term monitoring.

If temporary fencing is used, it shall take the form of silt fencing and temporary plastic construction fencing placed no closer than 25 feet from the edge of the protected habitat. Protective fencing around vernal pools identified as potential habitat for special-status species shall be constructed in a way that allows western spadefoot toad to access these wetlands.

Impacted western spadefoot toad habitat shall be mitigated and compensated in accordance with USFWS and DFG requirements.

Implementation: City of Folsom Utilities Department

Timing: Prior to and during construction of all Off-site Water Facilities

Enforcement:

1. U.S. Fish and Wildlife Service, California Department of Fish and Game.
2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
3. For improvements within Sacramento County or City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.

Mitigation Measure: Implement Mitigation Measures 3B.3-1a, 3B.3-1b, 3A.3-1b, 3A.3-2a, 3A.3-2b, 3A.3-2c, 3A.3-2d, 3A.3-2e, 3A.3-2f, 3A.3-2g, and 3A.3-2h.

Implementation: City of Folsom Utilities Department

Timing: Prior to and during construction of all Off-site Water Facilities

Enforcement:
1. U.S. Fish and Wildlife Service, California Department of Fish and Game.
2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
3. For improvements within Sacramento County or City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.

Mitigation Measures 3B.3-1a, 3B.3-1b, 3A.3-1b, 3A.3-2a, 3A.3-2b, 3A.3-2c, 3A.3-2d, 3A.3-2e, 3A.3-2f, 3A.3-2g, and 3B.3-2h, would lessen significant direct and indirect impacts on special-status wildlife resulting from Off-site Water Facility Alternatives NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4B. Given the linear nature of the Off-site Water Facility Alternatives and their orientation towards existing built-environments, fully compensating for direct and indirect impacts within the overall Zone 4 portion of the "Water" Study Area is considered feasible for most species potentially impacted by the alternatives under consideration. Based on the combination of preconstruction surveys, habitat preservation, and restoration measures proposed by the City, impacts to special-status wildlife species, with the exception of vernal pool crustaceans, would be avoided or minimized to a **less-than-significant** level.

In the absence of complete avoidance, impacts to vernal pool crustaceans species could only be mitigated through a combination of habitat preservation and restoration in the vicinity of the selected Off-site Water Facilities. Given that even following the restoration of the impacted area(s), the take of these species could have already occurred, the City is unable to demonstrate complete avoidance. Therefore, demonstrating full compensation for these impacts by preserving and restoring existing habitats for vernal pool crustaceans in the vicinity of the selected Off-site Water Facility Alternative is infeasible. For this reason, the direct and indirect impacts would remain **significant** and **unavoidable** for those Off-site Water Facility Alternatives unable to demonstrate complete avoidance of "take" of vernal pool species. Avoidance measures employed under the No USACE Permit Alternative to avoid direct impacts to vernal pools combined with mitigation to reduce potential indirect impacts, would reduce the overall magnitude of impact to vernal pools to a **less-than-significant** level.

IMPACT 3B.3-3 Potential Loss or Degradation of Special-Status Plant Populations and Habitat. *Implementation of the Off-site Water Facility Alternatives could result in direct removal of special-status plants, if they are present, through loss of suitable habitat or degradation of suitable habitat due to site alteration.*

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A

Seventeen special-status plant species have the potential to occur within Zone 4 of the "Water" Study Area in vernal pool, seasonal wetland, freshwater marsh, pond, oak woodland, and grassland habitats. Seven of these species—Ahart's dwarf rush, Bogg's Lake hedge-hyssop, dwarf downingia, legenere, Sacramento Orcutt grass, slender Orcutt grass, and Tuolumne button-celery—were determined to have a moderate to high potential to occur within Zone 4. Construction of the Off-site Water Facility Alternatives could adversely affect these species and their habitats by incidentally taking a species, potentially jeopardizing the viability of a population, disturbing habitat, or disruption of reproductive activities.

As provided in Table 3B.3-6, construction of the conveyance pipeline and WTPs may result in direct or indirect impacts to several special-status plant species. Certain grasslands and seasonal wetlands within and in the vicinity of Zone 4 of the "Water" Study Area are known to or may potentially provide habitat for numerous special-status plant species, including Boggs Lake hedge-hyssop, Ahart's dwarf rush, slender Orcutt grass, Sacramento Orcutt grass, and Sanford's arrowhead. As shown in Table 3B.3-6, the Off-site Water Facility Alternative alignments each contain suitable habitats for special-status plants. Therefore, each of the Off-site Water Facilities alignments and WTPs could directly or indirectly impact the habitat of one or more of these special status species, or individual plants that may inhabit areas.

Loss of suitable habitat as a result of the Off-site Water Facility Alternatives could result in direct removal or mortality of special-status plants, if they are present. Construction activities could also result in indirect impacts on special-status plants including impacts caused by sedimentation, changes in vegetation as a result of changes in land use and management practices, altered hydrology, habitat fragmentation, and the introduction of invasive species or noxious weeds from surrounding development. Because implementation of all Off-site Water Facility Alternatives could result in loss and degradation of habitat that could support special-status plant species, **direct** and **indirect** impacts on special-status plant species are considered **potentially significant**. ***[Similar]***

Mitigation Measure: Implement Mitigation Measure 3A.3-3.

Implementation: City of Folsom Utilities Department

Timing: Prior to and during construction of all Off-site Water Facilities

Enforcement:

1. U.S. Fish and Wildlife Service and California Department of Fish and Game.
2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
3. For improvements within Sacramento County or City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.

Implementation of Mitigation Measure 3A.3-3 would reduce the potentially significant impacts on special-status plant species under the Off-site Water Facility Alternatives to a **less-than-significant** level because each facility component would be required to identify and avoid special-status plant populations or provide compensation for the loss of special-status plants through creation of off-site populations, conservation easements, or other appropriate measures.

Table 3B.3-6
Special-Status Plant Species Potentially Affected by Off-site Water Facility Alternatives/Facilities

Species	Proximity To Zone 4[1]	Off-site Water Facility Alternatives / Facilities									
		No USACE Permit and Proposed Alt	Alt 1	Alt 1A	Alt 2	Alt 2A	Alt 2B	Alt 3	Alt 3A	Alt 4	Alt 4A
LISTED PLANTS											
Boggs Lake hedge-hyssop *Gratiola heterosepala*	<500 ft	X (A)	X (A)	X (A)	--	--	--	--	--	--	--
Sacramento orcutt grass *Orcuttia viscida*	<500 ft	X (A)	X (A)	X (A)	X (A)	X (A)	--	X (A)	X (A)	X (A)	X (A)
Hartweg's golden sunburst *Pseudobahia bahifolia*	<1 mile	X (A, B)	X (A, B)	X (A, B)	X (A, B)	X (A, B)	X (A, B)	X (A, B)	X (A, B)	X (A, B)	X (A, B)
Slender Orcutt grass *Orcuttis tenuis*	<1 mile	X (A, B)	X (A, B)	X (A, B)	X (A, B)	X (A, B)	--	X (A, B)	X (A, B)	X (A, B)	X (A, B)
Ahart's drawf rush *Juncus leiospermus* var. *ahartii*	<1/2 mile	X (A, B)	X (A, B)	X (A, B)	X (A, B)	X (A, B)	X (A, B)	X (A, B)	X (A, B)	X (A, B)	X (A, B)
Succulent owl's–clover *Castilleja campestris* ssp. *succulenta*	<1 mile	X (A, B)	X (A, B)	X (A, B)	--	--	--	--	--	--	--
Sanford's arrowhead *Sagittaria sanfordii*	<1/2 mile	X (A, B)	X (A, B)	X (A, B)	--	--	--	--	--	--	--
Greene's legenere *Legenere limosa*	<1/2 mile	X (F)	X (F)	X (F)	X (F)	X (F)	X (F)	X (F)	X (F)	X (F)	X (F)
SENSITIVE HABITATS											
Oak Woodland – Habitat	<500 ft	--	--	--	--	--	--	--	--	X (C)	X(C)
Riparian/Seasonal Wetlands – Habitat	<500 ft	X (B, D)	X (B, D)	X (B, D)	X (B, D)	X (B, D)	X (B, D)	X (B, D)	X (B, D)	X (B, D, C)	X (B, D,C)
Northern Hardpan Vernal Pool – Habitat	<500 ft	X (A)	X (A)	X (A)	X (A)	X (A)	X (A)	X (A)	X (A)	X (A)	X (A)

Notes:
[1] Proximity of occurrence was determined through a combination of GIS analysis and field verification, where possible.
Source: (A) – CNDDB 2008; (B) – RBI 2008; (C) – Sacramento County 2008b; (D) – City of Rancho Cordova 2005; (E) – Sacramento County 2008a or 2008b; and (F) ECORP 2009 (Note: Source information compiled in Appendix M.)

IMPACT 3B.3-4 Loss of Sensitive Natural Communities (Not Already Covered under Other Impacts). *Construction and operation of the Off-site Water Facility Alternatives has the potential to have a substantial adverse effect on local riparian and woodland habitats. These are natural communities considered sensitive by state and local resource agencies and require consideration under CEQA.*

NCP, PA, 1, 1A

Table 3B.3-7 provides a breakdown of the different plant communities included within the 200-foot construction corridor for these alternatives along with an additional breakdown of the acreages within the 100-feet to the right and left of the alignment. The left and right sides of the alignment corridor are defined as the sides of the roadway when facing in the direction of flow (i.e., facing toward the SPA, with the source of water or Freeport Project at the observer's back). As provided in Table 3B.3-7, these Off-site Water Facility Alternatives contain up to 0.7 acres of marsh, 0.5 acres of oak-dominated woodland, and 0.3 acres of elderberry savanna total within each alignment corridor. In addition, it is important to note that although Table 3B.3-7 does not reflect any riparian habitat for these alternatives, these estimates conflict with the riparian acreages provided in Table 3B.3-4 for these alternatives. This is due to the fact that data from the National Wetlands Inventory (2009) was used in deriving the habitat estimates for Table 3B.3-4, but not for the estimates in Table 3B.3-7. For this reason, a worst-case estimate is being used for potential riparian impacts under these alternatives using the estimates provided in Table 3B.3-4 of approximately 0.6 acres total. Implementation of these Off-site Water Facility Alternatives could result in disturbance and/or removal of these natural communities at several locations along the conveyance alignments and WTP sites. Riparian areas potentially affected by these alternatives include Buffalo Creek, Morrison Creek, and Laguna Creek.

Given uncertainties regarding the timing of construction, precise location of the conveyance alignment, and other roadway improvement projects proposed within eastern Sacramento County, it is possible that construction could extend into areas adjacent to the roadways thereby requiring the crossing of these water features and their associated riparian corridors. Trenchless or in-channel construction techniques may be used to cross smaller drainages with trenchless construction potentially occurring at larger waterway crossings such as Morrison, Buffalo, and Laguna Creeks. As engineering design progresses, the City anticipates completing additional routing analysis before finalizing the method for each crossing in consultation with DFG, the Central Valley RWQCB, and USFWS, as appropriate. Similarly, the placement of the WTP under these alternatives has not been determined for the approximately 68-acre White Rock WTP and, therefore, the exact acreage of affected riparian habitat cannot be quantified at this time. For these reasons and based on the program-level of this analysis, the City concludes that up to 0.5 acres of riparian habitat (see Table 3B.3-4), 0.6 acres of marsh, 0.5 acres of oak-dominated woodland, and 0.3 acres of elderberry savanna could be directly impacted under these alternatives if impacts are limited to one side of the alignment corridor.

Dewatering of trenches or smaller ditches could temporarily affect riparian vegetation, depending on the length of time necessary to install the pipeline and the season of construction. Indirect impacts to riparian vegetation, such as fuel spills and/or disturbance of roots, may also occur under unanticipated circumstances thereby resulting in adverse impacts to riparian resources. The potential impacts of constructing these alternatives could include the direct loss of these acreages from facility footprints, construction-related disturbance, and indirect water quality impacts. For this reason, **direct** and **indirect** impacts resulting from construction would be **potentially significant**. ***[Similar]***

As provided in Table 3B.9-3, of Section 3B.9, Hydrology and Water Quality "Water," the operation of the Off-site Water Facility Alternatives would involve negligible changes to existing flows within Zone 2 of the "Water" Study Area and downstream locations within the Delta. Based on these findings, neither the operations of the Off-site Water Facilities nor the assignment of water supplies from NCMWC in the Sacramento River basin would have substantial adverse effects on riparian habitat or other sensitive natural communities along the Sacramento River as a result of substantial changes in water levels or diversion of flow. No new groundwater pumping would

be required within NCMWC's service area and, therefore, no changes to surface water hydrology within wetlands and other sensitive wetland features within the NCMWC's service area is anticipated. For these reasons, **direct** and **indirect** impacts to sensitive communities from long-term operation of the Off-site Water Facilities would be **less than significant**. ***[Similar]***

Table 3B.3-7
Summary of Plant Communities for Each Off-site Water Facility Alternative

Wetland Type	NCP/PA		1[1]		1A[1]		2		2A		2B		3[1]		3A[1]		4[2]		4A[2]	
	L[(3)]	*R*	*L*	*R*	*L*	*R*	*L*	*R*	*L*	*R*	*L*	*R*	*L*	*R*	*L*	*R*	*L*	*R*	*L*	*R*
Annual Grassland	124.2	116.6	189.2	180.7	180.7	183.8	122.8	109.2	108.3	107.5	47.9	50.7	191.2	177.6	176.7	175.9	137.2	139.1	117.3	134.1
Canal	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	--	--	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Dredge Tailings	5.9	4.4	5.9	4.4	--	--	5.8	4.4	--	--	4.4	5.9	5.9	4.4	--	--	113.2	114.2	113.2	114.2
Elderberry Savannah	0.3	--	0.3	--	--	--	0.3	--	--	--	--	0.3	0.3	--	--	--	--	--	--	--
Fremont Cottonwood	0.6	1.6	0.6	1.6	4.4	1.4	0.7	1.6	1.2	1.4	1.5	0.7	0.7	1.6	1.2	1.4	22.2	22.6	22.15	22.6
Marsh	0.6	0.1	0.6	0.1	0.6	0.1	1.8	0.4	--	--	--	--	1.8	0.4	--	--	1.8	0.4	--	--
Irrigated Agriculture	17.4	8.8	17.3	8.8	17.3	8.8	9.5	12.9	6.8	5	4.1	6.8	9.5	12.9	6.8	5	2.9	9.1	0.2	1.1
Lacustrine	--	--	--	--	--	--	--	1.2	--	1.2	--	--	--	1.2	--	1.2	--	1.2	--	1.2
Urban	40.7	59.1	39.8	58.4	36.1	56.3	67.2	73.3	75.2	76.4	20.8	14.2	67.2	73.3	75.2	76.4	71.7	61.3	83.2	66.7
Woodlands (Oak)	0.5	--	0.5	--	0.5	--	--	5.2	0.3	2.8	--	--	--	5.1	0.3	0.2	2.6	5.3	2.9	0.3
Valley Foothill Riparian	--	--	--	--	--	--	3.3	2.6	3.5	2.8	--	--	3.3	2.6	3.5	2.8	3.6	2.7	3.8	2.9
Coyote Scrub	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10.5	7.9	10.5	7.9
Willow Scrub	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	17.4	16.8	17.4	16.8

Note: acreage rounded to the nearest tenth

[1] Acreages include White Rock WTP site

[2] Acreages includes Folsom Boulevard WTTP site.

[3] L=left side of 200-foot corridor; R=right side of 200-foot corridor. Left and right sides of the alignment corridor are defined as the sides of the roadway when facing in the direction of flow (i.e., facing toward the SPA, with the Freeport Project at the observer's back).

Source: ECORP 2009; and RMC 2010

Mitigation Measure: Implement Mitigation Measures 3B.3-1a, 3B.3-1b, 3A.3-1b, and 3A.3-4a.

Implementation: City of Folsom Utilities Department

Timing: Prior to and during construction of all Off-site Water Facilities

Enforcement: 1. California Department of Fish and Game and Regional Water Quality Control Board.

2 and 2A

Off-site Water Facility Alternative 2 and 2A would not involve the construction of any new WTP facilities; however, as shown in Table 3B.3-7, the alternative alignment considered under these alternatives could entail substantially higher impacts on up to a total of 5.9 and 6.3 acres of riparian habitat, respectively. As provided in Table 3B.3-7, these Off-site Water Facility Alternatives also contain up to 2.2 acres of marsh (only Alternative 2), 5.2 and 3.1 acres of oak-dominated woodland, and 0.3 acres of elderberry savanna (only Alternative 2). Based on these estimates, these alternatives have the potential to impact up to 3.3 and 3.5 acres of riparian habitat, respectively, if impacts are limited to one side of the roadway along with potential disturbance and/or removal of other natural communities. Riparian areas potentially affected by these alternatives include Buffalo Creek, Morrison Creek, Elder Creek, and Mather Lake. The potential impacts of constructing these alternatives could include the direct loss of these acreages from facility footprints, construction-related disturbance, and indirect water quality impacts. For this reason, potential **direct** and **indirect** impacts resulting from construction would be **potentially significant**. ***[Greater]***

Mitigation Measure: Implement Mitigation Measures 3B.3-4, 3B.3-1a, 3B.3-1b and 3A.3-1b.

Similar to the Proposed Off-site Water Facility Alternative, direct and indirect impacts to sensitive communities from long-term operation of the Off-site Water Facilities under these alternatives would be **less than significant**. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

2B

Off-site Water Facility Alternative 2B would not involve the construction of any new WTP facilities and would have a substantially reduced impact on riparian habitat. As provided in Table 3B.3-7, this Off-site Water Facility Alternative only contains up to 0.3 acres of elderberry savanna. Based on these estimates, this alternative would not impact any riparian habitat and disturbance and/or removal would be limited to elderberry savanna. Based on the substantially reduced potential for impacts to sensitive habitat under this alternative, potential **direct** and **indirect** impacts resulting from construction would be **less than significant**. ***[Lesser]***

Mitigation Measure: No mitigation measures are required.

Similar to the Proposed Off-site Water Facility Alternative, **direct** and **indirect** impacts to sensitive communities from long-term operation of the Off-site Water Facilities under these alternatives would be **less than significant**. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

3 and 3A

Off-site Water Facility Alternative 3 and 3A would involve the construction of the White Rock WTP facilities and, therefore, the estimates provided in Table 3B.3-4 of approximately 0.6 acres of riparian (riverine) habitat for the White Rock WTP site would also apply to this alternative. In addition, as shown in Table 3B.3-7, these alternative alignments considered under these alternatives could entail substantially higher impacts on up to 5.9 and 6.3 acres of riparian habitat, respectively. As shown in Table 3B.3-7, these Off-site Water Facility Alternatives also contain up to 2.2 acres of marsh (only Alternative 3), 5.4, and 2.8 acres of oak-dominated woodland, and 0.3 acres of elderberry savanna (only Alternative 3). Based on these estimates, these alternatives have the potential to impact up to 3.3 and 3.5 acres of riparian habitat, respectively, if impacts are limited to one side of the roadway along disturb and/or remove other natural communities. Riparian areas potentially affected by these alternatives include Buffalo Creek, Morrison Creek, Elder Creek, and Mather Lake. The potential impacts of

constructing these alternatives could include the direct loss of these acreages from facility footprints, construction-related disturbance, and indirect water quality impacts. For this reason, potential **direct** and **indirect** impacts resulting from construction would be **potentially significant.** ***[Greater]***

Mitigation Measure: Implement Mitigation Measures 3B.3-4, 3B.3-1a, 3B.3-1b and 3A.3-1b.

Similar to the Proposed Off-site Water Facility Alternative, direct and indirect impacts to sensitive communities from long-term operation of the Off-site Water Facilities under these alternatives would be **less than significant**. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

4 and 4A

Off-site Water Facility Alternative 4and 4A would involve the construction of the 120-acre Folsom Boulevard WTP and an alternative conveyance alignment. As provided in Table 3B.3-7, these Off-site Water Facility Alternatives also contain up to 2.2 acres of marsh (only Alternative 4), 7.9, and 3.2 acres of oak-dominated woodland, 6.3 and 6.7 acres of valley foothill riparian, and 2.2 acres of willow scrub. Based on these estimates, these alternatives have the potential to impact up to 3.6 and 3.8 acres of riparian habitat, respectively, is impacts are contained to one side of the alignment corridor along with disturbance and/or removal of other natural communities. Riparian areas potentially affected by these alternatives include Buffalo Creek, Elder Creek, and Mather Lake. The potential impacts of constructing these alternatives could include the direct loss of these acreages from facility footprints, construction-related disturbance, and indirect water quality impacts. For this reason, potential **direct** and **indirect** impacts resulting from construction would be **potentially significant.** ***[Greater]***

Mitigation Measure: Implement Mitigation Measures 3B.3-4, 3B.3-1a, 3B.3-1b and 3A.3-1b.

Similar to the Proposed Off-site Water Facility Alternative, direct and indirect impacts to sensitive communities from long-term operation of the Off-site Water Facilities under these alternatives would be **less than significant**. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

Implementation of Mitigation Measures 3A.3-1a, 3B.3-1a, 3B.3-1b, and 3A.3-1b would reduce significant impacts on sensitive natural communities under the Off-site Water Facility Alternatives to a **less-than-significant** level because a mitigation and monitoring plan ensuring adequate compensation for the loss of riparian habitat would have to be developed and implemented as a condition of the streambed alteration permit.

IMPACT 3B.3-5 Loss of Individual Oak Trees. *Implementation of the Off-site Water Facility Alternatives could result in the removal of oak woodland and individual oak trees meeting the criteria for protection under Folsom Municipal Code and the Sacramento County Tree Ordinance.*

NCP, PA, 1, and 1A

These alternatives could involve the removal or disturbance of several oak trees that occur within the 200-foot corridor under consideration. Similar to other natural features evaluated in this section, the City further analyzed the right and left one hundred feet within the corridor to determine if any substantial reductions in habitat impacts could be achieved by constructing facilities on the side of the corridor with fewer trees. As shown in Table 3B.3-8, the implementation of these alternatives could result in the removal or disturbance of approximately 5 interior live oaks and 2 valley oaks measuring 6 inches or greater in diameter at breast height.

Because construction of Off-site Water Facilities components could require the removal of trees, including oak species, the County of Sacramento may require a permit for the pruning or removal of protected trees within its jurisdiction. Therefore, this **direct** and **indirect** impact is considered **potentially significant**. ***[Similar]***

Table 3B.3-8
Trees Potentially Affected by Each Off-site Water Facility Alternative Corridor[a]

Wetland Type	No USACE Permit and PA		1		1A		2		2A		2B		3		3A		4		4A	
	L	*R*	*L*	*R*	*L*	*R*	*L*	*R*	*L*	*R*	*L*	*R*	*L*	*R*	*L*	*R*	*L*	*R*	*L*	*R*
Blue Oak	--	--	--	--	--	--	1	--	--	--	--	--	1	--	--	--	51	12	139	13
Interior Live Oak	3	2	3	2	3	2	1	9	82	6	--	--	1	9	82	6	199	29	187	67
Valley Oak	1	1	1	1	1	1	--	--	--	1	--	--	--	--	--	38	18	61	39	22
Eucalyptus	2	1	2	1	2	1	6	4	6	4	1	1	6	4	6	4	--	3	4	3
Chinese Pistache	--	--	--	--	--	--	--	--	4	--	--	--	--	--	4	--	--	--	4	--
Sycamore	--	3	--	3	--	3	--	3	--	3	3	--	--	3	--	3	39	39	41	--
Willow	--	--	--	--	--	--	--	--	1	--	--	--	--	--	1	--	--	--	1	--
Liquid Amber	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	1	--	--	--	1
Zelkova	--	--	--	--	--	--	--	--	7	--	--	--	--	--	7	--	--	--	7	--

Notes:
[a] Rounded to the nearest tenth.
Source: ECORP 2009 and RMC 2010

Mitigation Measure: Implement Mitigation Measure 3A.3-5.

Implementation: City of Folsom Utilities Department

Timing: Prior to and during construction of all Off-site Water Facilities

Enforcement:
1. U.S. Fish and Wildlife Service, California Department of Fish and Game.
2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
3. For improvements within Sacramento County or City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.

2 and 2A

These alternatives could involve the removal or disturbance of several oak trees that occur within the 200-foot corridor under consideration. As provided in Table 3B.3-8, the implementation of these alternatives could result in the removal or disturbance of approximately 10 interior live oaks under Alternative 2 and 88 interior live oaks under Alternative 2A measuring 6 inches or greater in diameter at breast height. It is important to note that the

vast majority of these trees occur along one side of the alignment, so it is likely that the alignment can be adjusted to minimize tree removal.

Because construction of Off-site Water Facilities components could require the removal of trees, including oak species, the County of Sacramento may require a permit for the pruning or removal of protected trees within its jurisdiction. The City of Rancho Cordova also has an adopted City's Tree Preservation and Protection Ordinance that would be applicable to portions of the respective Off-site Water Facility Alternatives that cross the City of Rancho Cordova's jurisdiction. Therefore, this **direct** and **indirect** impact is considered **potentially significant.** ***[Greater]***

Mitigation Measure: Implement Mitigation Measure 3A.3-5.

2B

No oak trees are located within 200-foot corridor under consideration for this alternative and, therefore, no removal or disturbance of several oak species that occur. For this reason, **no direct** and **indirect** impacts would occur. ***[Lesser]***

Mitigation Measure: No mitigation measures are required.

3 and 3A

These alternatives could involve the removal or disturbance of several oak trees that occur within the 200-foot corridor under consideration. As provided in Table 3B.3-8, the implementation of these alternatives could result in the removal or disturbance of approximately 10 interior live oaks under Alternative 2 and 88 interior live oaks under Alternative 2A measuring 6 inches or greater in diameter at breast height. It is important to note that the vast majority of these trees occur along one side of the alignment.

Because construction of Off-site Water Facilities components could require the removal of trees, including oak species, the County of Sacramento may require a permit for the pruning or removal of protected trees within its jurisdiction. The City of Rancho Cordova also has an adopted City's Tree Preservation and Protection Ordinance that would be applicable to portions of the respective Off-site Water Facility Alternatives that cross the City of Rancho Cordova's jurisdiction. Therefore, this **direct** and **indirect** impact is considered **potentially significant**. ***[Greater]***

Mitigation Measure: Implement Mitigation Measure 3A.3-5.

4 and 4A

These alternatives could involve the removal or disturbance of several oak trees that occur within the 200-foot corridor under consideration. As provided in Table 3B.3-8, the implementation of these alternatives could result in the removal or disturbance of approximately 63 blue oaks, 228 interior live oaks, and 79 valley live oaks under Alternative 4. Up to 152 blue oaks, 254 interior live oaks, and 61 valley live oaks under Alternative 4A measuring 6 inches or greater in diameter at breast height.

Because construction of Off-site Water Facilities components could require the removal of trees, including oak species, the County of Sacramento may require a permit for the pruning or removal of protected trees within its jurisdiction. The City of Rancho Cordova also has an adopted City's Tree Preservation and Protection Ordinance that would be applicable to portions of the respective Off-site Water Facility Alternatives that cross the City of Rancho Cordova's jurisdiction. Therefore, this **direct** and **indirect** impact is considered **potentially significant.** ***[Greater]***

Mitigation Measure: Implement Mitigation Measure 3A.3-5.

With the implementation of Mitigation Measure 3A.3-5, appropriate compensation measures would be implemented through the preparation and implementation of an oak tree replacement plan to reduce potential impacts to riparian habitats and other sensitive natural communities. Compliance with the prescribed mitigation would ensure that these impacts are reduced to a **less-than-significant** level with no corresponding net reduction in the numbers of protected trees.

IMPACT 3B.3-6 Potential Interference with Wildlife or Fisheries Movement. *Construction and operation of the Off-site Water Facility Alternatives has the potential to interfere substantially with the movement of native resident or migratory fish or within established native resident or migratory wildlife corridors.*

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A

The Off-site Water Facilities would generally be constructed within existing road right-of-way and disturbed easements. Construction of the Off-site Water Facilities may have a temporary impact to the movements of some terrestrial wildlife during construction. However, construction of the Off-site Water Facilities conveyance facilities would not result in any permanent barriers to the movement of terrestrial species. During construction of the Off-site Water Facilities, direct impacts to local drainage ways within Zone 4 could occur. However, once constructed, these facilities would be submerged and would not adversely affect migratory corridors for wildlife. Operation of the Off-site Water Facilities is expected to result in **less-than-significant direct** and **indirect** impacts to existing wildlife corridors. ***[Similar]***

Except in flood conditions, there is no direct hydrologic connection between the streams within Zone 4 of the Off-site Water Facilities Study Area and the Sacramento River. Water from Morrison Creek is pumped into the Sacramento River by the City of Sacramento. Therefore, the pump is an impassable barrier to fish species in the Sacramento River. Similar barriers separate Buffalo and Alder Creeks from the American River. Therefore, construction-related direct impacts to fish species within Zone 4 are considered **less than significant**. Similarly, the operation of these facilities within Zone 4 is not expected to interfere substantially with the movement of any native resident or migratory fish and **no indirect** or **direct** impact is expected. ***[Similar]***

Operations of the Off-site Water Facilities would produce only minor levels of noise from pumps, and would not lead to on-going disturbance that would interfere with the movement of any native wildlife species or wildlife corridors and nursery sites. Assignment of water from NCMWC to the City would result in slight, permanent increases in river flows (see Chapter 3B.9.3) within a section of the Sacramento River, north of Freeport. In considering the combination of a change in delivery schedule, addition of a new point of diversion, and quantity of water diverted, the Off-site Water Facilities could realize benefits in terms of increased flows within the Sacramento River when compared to existing conditions, and therefore, could realize added minor benefits to fisheries. The direct and indirect impacts would be **less than significant**. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

IMPACT 3B.3-7 Potential Conflict with Habitat Conservation Plans. *Construction of the Off-site Water Facilities has the potential to conflict with the provisions of an adopted Habitat Conservation Plan or Natural Community Conservation Plan.*

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A

No Habitat Conservation Plan (HCP) or Natural Communities Conservation Plan (NCCP) has been adopted for the portions of the Off-site Water Facilities Study Area where physical improvements are proposed. Operational

changes within NCMWC's service area as a result of the Off-site Water Facilities would not result in substantial changes to existing irrigation patterns, which changes could otherwise result in adverse effects to giant garter snake within the Natomas Basin. Issues related to changes in hydrology and flow, as a result of the Off-site Water Facilities, are discussed in further in Section 3B.9, "Hydrology and Water Quality – Water." Based on these findings, the Off-site Water Facilities would not conflict with objectives and policies of the NBHCP.

Likewise, the SSHCP is not scheduled for completion and implementation until late 2010 or early 2011, and the exact scope and content of that SSHCP is not known at this time. Therefore, a consistency determination for the Off-site Water Facilities is not appropriate at this time. If the SSHCP is finalized and approved before commencement of mitigation developed for the Off-site Water Facilities, USACE and the City have the option of participating in the mitigation program that would be implemented in conjunction with the SSHCP.

Based on this discussion, the Off-site Water Facilities would not conflict with any adopted HCP or NCCP and **no direct** or **indirect impact** is expected. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

3B.3.4 RESIDUAL SIGNIFICANT IMPACTS

Implementation of the proposed Off-site Water Facility Alternatives could result in potentially impacts to biological resources including plant, wildlife, and fishery resources. Implementation of Mitigation Measures 3B.3-1a, 3B.3-1b, 3B.3-1c, and 3A.3-1b would minimize potential effects to waters of the U.S. and waters of the state, including wetlands, to less-than-significant levels by requiring that all disturbed waters be restored to pre-construction contours and permit conditions. These measures would also ensure that all ephemeral, intermittent or perennial streams are crossed using "trenchless" techniques. Additionally, the City will be required to submit, for review and approval, a mitigation and monitoring plan for the restoration of areas temporarily impacted by construction. Combined and fully implemented, compliance with these measures would ensure that performance standards and success criteria for restored or newly created habitats are satisfied thereby ensuring no net loss of habitat acreage, function, and value. Based on these considerations, no significant, residual impact to wetlands.

Although it is the City's preference to install new conveyance improvements within Zone 4 of the "Water" Study Area within existing roadway right-of-way, it is possible that one or more sections of the conveyance pipeline or associated structural facilities could be located outside the roadway. The extent of any impact to special status plant and wildlife species that does occur during construction to areas outside the roadway would be generally mitigated to less-than-significant levels according to the measures identified in this section 3B.3-1a, 3B.3-1b, 3A.3-1b, 3A.3-2a, 3A.3-2b, 3A.3-2c, 3A.3-2d, 3A.3-2e, 3A.3-2f, 3A.3-2g, 3A.3-2h, and 3A.3-3. However, since the City is unable to ensure that the actual placement of the conveyance alignment and structural facilities, there is no way of completely demonstrating avoidance of the numerous vernal pool features located the corridor under consideration for all the Off-site Water Facility Alternatives. Even if the vernal pool or seasonal wetland areas are restored following construction, there could still be direct impacts or take of vernal pool crustaceans during construction. This impact represents would be potentially significant and unavoidable, residual impact of the Off-site Water Facility Alternatives.

Implementation of Mitigation Measures 3A.3-4a and 3A.3-5 would minimize impacts to oak woodlands and sensitive riparian habitats to less-than-significant levels through restoration of the construction area and/or compensation of the impacted habitats. As a result, no residual significant impacts would remain.

3A.4 CLIMATE CHANGE – LAND

Emissions of greenhouse gases (GHGs) have the potential to adversely affect the environment because such emissions contribute, on a cumulative basis, to global climate change. The proper context for addressing this issue in an EIR/EIS is as a discussion of cumulative impacts, because although the emissions of one single project will not cause global climate change, GHG emissions from multiple projects throughout the world could result in a cumulative impact with respect to global climate change. In turn, global climate change has the potential to result in rising sea levels, which can inundate low-lying areas; to affect rainfall and snowfall, leading to changes in water supply; to affect habitat, leading to adverse effects on biological resources; and to result in other effects.

Therefore, the cumulative global climate change analysis presented in this section of the EIR/EIS includes two subsections: 3A.4.1 and 3A.4.2. In Subsection 3A.4.1, the projected GHG emissions generated by the No Project, No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives are analyzed with respect to their potential to contribute to global climate change. In Subsection 3A.4.2, the potential effects of global climate change are identified based on available scientific data, and their potential effects on the project are evaluated to the extent possible based on the quality of the data. Consequently, the format of this subsection is altered in comparison to other sections in Chapter 3.

3A.4.1 GREENHOUSE GAS EMISSIONS AND CONTRIBUTION TO GLOBAL CLIMATE CHANGE

INTRODUCTION

Cumulative impacts are the collective impacts of one or more past, present, and future projects that, when combined, result in adverse changes to the environment. In determining the significance of a proposed project's contribution to anticipated adverse future conditions, a lead agency should generally undertake a two-step analysis. The first question is whether the *combined* effects from *both* the proposed project *and* other projects would be cumulatively significant. If the agency answers this inquiry in the affirmative, the second question is whether "the proposed project's *incremental* effects are cumulatively considerable" and thus significant in and of themselves. The cumulative project list for this issue (climate change) comprises anthropogenic (i.e., human-made) GHG emissions sources across the globe, and no project alone would reasonably be expected to contribute to a noticeable incremental change to the global climate. However, legislation and executive orders on the subject of climate change in California have established a statewide context for and a process for developing an enforceable statewide cap on GHG emissions. Given the nature of environmental consequences from GHGs and global climate change, CEQA requires that lead agencies consider evaluating the cumulative impacts of GHGs, even relatively small (on a global basis) additions. Small contributions to this cumulative impact (from which significant effects are occurring and are expected to worsen over time) may be potentially considerable and therefore significant.

This section presents a discussion of existing climate conditions, the current state of climate change science, and GHG emissions sources in California; a summary of applicable regulations; and a description of project-generated GHG emissions and their contribution to global climate change.

AFFECTED ENVIRONMENT

Existing Climate

Climate is the accumulation of daily and seasonal weather events over a long period of time, whereas weather is defined as the condition of the atmosphere at any particular time and place (Ahrens 2003). The SPA is located in a climatic zone characterized as dry-summer subtropical or Mediterranean (abbreviated Cs) on the Köppen climate classification system. The Köppen system's classifications are primarily based on annual and monthly averages of temperature and precipitation.

The Sacramento Valley Air Basin (SVAB) is relatively flat, bordered by mountains to the east, west, and north. The climate is characterized by hot, dry summers and cool, rainy winters. Periods of dense and persistent low-level fog that are most prevalent between storms are characteristic of SVAB winter weather. The extreme summer aridity of the Mediterranean climate is caused by sinking air of subtropical high pressure regions. In the case of the SVAB, the ocean has less influence than in the coastal areas, giving the interior Mediterranean climate (abbreviated CSA on the Köppen climate system) more seasonal temperature variation (Ahrens 2003).

Most precipitation in the area results from air masses that move in from the Pacific Ocean during the winter months. These storms usually move from the west or northwest. More than half the total annual precipitation falls during the winter rainy season (November–February); the average winter temperature is a moderate 49 degrees °F. During the summer, daily temperatures range from 50°F to more than 100°F. The inland location and surrounding mountains shelter the area from much of the ocean breezes that keep the coastal regions moderate in temperature.

The local meteorology of the SPA and vicinity is represented by measurements recorded at the Folsom Dam station. The normal annual precipitation, which occurs primarily from November through March, is approximately 24 inches (Western Regional Climate Center 2009). January temperatures range from an average minimum of 37.9°F to an average maximum of 53.7°F. July temperatures range from an average minimum of 60.3°F to an average maximum of 94.5°F (Western Regional Climate Center 2009). The predominant wind direction and speed is from the south-southwest at approximately 10 miles per hour (mph) (California Air Resources Board [ARB] 1994).

Attributing Climate Change—The Physical Scientific Basis

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface, and a smaller portion of this radiation is reflected back toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. The earth has a much lower temperature than the sun; therefore, the earth emits lower frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on Earth. Without the greenhouse effect, Earth would not be able to support life as we know it.

Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Human-caused emissions of these GHGs in excess of natural ambient concentrations are responsible for intensifying the greenhouse effect and have led to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is *extremely unlikely* that global climate change of the past 50 years can be explained without the contribution from human activities (Intergovernmental Panel on Climate Change [IPCC] 2007).

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants , which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about 1 day), GHGs have long atmospheric lifetimes (1 year to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule is dependent on multiple variables and cannot be pinpointed, it is understood that more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration. Of the total annual human-caused CO_2 emissions, approximately 54% is sequestered through ocean uptake, uptake by northern hemisphere forest regrowth, and other terrestrial sinks within a year, whereas the remaining 46% of human-caused CO_2 emissions remains stored in the atmosphere (Seinfeld and Pandis 1998).

Similarly, impacts of GHGs are borne globally, as opposed to localized air quality effects of criteria air pollutants and toxic air contaminants. The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; suffice it to say, the quantity is enormous, and no single project alone would measurably contribute to a noticeable incremental change in the global average temperature, or to global, local, or micro climate. From the standpoint of CEQA, GHG impacts to global climate change are inherently cumulative.

Attributing Climate Change—Greenhouse Gas Emission Sources

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the transportation, industrial/manufacturing, utility, residential, commercial and agricultural emissions sectors (ARB 2009a). In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation (ARB 2009a). Emissions of CO_2 are byproducts of fossil fuel combustion. CH_4, a highly potent GHG, results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) is largely associated with agricultural practices and landfills. N_2O is also largely attributable to agricultural practices and soil management. CO_2 sinks, or reservoirs, include vegetation and the ocean, which absorb CO_2 through sequestration and dissolution, respectively, two of the most common processes of CO_2 sequestration.

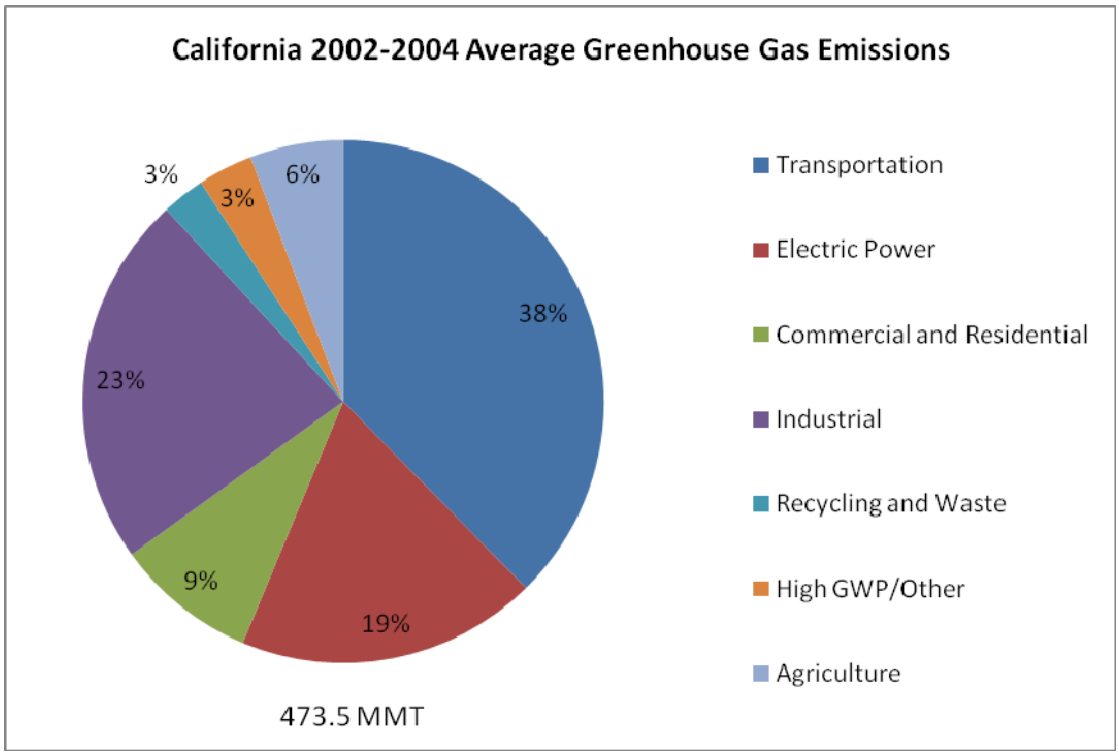
State Greenhouse Gas Emissions Inventory

According to different ranking systems, California is the 12th to 16th largest emitter of CO_2 in the world (California Energy Commission [CEC] 2006). California produced 484 million gross metric tons of CO_2 equivalent (CO_2e) in 2004 (ARB 2009a). CO_2e is a measurement used to account for the fact that different GHGs have different potential to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. This potential, known as the global warming potential (GWP) of a GHG, is dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. For example, as described in Appendix C, "Calculation References," of the General Reporting Protocol of the California Climate Action Registry (CCAR) (CCAR 2009), 1 ton of CH_4 has the same contribution to the greenhouse effect as approximately 21 tons of CO_2. Therefore, CH_4 is a much more potent GHG than CO_2. Expressing emissions in CO_2e takes the contributions of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2004, accounting for 38% of total GHG emissions in the state (ARB 2009a). This sector was followed by the electric power sector (including both in-state and out-of-state sources) (19%) and the industrial sector (23%) (ARB 2008). See Exhibit 3A.4-1 below.

Local Inventory

A GHG emissions inventory was conducted for each incorporated city in Sacramento County, including the City of Folsom (City), and the unincorporated area of Sacramento County (County) for the year 2005. The City of Folsom estimated that communitywide GHG Emissions totaled approximately 609,009 metric tons of CO_2e in 2005. The City of Folsom contributed approximately 4.4% of the GHG emissions generated in Sacramento County. On-road transportation emissions composed 41.1% of Folsom's GHG emissions, followed by 24.0% from commercial/industrial land uses, and 21.6% from residential uses (Sacramento County 2009).



Source: ARB 2008

California's Greenhouse Gas Emissions by Economic Sector (2002-2004 Average) Exhibit 3A.4-1

REGULATORY FRAMEWORK

Numerous Federal, state, regional, and local laws, rules, regulations, plans, and policies define the framework that regulates and will potentially regulate climate change. The following discussion focuses on climate change requirements applicable to the project.

Federal Plans, Policies, Regulations, and Laws

Supreme Court Ruling

The U.S. Environmental Protection Agency (EPA) is the Federal agency responsible for implementing the Federal Clean Air Act (CAA). The Supreme Court of the United States ruled on April 2, 2007 that CO_2 is an air pollutant as defined under the CAA, and that EPA has the authority to regulate emissions of GHGs. However, there are no Federal regulations or policies regarding GHG emissions applicable to the Proposed Project, or alternatives under consideration.

EPA Proposed Regulations

In response to the mounting issue of climate change, EPA has taken actions to regulate, monitor, and potentially reduce GHG emissions. Although both actions discussed below are still in the proposal stage, they would have implications on the regulation, monitoring, and reduction of GHG emissions from stationary and mobile sources.

Proposed Mandatory Greenhouse Gas Reporting Rule

On April 10, 2009, EPA published its Proposed Mandatory Greenhouse Gas Reporting Rule (proposed reporting rule) in the Federal Register. The proposed reporting rule is a response to the fiscal year (FY) 2008 Consolidate Appropriations Act (House Resolution 2764; Public Law 110-161), which required EPA to develop "… mandatory reporting of greenhouse gases above appropriate thresholds in all sectors of the economy…" The proposed reporting rule would apply to fossil fuel and industrial GHG suppliers, vehicle and engine manufacturers, and all facilities that would emit 25,000 metric tons of CO_2e or more per year. Facility owners would be required to submit an annual GHG emissions report with detailed calculations of facility GHG emissions. The proposed reporting rule would also mandate record keeping and administrative requirements for EPA to verify annual GHG emissions reports. Owners of existing facilities that commenced operation prior to January 1, 2010 would be required to submit an annual report for calendar year 2010. Owners of new facilities commencing operation after January 1, 2010 would be required to submit an annual report from the facility's commencement date to December 31, 2010. For all subsequent operating years, facility owners would be required to report GHG emissions for the whole calendar year (January 1 to December 31). The comment period on the proposed reporting rule ended on June 6, 2009.

Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases under the Federal Clean Air Act

On April 23, 2009, EPA published their Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases under the CCA (Endangerment Finding) in the Federal Register. The Endangerment Finding is based on Section 202(a) of the CAA, which states that the Administrator (of EPA) should regulate and develop standards for "emission[s] of air pollution from any class or classes of new motor vehicles or new motor vehicle engines, which in [its] judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare." The proposed rule addresses Section 202(a) in two distinct findings. The first addresses whether or not the concentrations of the six key GHGs (i.e., CO_2, CH_4, N_2O, HFCs, perflurorocarbons [PFCs], and SF_6) in the atmosphere threaten the public health and welfare of current and future generations. The second addresses whether or not the combined emissions of GHGs from new motor vehicles and motor vehicle engines contribute to atmospheric concentrations of GHGs and therefore the threat of climate change.

The Administrator proposed the finding that atmospheric concentrations of GHGs endanger the public health and welfare within the meaning of Section 202(a) of the CCA. The evidence supporting this finding consists of human activity resulting in "high atmospheric levels" of GHG emissions, which are very likely responsible for increases in average temperatures and other climatic changes. Furthermore, the observed and projected results of climate change (e.g., higher likelihood of heat waves, wildfires, droughts, sea level rise, higher intensity storms) are a threat to the public health and welfare. Therefore, GHGs were found to endanger the public health and welfare of current and future generations.

The Administrator also proposed the finding that GHG emissions from new motor vehicles and motor vehicle engines are contributing to air pollution, which is endangering public health and welfare. The proposed finding cites that in 2006, motor vehicles were the second largest contributor to domestic GHG emissions (24% of total) behind electricity generation. Furthermore, in 2005, the United States was responsible for 18% of global GHG emissions. Therefore, GHG emissions from motor vehicles and motor vehicle engines were found to contribute to air pollution that endangers public health and welfare.

State Plans, Policies, Regulations, and Laws

ARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA), which was adopted in 1988.

Various statewide and local initiatives to reduce the state's contribution to GHG emissions have raised awareness that, even though the various contributors to and consequences of global climate change are not yet fully

understood, global climate change is under way, and there is a real potential for severe adverse environmental, social, and economic effects in the long term. Because every nation emits GHGs and therefore makes an incremental cumulative contribution to global climate change, cooperation on a global scale will be required to reduce the rate of GHG emissions to a level that can help to slow or stop the human-caused increase in average global temperatures and associated changes in climatic conditions.

Assembly Bill 1493

In 2002, then-Governor Gray Davis signed Assembly Bill (AB) 1493. AB 1493 requires that ARB develop and adopt, by January 1, 2005, regulations that achieve "the maximum feasible reduction of greenhouse gases emitted by passenger vehicles and light-duty trucks and other vehicles determined by ARB to be vehicles whose primary use is noncommercial personal transportation in the state."

To meet the requirements of AB 1493, in 2004 ARB approved amendments to the California Code of Regulations (CCR) adding GHG emissions standards to California's existing standards for motor vehicle emissions. Amendments to CCR Title 13, Sections 1900 and 1961 (13 CCR 1900, 1961), and adoption of Section 1961.1 (13 CCR 1961.1) require automobile manufacturers to meet fleet-average GHG emissions limits for all passenger cars, light-duty trucks within various weight criteria, and medium-duty passenger vehicle weight classes (i.e., any medium-duty vehicle with a gross vehicle weight rating less than 10,000 pounds that is designed primarily for the transportation of persons), beginning with the 2009 model year. For passenger cars and light-duty trucks with a loaded vehicle weight (LVW) of 3,750 pounds or less, the GHG emission limits for the 2016 model year are approximately 37% lower than the limits for the first year of the regulations, the 2009 model year. For light-duty trucks with LVW of 3,751 pounds to gross vehicle weight (GVW) of 8,500 pounds, as well as medium-duty passenger vehicles, GHG emissions would be reduced approximately 24% between 2009 and 2016.

In December 2004, a group of car dealerships, automobile manufacturers, and trade groups representing automobile manufacturers filed suit against ARB to prevent enforcement of 13 CCR Sections 1900 and 1961 as amended by AB 1493 and 13 CCR 1961.1 (*Central Valley Chrysler-Jeep et al. v. Catherine E. Witherspoon, in Her Official Capacity as Executive Director of the California Air Resources Board, et al.*). The automobile-makers' suit in the United States District Court for the Eastern District of California, contended California's implementation of regulations that, in effect, regulate vehicle fuel economy violates various Federal laws, regulations, and policies.

On December 12, 2007, the Court found that if California receives appropriate authorization from EPA (the last remaining factor in enforcing the standard), then these regulations would be consistent with and have the force of Federal law, thus, rejecting the automobile-makers' claim. This authorization to implement more stringent standards in California was requested in the form of a CAA Section 209(b), waiver in 2005. Since that time, EPA failed to act on granting California authorization to implement the standards. Governor Schwarzenegger and Attorney General Edmund G. Brown filed suit against EPA for the delay. In December 2007, EPA Administrator Stephen Johnson denied California's request for the waiver to implement AB 1493. Johnson cited the need for a national approach to reducing GHG emissions, the lack of a "need to meet compelling and extraordinary conditions", and the emissions reductions that would be achieved through the Energy Independence and Security Act of 2007 as the reasoning for the denial (Office of the White House 2009).

The State of California filed suit against EPA for its decision to deny the CAA waiver. The recent change in presidential administration directed EPA to reexamine its position for denial of California's CAA waiver and for its past opposition to GHG emissions regulation. California received the waiver on June 30, 2009.

Executive Order S-3-05

Executive Order S-3-05, which was signed by Governor Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea level.

To combat those concerns, the Executive Order established total GHG emission targets. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80% below the 1990 level by 2050.

The Executive Order directed the Secretary of the California Environmental Protection Agency (CalEPA) to coordinate a multiagency effort to reduce GHG emissions to the target levels. The Secretary will also submit biannual reports to the Governor and State Legislature describing: progress made toward reaching the emission targets; impacts of global warming on California's resources; and mitigation and adaptation plans to combat these impacts. To comply with the Executive Order, the Secretary of the CalEPA created the California Climate Action Team (CCAT) made up of members from various state agencies and commission. CCAT released its first report in March 2006. The report proposed to achieve the targets by building on voluntary actions of California businesses, local government and community actions, as well as through state incentive and regulatory programs.

Assembly Bill 32, the California Global Warming Solutions Act of 2006

In September 2006, Governor Arnold Schwarzenegger signed AB 32, the California Global Warming Solutions Act of 2006. AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction will be accomplished through an enforceable statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs ARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then ARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires that ARB adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrives at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the state achieves the reductions in GHG emissions necessary to meet the cap. AB 32 also includes guidance to institute emissions reductions in an economically efficient manner and conditions to ensure that businesses and consumers are not unfairly affected by the reductions.

Assembly Bill 32, Climate Change Scoping Plan

On December 11, 2008 ARB adopted its *Climate Change Scoping Plan* (Scoping Plan), which functions as a roadmap of ARB's plans to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations (ARB 2008). The Scoping Plan contains the main strategies California will implement to reduce CO_2e emissions by 169 MMT, or approximately 30%, from the state's projected 2020 emissions level of 596 MMT of CO_2e under a business-as-usual scenario. (This is a reduction of 42 MMT CO_2e, or almost 10%, from 2002–2004 average emissions, but requires the reductions in the face of population and economic growth through 2020.) The Scoping Plan also breaks down the amount of GHG emissions reductions ARB recommends for each emissions sector of the state's GHG inventory. The Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO_2e),
- the Low-Carbon Fuel Standard (15.0 MMT CO_2e),
- energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT CO_2e), and
- a renewable portfolio standard for electricity production (21.3 MMT CO_2e).

ARB has not yet determined what amount of GHG emissions reductions it recommends from local government land use decisions; however, the Scoping Plan does state that successful implementation of the plan relies on local

governments' land use planning and urban growth decisions because local governments have primary authority to plan, zone, approve, and permit land development to accommodate population growth and the changing needs of their jurisdictions. ARB further acknowledges that decisions on how land is used will have large effects on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors. The Scoping Plan states that the ultimate assignment to local government operations is to be determined (ARB 2008).

With regard to local land use planning, the Scoping Plan expects a reduction of approximately 5.0 MMT CO_2e from local land use changes associated with implementation of SB 375, discussed above. Also noteworthy is the fact that the Scoping Plan does not include any direct discussion about GHG emissions generated by construction activity.

Executive Order S-1-07

Executive Order S-1-07, which was signed by Governor Schwarzenegger in 2007, proclaims that the transportation sector is the main source of GHG emissions in California, at over 40% of statewide emissions. It establishes a goal that the carbon intensity of transportation fuels sold in California should be reduced by a minimum of 10% by 2020. This order also directed ARB to determine if this Low Carbon Fuel Standard could be adopted as a discrete early action measure after meeting the mandates in AB 32. ARB adopted the Low Carbon Fuel Standard on April 23, 2009.

Senate Bill 1368

SB 1368 is the companion bill of AB 32 and was signed by Governor Schwarzenegger in September 2006. SB 1368 requires the California Public Utilities Commission (CPUC) to establish a GHG performance standard for baseload generation from investor-owned utilities by February 1, 2007. The CEC must establish a similar standard for local publicly owned utilities by June 30, 2007. These standards cannot exceed the GHG emission rate from a baseload combined-cycle natural gas fired plant. The legislation further requires that all electricity provided to California, including imported electricity, must be generated from plants that meet the standards set by the CPUC and CEC.

Senate Bills 1078 and 107 and Executive Order S-14-08

SB 1078 (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20% of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010. In November 2008, Governor Schwarzenegger signed Executive Order S-14-08, which expands the state's Renewable Energy Standard to 33% renewable power by 2020. Governor Schwarzenegger plans to propose legislative language that will codify the new higher standard (California Office of the Governor 2008).

Senate Bill 97

SB 97, signed August 2007, acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. This bill directs the California Office of Planning and Research (OPR) to prepare, develop, and transmit to the California Natural Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA by July 1, 2009. The California Natural Resources Agency adopted those guidelines on December 30, 2009, and the guidelines became effective March 18, 2010.

This bill also removes inadequate CEQA analysis of effects of GHG emissions from projects (retroactive and future) funded by the Highway Safety, Traffic Reduction, Air Quality and Port Security Bond Act of 2006, or the Disaster Preparedness and Flood Protection Bond Act of 2006 (Proposition 1B or 1E) as a legitimate cause of action. This provision will be repealed on January 1, 2010, wherein inadequate CEQA analysis for those projects

could then become a legitimate cause of action. This bill would only protect a handful of public agencies from CEQA challenges on certain types of projects for a few years.

Senate Bill 375

SB 375, signed in September 2008, aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy (APS), which will prescribe land use allocation in that MPO's Regional Transportation Plan (RTP). ARB, in consultation with MPOs, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every 8 years, but can be updated every 4 years if advancements in emissions technologies affect the reduction strategies to achieve the targets. ARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. If MPOs do not meet the GHG emission reduction targets, transportation projects would not be eligible for funding programmed after January 1, 2012.

This bill also extends the minimum time period for the Regional Housing Needs Allocation (RNHA) cycle from 5 years to 8 years for local governments located within an MPO that meets certain requirements. City or County land use policies (including general plans) are not required to be consistent with the RTP (and associated SCS or APS). However, new provisions of CEQA would incentivize qualified projects that are consistent with an approved SCS or APS, categorized as "transit priority projects."

Regional and Local Plans, Policies, Regulations, and Laws

Sacramento County

Sacramento County's Board of Supervisors has approved the first phase of a climate action plan that will provide a framework for reducing GHG emissions. The first phase focuses on the County's overall strategy and goals for addressing climate change (Sacramento County 2009). Key goals in the first phase include a reduction in vehicle miles traveled (VMT) per capita in the region; improving energy efficiency of all existing and new buildings; emphasizing water use efficiency as a way to reduce energy consumption; maximizing waste diversion, composting, and recycling through residential and commercial programs; and protecting important farmlands and open space from conversion and encroachment and maintaining connectivity of protected areas.

El Dorado County

El Dorado County has not developed a climate action plan or similar GHG emissions reduction plan for GHG emission-generating activity in its jurisdiction, nor has El Dorado County began efforts to develop such a plan at the time of writing this EIR/EIS.

City of Folsom

The City of Folsom has not developed a climate action plan or similar GHG emissions reduction plan for GHG emission-generating activity in its jurisdiction. The City of Folsom General Plan does not contain any goals or policies that relate directly to climate change or GHGs City of Folsom 1988). The City is in the early stages of updating its General Plan, which will include multiple policies that directly address climate change and GHG emissions.

ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

Thresholds of Significance

ARB, the Sacramento Metropolitan Air Quality Management District (SMAQMD), and El Dorado County Air Quality Management District (EDCAQMD) have not identified a significance threshold for analyzing GHG emissions associated with a land use development projects. SMAQMD has updated its CEQA guidance, and it released its *Guide to Air Quality Assessment in Sacramento County* in December 2009 (SMAQMD 2009a). However, SMAQMD does not include any particular GHG significance threshold in its guide. Instead, it suggests that lead agencies identify thresholds of significance applicable to a proposed project that is supported by substantial evidence (SMAQMD 2009a, page 6-5). Nevertheless, the primary focus of SMAQMD's guidance for addressing GHG emissions is "to provide guidance about evaluating whether the GHG emissions associated with a proposed project would be a cumulatively considerable contribution to global climate change" (SMAQMD 2009a, page 6-3).

The City and USACE acknowledge that, by adoption of AB 32 and SB 97, the State of California has identified GHG emission reduction goals and that the effect of GHG emissions as they relate to global climate change is inherently an adverse environmental impact. While the emissions of one single project will not cause global climate change, GHG emissions from multiple projects throughout the world could result in a cumulative impact with respect to global climate change.

To meet AB 32 goals, California would need to generate less GHG emissions than current levels. It is recognized, however, that for most projects there is no simple metric available to determine if a single project would substantially increase or decrease overall GHG emission levels.

Although the text of AB 32 applies to stationary sources of GHG emissions, this mandate demonstrates California's commitment to reducing the rate of GHG emissions and the state's associated contribution to climate change, without intent to limit population or economic growth within the state. Thus, to achieve the goals of AB 32, which are tied to GHG emission rates of a specific benchmark year (i.e., 1990), California would have to achieve a lower rate of emissions per unit of population than its current rate. Further, to accommodate *future* population and economic growth, the state would have to achieve an even lower rate of emissions per unit than was achieved in 1990. (The goal to achieve 1990 quantities of GHG emissions by 2020 means that this will need to be accomplished in the face of 30 years of population and economic growth beyond 1990.) Thus, future planning efforts that would not encourage reductions in GHG emissions or not enable land uses to operate in a GHG-efficient manner would conflict with the policy decisions contained in the spirit of AB 32, thus impeding California's ability to comply with the mandate.

Thus, if a statewide context for addressing GHG emissions is applied, any net increase in GHG emissions within state boundaries would be considered "new" emissions. For example, a land development project, such as the Folsom South of 50 Project, does not create "new" emitters of GHGs, but would theoretically accommodate a greater number of residents in the state. Some of the residents that move to the project could already be residents in California, while others may be from out-of-state (or would "take the place" of in-state residents who "vacate" their current residences to move to the new project). The out-of-state residents would be contributing new emissions in a statewide context, but would not necessarily be generating new emissions in a global context. Given the statewide context established by AB 32, the project would need to accommodate an increase in population in a manner that would not inhibit the state's ability to achieve the goals of lower emissions overall.

However, the State of California has established GHG emission reduction targets and has determined that GHG emissions as they relate to global climate change are a source of adverse environmental impacts in California that should be addressed under CEQA. Although AB 32 did not amend CEQA, it identifies the myriad of environmental problems in California caused by global warming (California Health and Safety Code, Section 38501[a]). SB 97, however, did amend CEQA by directing OPR to prepare revisions to the State CEQA

Guidelines addressing the mitigation of GHGs or their consequences. As an interim step toward development of required guidelines, in June 2008, OPR published a technical advisory, entitled *CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review* (OPR 2008). In this technical advisory, OPR recommends that the lead agencies under CEQA make a good-faith effort, based on available information, to estimate the quantity of GHG emissions that would be generated by a proposed project, including the emissions associated with vehicular traffic, energy consumption, water usage, and construction activities, to determine whether the impacts have the potential to result in a project or cumulative impact and to mitigate the impacts where feasible mitigation is available.

OPR's technical advisory also acknowledges that "perhaps the most difficult part of the climate change analysis will be the determination of significance," and noted that "OPR has asked ARB technical staff to recommend a method for setting thresholds which will encourage consistency and uniformity in the CEQA analysis of GHG emissions throughout the state." ARB has not yet completed this task at the time of writing this EIR/EIS.

OPR has provided proposed amendments to the State CEQA Guidelines, including Appendix G, to address impacts of GHG emissions, as directed by SB 97 (2007). These proposed amendments were approved by the California Natural Resources Agency (CRNA) on December 30, 2009 and the adopted amendments will not become effective until after the Office of Administrative Law completes its review of the adopted amendments and rulemaking file, and transmits the adopted amendments to the Secretary of State for inclusion in the California Code of Regulations (CNRA 2010). The thresholds for determining the significance of the impact of projected GHG emissions generated by the project for this analysis are based on OPR's proposed additions to Appendix G of the State CEQA Guidelines. These thresholds also encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. An impact related to global climate change (i.e., the projected GHG emissions generated by the project) is considered significant if the Proposed Project or alternatives under consideration would do any of the following (OPR's proposed additions to Appendix G):

- generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or,

- conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

SMAQMD also recommends that the above two criteria be addressed in the GHG analysis of an EIR (SMAQMD 2009a, page 6-6).

For the purposes of this EIR/EIS, the City and USACE have decided to quantify total GHG emissions from the Proposed Project and alternatives under consideration, and determine whether the associated emissions would substantially help or hinder the state's ability to attain the goals identified in AB 32 (i.e., reduction of statewide GHG emissions to 1990 levels by 2020). The analysis of GHG emissions in this EIR/EIS recognizes that the impact that GHG emissions have on global climate change does not depend on whether they are generated by stationary, mobile, or area sources, or whether they are generated in one region or another. As stated above, the mandate of AB 32 demonstrates California's commitment to reducing GHG emissions and the state's associated contribution to climate change, without intending to limit population or economic growth within the state. Thus, to achieve the goals of AB 32, which are tied to mass GHG emission levels of a specific benchmark year (i.e., 1990), California would have to achieve a lower rate of emissions per unit of population (per person) and/or per level of economic activity (e.g., per job) than its current rate. Furthermore, to accommodate future population and economic growth, the state would have to achieve an even lower rate of emissions per unit than it achieved in 1990. (The goal—to achieve 1990 quantities of GHG emissions by 2020—will need to be accomplished despite 30 years of population and economic growth beyond 1990.) For this reason, land uses need to be GHG "efficient" to attain AB 32 goals while accommodating population and job growth. Thus, the program-level analysis of GHGs for this EIR/EIS focuses on the annual operational GHG emissions per service population (SP), or annual

GHG/SP, where SP is the number of residents accommodated by each alternative plus the number of jobs supported by each alternative. The benchmark for this metric is estimated to be approximately 4.36 metric tons CO_2e/SP/year for the year 2020 and 3.68 metric tons CO_2e/SP/year for the year 2030. These benchmarks were developed and estimated based on future expected growth in the state's population and economy and the mass emissions reduction target mandated by AB 32 for the year 2020 and an interpolated mass emissions reduction target mandated target for the year 2030 that is based on Executive Order S-3-05; assumptions were also made about which emissions sectors of the statewide GHG emissions inventory are affected by land use planning and development design decisions. For instance, GHG emissions produced by the forestry sector are not accounted for in this metric because the Proposed Project and alternatives under consideration would not result in the removal or addition of forests or state forestland. These and other detailed projections and calculations used to estimate this benchmark are presented in Appendix C1.

Additionally, the application of an efficiency-based metric in this analysis is consistent with the discussion in ARB's Scoping Plan of the importance of GHG efficiency in land use planning that must be achieved to attain the mandated reductions in mass annual GHG emission levels (ARB 2008, page ES-12). However, although the Scoping Plan discusses efficiency in terms of (imperial) tons per person, it does not explicitly discuss ways to account for projected growth in the state's population or projected growth in the state's economy. Moreover, the metric of mass GHG emissions per capita would not be useful for understanding the efficiency of nonresidential land uses (e.g., commercial, industrial, educational).

Because the CO_2e/SP/year metric accounts for future population growth, future economic growth, and mass emission targets, future land use development projects that would not be more GHG efficient than "business as usual" would conflict with the spirit of AB 32 policy.

Nonetheless, one of the primary challenges to establishing a reasonable threshold and determining impacts (and mitigation) relates to enactment of AB 32 and other GHG emission-reduction legislations. As previously described, much of this legislation requires ARB and others to establish standards that relate to energy efficiency, carbon levels in fuels, smokestack emissions, and regional transportation planning (i.e., SB 375). These standards are in the development process but may be a few to several years away from implementation. The project, however, would also be in development for multiple decades (±20 years), and during its lifetime would be subject to these as-yet undeveloped thresholds. There is a lag time between enactment of these legislative fixes and the regulations that will implement them. As a consequence, local governmental agencies are left to struggle with trying to discern the extent to which their decisions can and will influence GHG emissions, versus what still-to-be-developed regulations will achieve. For instance, a local lead agency can base a threshold on generation of emissions below some business-as-usual target, but it is difficult to ascertain whether these regulations will largely result in substantial reductions that hit the target, or whether local agencies will need to impose additional measures. This challenge is discussed in more detail in the "Impact Analysis" section below.

Analysis Methodology

At the time of writing this EIR/EIS, neither ARB nor any air district in California (including SMAQMD and EDCAQMD) has formally adopted a recommended methodology for evaluating GHG emissions associated with new development. Though SMAQMD has not developed a threshold of significance for determining whether project-related GHG emissions are considered to be significant, its *Guide to Air Quality Assessment in Sacramento County* does recommend that lead agencies estimate GHG emissions associated with temporary and short-term, project-related construction activities, as well as the long-term, operational emissions associated with a project, including mobile- and area-source GHG emissions and direct, off-site emissions associated with the project's consumption of electricity and water (SMAQMD 2009a, page 6-6).

In the case of the Folsom South of 50 Project, CO_2 emissions associated with project construction and operation were modeled using URBEMIS 2007 version 9.2.4 (Rimpo and Associates 2008); a model widely-used in

regional air quality analysis. Indirect emissions associated with energy consumption were estimated using methodology recommended in the current CCAR General Reporting Protocol version 3.1 (CCAR 2009).

It is important to note that all CO_2 emissions from project operation may not necessarily be considered "new" emissions, given that a project itself does not create "new" emitters (people) of GHGs, at least not in the traditional sense. In other words, the GHG emissions for a residential project are not necessarily all new GHG emissions in the local area, state, or world; to a large degree, a new residential development, accommodates household relocations. In this sense, residential development projects can be seen as reacting to increased demand from the growing population and economy, and are not in themselves creators of economic or population growth. Emissions of GHGs are, however, influenced by the location and design of projects, to the extent that they can influence travel to and from the projects, and to the degree the projects are designed to maximize energy efficiency and GHG efficiency.

The methodology used in this EIR/EIS to analyze the project's contribution to global climate change includes a calculation of GHG emissions and a discussion about the context in which they can be evaluated. The lead agencies' purpose of calculating the project's GHG emissions is for informational and comparison purposes, as neither SMAQMD or EDCAQMD have not adopted a quantifiable threshold for evaluating whether project-generated GHG's would be considered a significant impact.

IMPACT ANALYSIS

Impacts that would occur under each alternative development scenario are identified as follows: NP (No Project/Action), NCP (No USACE Permit), PP (Proposed Project/Action), RIM (Resource Impact Minimization), CD (Centralized Development), RHD (Reduced Hillside Development). The impacts for each alternative are compared relative to the Proposed Project Alternative at the end of each impact conclusion (i.e., similar, greater, lesser).

IMPACT 3A.4-1 Generation of Temporary, Short-Term Construction-Related GHG Emissions. *Project-related construction activities associated with development of the project and off-site elements would result in increased generation of GHG emissions. These emissions would be temporary and short-term and would decline over time as new regulations are developed that address medium- and heavy-duty on-road vehicles and off-road equipment under the mandate of AB 32.*

On-Site and Off-Site Elements

NP

Under the No Project alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80. If developed, construction of these residences would not be anticipated to require a high number of diesel-powered construction equipment or involve intense levels of earth movement for an extended period of time. Thus, these activities would not conflict with the policy decisions contained in AB 32, and thereby would not impede California's ability to comply with the mandate of AB 32. No off-site water facilities would be constructed in this alternative. As a result, GHG emissions associated with project-related construction under the No Project Alternative would not result in a cumulatively considerable incremental contribution to climate change. This would be a **less-than-significant** impact. ***[Lesser]***

Mitigation Measure: No mitigation measures are required.

On-Site Elements

NCP

The types of emissions-generating construction activities that would occur under the No USACE Permit Alternative would be similar to those that would take place under the Proposed Project Alternative. Construction-generated GHG emissions associated with buildout of the No USACE Permit Alternative were modeled in URBEMIS and are presented in Table 3A.4-1. Refer to Appendix C1 for a detailed summary of the URBEMIS modeling assumptions, inputs, and outputs.

As shown in Table 3A.4-1, estimated GHG emissions from construction during the 19-year buildout of the No USACE Permit Alternative would be approximately 42,664 metric tons of CO_2, which is less than estimated for the Proposed Project Alternative. Similar to the Proposed Project Alternative, GHG emissions generated by construction under the No USACE Permit Alternative would be temporary and short term. Although a new regime of regulations is expected to come into place under AB 32 and existing regulatory efforts will help reduce GHG emissions generated by construction activity throughout the state, given the information available today, GHG emissions associated with construction of the No USACE Permit Alternative would result in a cumulatively considerable incremental contribution to this **significant** cumulative impact. ***[Lesser]***

Mitigation Measure 3A.4-1: Implement Additional Measures to Control Construction-Generated GHG Emissions.

To further reduce construction-generated GHG emissions, the project applicant(s) of all project phases shall implement all feasible measures for reducing GHG emissions associated with construction that are recommended by SMAQMD at the time individual portions of the site undergo construction. Such measures may reduce GHG exhaust emissions from the use of on-site equipment, worker commute trips, and truck trips carrying materials and equipment to and from the SPA, as well as GHG emissions embodied in the materials selected for construction (e.g., concrete). Other measures may pertain to the materials used in construction. Prior to releasing each request for bid to contractors for the construction of each development phase, the project applicant(s) shall obtain the most current list of GHG reduction measures that are recommended by SMAQMD and stipulate that these measures be implemented in the respective request for bid as well as the subsequent construction contract with the selected primary contractor. The project applicant(s) for any particular development phase may submit to SMAQMD a report that substantiates why specific measures are considered infeasible for construction of that particular development phase and/or at that point in time. The report, including the substantiation for not implementing particular GHG reduction measures, shall be approved by SMAQMD prior to the release of a request for bid by the project applicant(s) for seeking a primary contractor to manage the construction of each development phase. By requiring that the list of feasible measures be established prior to the selection of a primary contractor, this measure requires that the ability of a contractor to effectively implement the selected GHG reduction measures be inherent to the selection process.

SMAQMD's recommended measures for reducing construction-related GHG emissions at the time of writing this EIR/EIS are listed below and the project applicant(s) shall, at a minimum, be required to implement the following:

- Improve fuel efficiency from construction equipment:
    - reduce unnecessary idling (modify work practices, install auxiliary power for driver comfort);
    - perform equipment maintenance (inspections, detect failures early, corrections);
    - train equipment operators in proper use of equipment;
    - use the proper size of equipment for the job; and
    - use equipment with new technologies (repowered engines, electric drive trains).

- Use alternative fuels for electricity generators and welders at construction sites such as propane or solar, or use electrical power.

- Use an ARB-approved low-carbon fuel, such as biodiesel or renewable diesel for construction equipment. (Emissions of oxides of nitrogen [NO_X] emissions from the use of low carbon fuel must be reviewed and increases mitigated.) Additional information about low-carbon fuels is available from ARB's Low Carbon Fuel Standard Program (ARB 2009b).

- Encourage and provide carpools, shuttle vans, transit passes and/or secure bicycle parking for construction worker commutes.

- Reduce electricity use in the construction office by using compact fluorescent bulbs, powering off computers every day, and replacing heating and cooling units with more efficient ones.

- Recycle or salvage non-hazardous construction and demolition debris (goal of at least 75% by weight).

- Use locally sourced or recycled materials for construction materials (goal of at least 20% based on costs for building materials, and based on volume for roadway, parking lot, sidewalk and curb materials).

- Minimize the amount of concrete used for paved surfaces or use a low carbon concrete option.

- Produce concrete on-site if determined to be less emissive than transporting ready mix.

- Use EPA-certified SmartWay trucks for deliveries and equipment transport. Additional information about the SmartWay Transport Partnership Program is available from ARB's Heavy-Duty Vehicle Greenhouse Gas Measure (ARB 2009c) and EPA (EPA 2009).

- Develop a SMAQMD-approved plan to efficiently use water for adequate dust control. This may consist of the use of non-potable water from a local source.

In addition to SMAQMD-recommended measures, construction activity shall comply with all applicable rules and regulations established by SMAQMD and ARB.

Implementation: Project applicant(s) during all project phases and on-site and off-site elements.

Timing: Before approval of final maps and building permits for all project phases, including all on- and off-site elements and implementation throughout project construction.

Enforcement:

1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.

2. For all on- and off-site project-related activities within the City of Folsom and Sacramento County.

3. For the two roadway extensions into El Dorado Hills: El Dorado County Development Services Department.

Mitigation Measure: Implement Mitigation Measures 3A.2-1a and 3A.2-1b.

PP

Heavy-duty off-road equipment, materials transport, and worker commutes during construction of the Proposed Project Alternative would result in exhaust emissions of GHGs. Exact project-specific data (e.g., construction equipment types and number requirements) were not available at the time of this analysis.

GHG emissions generated by construction would be primarily in the form of CO_2. Although emissions of other GHGs, such as CH_4 and N_2O, are important with respect to global climate change, the emission levels of these other GHGs from on- and off-road vehicles used during construction are relatively small compared with CO_2 emissions, even when factoring in the relatively larger global warming potential of CH_4 and N_2O.

Accordingly, total construction emissions for the 19-year buildout period associated with implementation of the Proposed Project Alternative and action alternatives were estimated using the URBEMIS 2007 Version 9.2.4 computer program (Rimpo and Associates 2008). URBEMIS is designed to model construction emissions for land use development projects based on building size, land use and type, and disturbed acreage and allows for the input of project-specific information. Construction-generated GHG emissions were modeled based on general information provided in the project description described in Chapter 2, "Alternatives," and default SMAQMD-recommended settings and parameters attributable to the proposed land use types and site location. In short, modeling was conducted using the same assumptions for estimating construction-generated emissions of criteria air pollutants and precursors, which are listed in the discussion under Impact 3A.2-1 of Section 3A.2, "Air Quality – Land."

Development of the SPA would occur over a very large area (approximately 3,510 acres) and construction would require substantial amounts of earthwork and grading. However, a detailed schedule describing the timing and location of construction activities under the Proposed Project and four other action alternatives (Resource Impact Minimization, Centralized Development, Reduced Hillside Development, and No USACE Permit) is not available at the time of writing this EIR/EIS. Construction of the site is anticipated to commence in 2011 and last until approximately 2030. Given that exhaust emission rates of the construction equipment fleet in the state are expected to decrease over time due to ARB- and SMAQMD-lead efforts, annual construction emissions were estimated using the earliest calendar when construction would begin (i.e., 2011) in order to generate conservative estimates. It is anticipated, however, that in later years, advancements in engine technology, retrofits, and turnover in the equipment fleet would result in increased fuel efficiency, potentially more alternatively fueled equipment, and lower levels of GHG emissions. Also, the URBEMIS model does not account for reductions in CO_2 emission rates that would affect future construction activity due to the regulatory environment that is expected to evolve under AB 32. For instance, ARB's Scoping Plan identifies the need to expand efficiency strategies and low carbon fuels for heavy-duty and off-road vehicles (ARB 2008).

Construction emissions levels associated with the Proposed Project and four other action alternatives would differ in the total number of residential units, commercial square footage, office square footage, and school square footage to be developed. A summary of the GHG emissions generated during buildout of the Proposed Project and four other action alternatives is presented in Table 3A.4-1. Refer to Appendix C1 for a detailed summary of the URBEMIS modeling assumptions, inputs, and outputs.

Table 3A.4-1
Summary of Modeled Greenhouse Gas Emissions (CO_2e) from On-Site Elements for the Proposed Project and Action Alternatives

Source	CO_2e Emissions by Alternative [1]				
	PP	RIM	RHD	CD	NCP
Construction Emissions over Buildout Period (2011-2030) (metric tons) [2, 3]	50,456	44,979	50,684	47,105	42,664
Operational Emissions at Full Buildout (Year 2030) (metric tons/year)					
Area-Source Emissions [4]	45,478	36,027	46,995	40,062	31,435
Mobile-Source Emissions [4]	111,037	86,171	111,848	108,560	92,043
Indirect Operational Emissions Associated with Electricity Consumption [5]	111,049	96,503	145,454	126,154	99,860
Indirect Operational Emissions Associated with Water Consumption [6]	23,485	18,193	26,399	21,433	16,877
Total Operational Emissions [7]	**291,049**	**236,895**	**330,696**	**296,208**	**240,215**
Operational GHG Efficiency Metrics					
Residential Population Accommodated by Alternative	24,335	19,584	28,084	20,689	15,808
Employment (jobs) Accommodated by On-Site Development	13,209	9,500	14,119	13,574	11,173
Service Population (SP) Supported by Alternative	37,544	29,084	42,203	34,263	26,981
Annual CO_2e/SP (metric tons/year)	7.8	8.2	7.8	8.7	8.9
GHG Efficiency Benchmarks					
Annual CO_2e/SP benchmark that reflects statewide target for Year 2020 (metric tons/year) [8]	4.4				
Annual CO_2e/SP benchmark that reflects statewide target for Year 2030 (metric tons/year) [8]	3.7				

Notes: CO_2e = carbon dioxide equivalent; PP = Proposed Project/Action; RIM = Resource impact Minimization; CD = Centralized Development; RHD = Reduced Hillside Development; NCP = No USACE Permit; GHG = greenhouse gas; SP = Service Population; AB = Assembly Bill; ARB = Air Resources Board; CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; VMT = vehicle miles traveled; CCAR = California Climate Action Registry; CEC = California Energy Commission

[1] The values presented do not include the full life cycle of GHG emissions that would occur over the production/transport of materials used during the construction of the on-site elements under each build alternative or used during the operational life of the project, solid waste that would be generated over the life of the project, and the end of life for the materials and processes that would occur as an indirect result of the project. Estimating the GHG emissions associated with these processes would be too speculative for meaningful consideration and would require analysis beyond the current state of the art in impact assessment, and may lead to a false or misleading level of precision in reporting operational GHG emissions. Furthermore, indirect emissions associated with in-state energy production and generation of solid waste would be regulated under AB 32 directly at the source or facility that would handle these processes. The emissions associated with off-site facilities in California would be closely controlled, reported, capped, and traded under AB 32 and California ARB programs, as recommended by ARB's Scoping Plan (ARB 2008). Therefore, it is assumed that GHG emissions associated with these life-cycle stages would be consistent with AB 32 requirements. Note that this table does not include the No Project Alternative, because if developed, construction of residences that could be developed under the adopted Sacramento County General Plan and zoning ordinance would not be anticipated to require a high number of diesel-powered construction equipment or involve intense levels of earth movement for an extended period of time.

[2] Construction emissions were modeled with the URBEMIS 2007 computer model using the same assumptions and input parameters to estimate criteria air pollutant emissions in Section 3A.2, "Air Quality – Land." The URBEMIS 2007 model does not account for CO_2 emissions associated with the production of concrete or other building materials used in project construction. It also does not estimate GHG emissions other than CO_2, though the levels of these pollutants (i.e., CH_4 and N_2O) are expected to be nominal in comparison to the estimated CO_2 levels, even considering their respective global warming potentials. Estimated values represent the levels of construction-generated GHG emissions that would be generated during the entire 19-year construction period. Construction emission estimates do not account for the fact that the intense level of grading that would occur on the eastern side of the SPA (compared to the intensity of grading that would be performed in other areas of the site) under the Proposed Project, Resource Impact Minimization, Reduced Hillside Development, and No USACE Permit Alternatives, but not the Centralized Development Alternative. This distinction is pertinent because grading is one of the most GHG emission-intensive phases of construction. However, a more detailed analysis is not provided because grading plans were not available for the Proposed Action or the four other action alternatives at the time of the analysis.

[3] Construction emission estimates do not account for the fact that the intense level of grading that would occur on the eastern side of the SPA (compared to the intensity of grading that would be performed in other areas of the site) under the Proposed Project, Resource Impact Minimization, Reduced Hillside Development, and No USACE Permit Alternatives, but not the Centralized Development Alternative. This distinction is pertinent because grading is one of the most GHG emission-intensive phases of construction. However, a more detailed analysis is not provided because grading plans were not available for the Proposed Action or the four other action alternatives at the time of the analysis.

[4] Direct operational area- and mobile-source emissions were modeled using the URBEMIS 2007 computer model, based on VMT and the number of trips obtained from the traffic analysis, as well as the same assumptions and input parameters used to estimate criteria air pollutant emissions in Section 3A.2, "Air Quality – Land." URBEMIS also does not estimate GHG emissions other than CO_2 emissions, although the levels of these pollutants (i.e., CH_4 and N_2O) are expected to be nominal in comparison to the estimated CO_2 levels, even considering their respective global warming potential.

[5] Indirect operational CO2e emissions associated with electricity consumption were estimated using the methodologies and emission factors from the California Climate Action Registry's General Reporting Protocol, Version 3.1 (CCAR 2009).

[6] Electricity consumption and direct sources (e.g., mobile sources) associated with the consumption of water, including the conveyance, distribution, and treatment of that water, was estimated by RMC as part the Water Supply and Demand Analysis. See Appendix M for detailed assumptions and calculations of water-related GHG emissions.

[7] Totals may not add exactly due to rounding. Actual values for these parameters are expected to be lower for multiple reasons, which are discussed in detail in the impact analysis. This estimate total does not account for the depletion of carbon sequestration associated with the loss of blue oak woodland and individual oak trees that currently exist in the SPA. This impact is discussed in greater detail in Section 3A.3, "Biological Resources – Land".

[8] These benchmarks are based on projected increases in the state's population and employment levels and reductions targets established by AB 32.

Source: Modeling performed by AECOM in 2010

As shown in Table 3A.4-1, estimated GHG emissions from construction during the 19-year buildout of the Proposed Project Alternative would be approximately 50,456 metric tons of CO_2. This value accounts only for exhaust emissions of GHGs that would be generated by heavy-duty equipment, haul trucks, and vehicle trips, however. Additional GHG emissions would also be "embodied" in the materials selected for construction and the level of embodied GHG emission can vary substantially according to which materials are selected. This is particularly the case for construction of buildings and infrastructure that involve high quantities of cement, which is a key ingredient of concrete, given that ARB has identified cement production as an energy-intensive, GHG-intensive industry (ARB 2008, page 31). In fact, ARB has included cement plants as separate emissions sector in its demand-based GHG inventory for the state (ARB 2008, pg. 13). Construction-generated exhaust emissions would be temporary and short-term in that they would only occur during the buildout period; they would not continue on an ongoing basis year after year throughout the operational life of the development, as is the case with large stationary-source facilities or the operation of most land use developments. In addition, the regulatory environment that continues to evolve under the mandate of AB 32 is expected to reduce some of the GHG emissions from construction activity. ARB's Scoping Plan does not directly discuss GHG emissions generated by construction activity; however, it does recommend measures for improving the efficiency of medium- and heavy-duty on-road vehicles (1.4 MMT CO_2e) and expended efficiency strategies for off-road vehicles (e.g., forklifts, bulldozers). In addition, existing programs for air quality improvement in California, including the *Diesel Risk Reduction Plan* and the *2007 State Implementation Plan*, will result in the accelerated phase-in of cleaner technology for virtually all of California's diesel engine fleets, including construction equipment (ARB 2008). Measures implemented under these plans are likely to result in future fleets of construction equipment that are more GHG-efficient than existing fleets. For these reasons, levels of GHG emissions associated with construction activity are expected to decrease over time as new regulations are developed under the mandate of AB 32.

Nonetheless, due to the intensity and duration of construction activities under the Proposed Project Alternative, construction-generated GHG emission levels would make an incremental contribution to GHGs that cause climate change. It is presumed that this level of construction-generated GHG emissions would be substantial compared to other construction projects in the region and in the state, particularly given the large size of the project (approximately 3,510 acres) and the intense level of grading that would occur on the hilly, eastern side of the SPA.

Although the construction-generated emissions would be temporary and short-term, and although a new regime of regulations is expected to come into place under AB 32 and existing regulatory efforts will help reduce GHG emissions generated by construction activity throughout the state, given the information available today, GHG emissions associated with construction of the Proposed Project Alternative would result in a cumulatively considerable incremental contribution to this **significant** cumulative impact.

Mitigation Measure: Implement Mitigation Measures 3A.2-1a, 3A.2-1b, and 3A.4-1.

RIM

The types of emissions-generating construction activities that would occur under the Resource Impact Minimization Alternative would be similar to those that would take place under the Proposed Project Alternative. Construction-generated GHG emissions associated with buildout of the Resource Impact Minimization Alternative were modeled in URBEMIS and are presented in Table 3A.4-1. Refer to Appendix C1 for a detailed summary of the URBEMIS modeling assumptions, inputs, and outputs.

As shown in Table 3A.4-1, estimated GHG emissions from construction during the 19-year buildout of the Resource Minimization Alternative would be approximately 44,979 metric tons of CO_2, which is less than estimated for the Proposed Project Alternative. Similar to the Proposed Project Alternative, GHG emissions generated by construction under the Resource Impact Minimization Alternative would be temporary and short term. Although a new regime of regulations is expected to come into place under AB 32 and existing regulatory efforts will help reduce GHG emissions generated by construction activity throughout the state, given the

information available today, GHG emissions associated with construction of the Resource Impact Minimization Alternative would result in a cumulatively considerable incremental contribution to this **significant** cumulative impact. ***[Lesser]***

Mitigation Measure: Implement Mitigation Measures 3A.2-1a, 3A.2-1b, and 3A.4-1.

CD

The types of emissions-generating construction activities that would occur under the Centralized Development Alternative would be similar to those that would take place under the Proposed Project Alternative. Construction-generated GHG emissions associated with buildout of the Centralized Development Alternative were modeled in URBEMIS and are presented in Table 3A.4-1. Refer to Appendix C1 for a detailed summary of the URBEMIS modeling assumptions, inputs, and outputs.

As shown in Table 3A.4-1, estimated GHG emissions from construction during the 19-year buildout of the Centralized Development Alternative would be approximately 47,105 metric tons of CO_2. This mass emissions level is less than the level estimated for the Proposed Project Alternative (i.e., 50,456 metric tons), in part, because intense grading would not occur on the eastern side of the SPA. Similar to the Proposed Project Alternative, GHG emissions generated by construction under the Centralized Development Alternative would be temporary and short term. Although a new regime of regulations is expected to come into place under AB 32 and existing regulatory efforts will help reduce GHG emissions generated by construction activity throughout the state, given the information available today, GHG emissions associated with construction of the Centralized Development Alternative would result in a cumulatively considerable incremental contribution to this **significant** cumulative impact. ***[Lesser]***

Mitigation Measure: Implement Mitigation Measures 3A.2-1a, 3A.2-1b, and 3A.4-1.

RHD

The types of emissions-generating construction activities that would occur under the Reduced Hillside Development Alternative would be similar to those that would take place under the Proposed Project Alternative. Construction-generated GHG emissions associated with buildout of the Reduced Hillside Development Alternative were modeled in URBEMIS and presented in Table 3A.4-1. Refer to Appendix C1 for a detailed summary of the URBEMIS modeling assumptions, inputs, and outputs.

As shown in Table 3A.4-1, estimated GHG emissions from construction during the 19-year buildout of the Reduced Hillside Alternative would be approximately 50,684 metric tons of CO_2, which is greater than estimated for the Proposed Project Alternative. Similar to the Proposed Project Alternative, GHG emissions generated by construction under the Reduced Hillside Development Alternative would be temporary and short -term. Although a new regime of regulations is expected to come into place under AB 32 and existing regulatory efforts will help reduce GHG emissions generated by construction activity throughout the state, given the information available today, GHG emissions associated with construction of the Reduced Hillside Development Alternative would result in a cumulatively considerable incremental contribution to this **significant** cumulative impact. ***[Greater]***

Mitigation Measure: Implement Mitigation Measures 3A.2-1a, 3A.2-1b, and 3A.4-1.

Off-Site Elements

GHG emissions associated with the construction of the off-site elements were estimated using the URBEMIS 2007 Version 9.2.4 computer program (Rimpo and Associates 2008) and SMAQMD's Road Construction Emissions Model (SMAQMD 2009b). Although the model was developed by SMAQMD, it is also recommended by EDCAQMD and other air districts in the state for estimating emissions generated by construction projects that

are linear in nature. While construction-generated emissions of criteria air pollutants are evaluated according to maximum daily emission levels (as discussed under Impact 3A.2-1 in Section 3A.2, "Air Quality – Land"), GHG emission levels from construction activity are typically evaluated according to their annual level or the total level that would be emitted during project construction. However, annual or total levels of GHG emissions associated with construction of the off-site elements could not be accurately estimated due to the lack of information concerning the construction schedule, types and quantities of equipment involved, and types and quantities of construction materials used. Nonetheless, maximum daily GHG emission levels were estimated for each off-site element using these two models. While URBEMIS is designed to model construction emissions for land use development projects, the Road Construction Emissions Model (SMAQMD 2009b) is designed to estimate emissions from heavy-duty construction equipment, haul trucks, and worker commute trips and fugitive PM (particulate matter) dust associated with linear construction projects. For all the elements, it was estimated that the most emission-intensive phase of construction would consist of grading, excavation, and other earth-movement activities, as is typically the case for most construction projects. Because detailed information about the construction of the off-site elements was not available at the time of this analysis, the following conservative projections were used in the modeling:

- the entire site could potentially be graded on a single day, regardless of project size; and
- each off-site element could potentially be constructed as early as the year 2011. This is a conservative assumption because equipment exhaust emissions from subsequent years are anticipated to be lower as new regulations and emissions technologies for off-road equipment come into place.

Emission levels associated with the construction of each of the proposed off-site elements were modeled separately. Model inputs include conservative estimates about size (i.e., dimensions and acreage) of the construction area associated with each off-site element based on the map in Exhibit 2-9 in Chapter 2, "Alternatives," and default parameters (i.e., equipment types and numbers) from the applicable model. Table 3A.4-2 summarizes the modeled worst-case daily GHG emission levels associated with construction of each off-site element. Refer to Appendix C1 for a detailed summary of the modeling assumptions, inputs, and outputs.

Table 3A.4-2
Summary of Maximum Daily Exhaust Emissions of Greenhouse Gases from Construction of Off-Site Elements

Off-Site Element	Area (acres)[1]	Exhaust Emissions of CO_2 (lb/day)[2]
Detention Basin [3]	3.4	4,159
Prairie City Road Interchange [3]	19.3	4,159
Rowberry Drive Overcrossing [3]	18.7	4,159
Oak Avenue Interchange [3]	46.7	9,122
Sewer Force Main Connection to Existing Pump Station [4]	2.4	9,004
Roadway Extensions into El Dorado County [4]	1.4	4,916

Notes: CO_2 = carbon dioxide; lb/day = pounds per day; GHG = greenhouse gases; SMAQMD = Sacramento Metropolitan Air Quality Management District

[1] The area of each off-site element was estimated based on Exhibit 2-9 in Chapter 2, "Alternatives."

[2] Maximum daily construction emissions are representative of a construction day in the earliest construction year (2011). Detailed input parameters and modeling output are included in Appendix C1. Emission level estimated do not include embodied GHG emissions associated with materials used in construction (e.g., concrete).

[3] Maximum daily emissions were estimated using the construction module and grading phase in URBEMIS 2007 Version 9.2.4 (Rimpo and Associates 2008).

[4] Maximum daily emissions on projects linear in nature were estimated using the Roadway Construction Emissions Model SMAQMD 2009b)

Source: Modeling performed by AECOM in 2009

The estimated GHG emission levels presented in Table 3A.4-2 do not include embodied GHG emissions, which are associated with the types and quantities of materials (e.g., concrete) used to construct each off-site element. Thus, in the discussion of each off-site element below, embodied emissions are addressed qualitatively.

Detention Basin and Sewer Force Main Connection

Based on the map in Exhibit 2-9 in Chapter 2, "Alternatives," grading and excavation activity associated with construction of the detention basin and sewer force main connection to an existing pump station would occur on approximately 3.4 acres and 2.4 acres of undeveloped land, respectively. As shown in Table 3A.2-4, maximum daily exhaust emissions of CO_2 generated by this activity would be approximately 4,159 pounds per day (lb/day) for the detention basin and 9,004 lb/day for the sewer force main connection. However, these estimates of maximum daily emission levels do not necessarily serve as strong indicators of the total level of GHG emissions that would result from construction of these two facilities. Nonetheless, because these two construction projects would be relatively small in acreage, total emissions associated with these activities are not anticipated to be substantial. In addition, levels of embodied GHG emissions are not anticipated to be high because construction of the detention basin and the sewer force main connection are not expected to involve extensive quantities of concrete or other energy-intensive construction materials. As a result, GHG emissions associated with construction of the detention basin and force main connection would not result in a cumulatively considerable incremental contribution to climate change. This would be a **less-than-significant** impact.

Mitigation Measure: No mitigation measures are required.

Prairie City Road Interchange, Rowberry Drive Overcrossing, Oak Avenue Interchange, and Roadway Extensions

Estimated maximum daily exhaust GHG emission levels associated with the construction of the Prairie City Road Interchange, Rowberry Drive overcrossing, Oak Avenue Interchange, and two roadway extensions into El Dorado County are also shown in Table 3A.4-2. The emission levels shown in Table 3A.4-2 for these off-site elements generally correlate with the size (i.e., acreage) of each element because it is estimated that the entire area of each off-site element would be graded in a single day. It is important to note that these estimates of maximum daily emission levels do not necessarily serve as strong indicators of the total level of GHG emissions that would result from construction of these off-site elements. There is the potential, however, that the total level of GHG-emitting equipment, the number of workers, and/or the length of time to build these off-site elements could be substantial. In addition, levels of embodied GHG emissions associated with construction of these off-site elements could be high because they could involve high quantities of concrete, asphalt, and/or other energy-intensive construction materials. Given that detailed parameters about the construction of these infrastructure improvements are not known at the time of writing this EIR/EIS, it is assumed that GHG emissions associated with construction of these elements could result in cumulatively considerable incremental contributions to climate change. This would be a **significant** cumulative impact.

Mitigation Measure: Implement Mitigation Measures 3A.2-1a, 3A.2-1b, and 3A.4-1.

Implementation of Mitigation Measure 3A.2-1a and Mitigation Measure 3A.2-1b (see Section 3A.2, "Air Quality – Land") would reduce construction vehicle emissions to the degree feasible, by requiring all SMAQMD-recommended measures that are applicable to the project such as the use of certain engines, following specific criteria, and other requirements. By reducing emissions of criteria air pollutants, GHG emissions also would be reduced. Implementation of Mitigation Measure 3A.4-1 would result in additional reductions in GHG emissions associated with construction activity. Mitigation Measures 3A.2-1a, 3A.2-1b, and 3A.4-1 are programmatic in that they recognize that emission control technologies will continue to evolve and the feasibility of more GHG reductions will likely increase over the 19-year buildout period of the project. They also recognize that a framework for understanding GHG emissions embodied in construction materials (e.g., concrete) may continue to evolve such that embodied emissions can be reduced through project-level mitigation. However, the extent to

which feasible technologies and GHG reduction measures will continue to be developed is not known at the time of writing this EIR/EIS. Therefore, this analysis concludes that these reductions would not be sufficient to fully reduce the construction-generated GHGs to the extent that they would not be cumulatively considerable. The regulatory changes that are likely under AB 32 and other legislation may result in additional, more substantial reductions in emissions through the use of low carbon fuels or off-road engine standards. Because of the uncertainty with respect to GHG reductions from regulations that have not yet been developed, and because the GHGs generated by construction of the Prairie City Road Interchange, Rowberry Drive overcrossing, Oak Avenue Interchange, and Roadway Connections to El Dorado County could be considerable, the incremental contribution of GHG emissions from project-related construction would be cumulatively considerable and **significant and unavoidable**.

This significance determination is based according to the program-level analysis presented above. However, an alternate impact conclusion for each of these four off-site elements may be supported by a project-level analysis that is based on detailed project-specific parameters (i.e., schedule, equipment, materials) used to estimate the total GHG emissions level associated with construction of the element and/or conducted in accordance with new guidance provided by ARB or the respective air district (i.e., SMAQMD or EDCAQMD). However, for purposes of this analysis and because additional detail is currently unavailable, a project-level significance determination cannot be made with reasonable accuracy.

IMPACT 3A.4-2 Generation of Long-Term Operational GHG Emissions. *Operation of the project over the long term would result in increased generation of GHGs, which would contribute considerably to cumulative GHG emissions.*

On-Site and Off-Site Elements

NP

Under the No Project alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80. Direct area- and mobile-source emissions of GHGs associated with operation of these residences and indirect emissions associated with electricity and water consumption by these residences would not be expected to be substantial. Also, development of these 44 rural residences on the 3,500-acre site would not involve the removal of a substantial number of trees, which are a form of carbon storage and sequester carbon from the atmosphere. In addition, no stationary sources of GHGs would be developed on the site. While the remainder of the undeveloped site would likely continue to be used for livestock grazing, generating substantial quantities of CH_4, this would not be considered a change relative to existing conditions. No off-site water facilities would be constructed under this alternative. Therefore, operational GHG emissions under the No Project Alternative would not result in a cumulatively considerable incremental contribution to climate change. This would be a **less-than-significant** impact. ***[Lesser]***

On-Site Elements

NCP, PP, RIM, CD, RHD

GHG emissions would be generated throughout the operational life of the Proposed Project and the four action alternatives. Operational emissions would be generated by area-, mobile-, and stationary-sources. Area-source emissions would be associated with activities such as combustion of natural gas for space and water heating, maintenance of landscaping and grounds, waste disposal, and other sources. Mobile-source emissions of GHGs would include project-generated vehicle trips for residents, employees, and visitors. In addition, increases in stationary-source emissions could occur at off-site utility providers from electricity generation that would supply power to the proposed land uses. Thus, the GHG's associated with the consumption of electricity in the SPA is considered an indirect source. On-site consumption of water would also result in indirect GHG emissions because of the electricity consumption associated with the off-site conveyance, distribution, and treatment of that water. In

addition, mobile and area source GHG emissions would be generated as a result of the operation and maintenance of on-site water treatment and conveyance facilities.

GHG emissions generated by operation of the proposed land uses under the Proposed Project and four action alternatives would be primarily in the form of CO_2. Although emissions of other GHGs, such as CH_4 and N_2O, are important with respect to global climate change, the emissions levels of these other GHGs from the sources considered for this project are relatively small compared with CO_2 emissions, even when factoring in the relatively larger global warming potential of CH_4 and N_2O.

At the time of writing this EIR/EIS emission factors and calculation methods for GHGs from development projects have not been formally adopted for use by the state, SMAQMD, or EDCAQMD. However, SMAQMD's *Guide to Air Quality Assessment in Sacramento County* does recommend that direct and indirect emissions of GHGs from a project be quantified and disclosed in the respective CEQA document, including area- and mobile-source emissions, and indirect emissions from in-state energy production and water consumption (SMAQMD 2009a, page 6-6). Direct operational CO_2 emissions were calculated using URBEMIS 2007, Version 9.2.4 (Rimpo and Associates 2008). Indirect operational emissions associated with electricity consumption were estimated according to methodologies of the CCAR's *General Reporting Protocol* (CCAR 2009). Indirect operational emissions associated with water consumption were estimated using information provided by the CEC (CEC 2007) as well as CCAR's *General Reporting Protocol* (CCAR 2009). The Proposed Project and four action alternatives would also result in the loss blue oak woodland and individual oak trees, which are a form of carbon storage and sequester carbon from the atmosphere; however, the loss in trees is not quantified for this analysis. The loss blue oak woodland and individual oak trees is discussed further in Section 3A.3, "Biological Resources – Land."

A summary of the operational GHG emissions were estimated for full buildout of the Proposed Project and four action alternatives, in the Year 2030 and are presented in Table 3A.4-1. The annual operational emissions level under the Proposed Project and four action alternatives was estimated using the best available methodologies and emission factors available at the time of writing this EIR/EIS. However, for many operational GHG emission sources GHG emission rates for future years are not yet developed, in part, because regulations continue to evolve under the mandate of AB 32. The URBEMIS model, as well as other GHG estimation protocols, do not yet account for the impact reductions of the future regulatory environment and future technological improvements that will result in GHG efficiencies. Thus, this analysis uses the emissions estimates modeled for full buildout as a proxy for evaluating GHG emissions associated with operation of the Proposed Project and four action alternatives.

As shown in Table 3A.4-1, estimated GHG emissions associated with operation of the land uses proposed under the Proposed Project, Resource Impact Minimization, Centralized Development, Reduced Hillside Development, and No USACE Permit Alternatives would total approximately 291,049; 236,895; 296,208; 330,696; and 240,215 annual metric tons, respectively. At full buildout the size of the residential population accommodated by these action alternatives would be approximately 24,335; 19,584; 20,689; 28,084; and 15,808 residents, respectively; and the number of jobs supported by these action alternatives would be approximately 13,209; 9,500, 13,574; 14,119; and 11,173, respectively. When estimated CO_2e emissions are normalized with respect to service population, the average annual efficiency rate of operations under full buildout of the Proposed Project, Resource Impact Minimization, Centralized Development, Reduced Hillside Development, and No USACE Permit Alternatives would be 7.8; 8.2; 8.7; 7.8; and 8.9 metric tons CO_2e/SP/year, respectively.

However, in many respects the annual CO_2e/SP values in Table 3A.4-1 for the Proposed Project and four action alternatives are representative of each action alternative's GHG efficiency under a business-as-usual scenario and are higher than what would likely occur. First, the level of mobile-source emissions, which was estimated to be 34-38% of the total operational emissions (depending on which action alternative is selected), is overstated because it is based on the VMT estimated by the traffic study, which is conservative. The total VMT estimated by the traffic study includes all trips associated with the proposed project Alternative, including trips that originate or terminate outside the project area. Many of these are trips would occur with or without the project, but in order to

be conservative, the traffic study attributes all of them to the project's land uses. Moreover, the estimated level of mobile-source emissions also includes some emissions associated with trips that would merely replace trips that already take place elsewhere in the Sacramento region. For instance, the VMT estimate includes mobile-source emissions associated with workers who would commute to the SPA from outside the area, even though these trips may be replacing the workers' existing commutes to other locations. This point is particularly pertinent to the proposed mix of land use types, because the project includes a large regional employment center (i.e., the regional shopping mall) that is out of proportion with the amount of housing proposed and thus would draw in worker commute trips from outside areas.

The location of a large regional employment center in this location is consistent with the Sacramento Area Council of Governments (SACOG) Sacramento Region Blueprint, which is intended to reduce overall VMT and GHG emissions in the region.

Furthermore, the VMT estimate accounts for only some (not all) of the trip reduction features that would be part of the project design under the Proposed Project and four action alternatives. The Proposed Project and each of the other four action alternatives include some "smart growth" concepts, such as a mix of uses configured for convenient bike and pedestrian access, an extensive network of bike and pedestrian connections and integration of transit infrastructure. The transportation model used in the traffic analysis functions at a regional scale, so all the nuances of the land use planning under the Proposed Project and each of the other four action alternatives are not necessarily reflected in their respective estimates of net VMT. By the same token, the No USACE Permit, Proposed Project, Centralized Development, and Reduced Hillside Development Alternatives, which are consistent with the SACOG Sacramento Region Blueprint, can only go so far in balancing land uses while remaining consistent with the direction from the SACOG Sacramento Region Blueprint to create a large regional employment center in this location – which results in a disproportionately high number of jobs in the SPA. This increases VMT compared to a fully integrated land use plan that has a balanced jobs/housing ratio. In addition, the emissions rates used to estimate mobile-source GHG emissions do not account for GHG reductions that would result from the Low Carbon Fuel Standard, which was adopted as a discrete early-action measure of AB 32, or the CAA waiver that California received from EPA allowing the state to adopt more stringent fuel efficiency standards for passenger vehicles and light trucks (AB 1493, which is discussed in the "Regulatory Framework" section above).

With regard to the other largest category of operational GHG emissions shown in Table 3A.4-1, indirect GHG emissions related to the consumption of fossil fuel-based electricity, these estimated emissions do not account for reductions that will result from future regulatory changes under AB 32. The estimate of these emissions is not discounted to reflect the alternative-energy mandate of SB 107, which requires the Sacramento Municipal Utility District (SMUD) and other electric utilities to provide at least 20% of its electricity supply from renewable sources by 2010 and 30% by 2020; this mandate would be fully implemented before full buildout of the Proposed Project and other four action alternatives. Because SMUD is still procuring enough renewable energy to meet this goal, the estimated rate of GHG emissions from electricity is expected to decrease between now and 2010. In addition, SB 1368 requires more stringent emissions performance standards for new power plants, both in-state and out-of-state, that will supply electricity to California consumers. Thus, implementation of SB 1368 will also reduce GHG emissions associated with electricity consumption. Rates of energy consumption will be further reduced with implementation of the 2010 Green Building Regulations, which will replace Title 24 building standards with more stringent, energy-efficiency requirements.

Further reductions are also expected from other regulatory measures that will be developed under the mandate of AB 32, as identified and recommended in ARB's Scoping Plan (ARB 2008). In general, the Scoping Plan focuses on achieving the state's GHG reduction goals with regulations that improve the efficiency of motor vehicles and the production (and consumption) of electricity. Thus, even with the implementation of no project-specific mitigation, the rate of GHG emissions from development under the Proposed Project and other four action alternatives are projected to decrease in subsequent years as the regulatory environment progresses under AB 32. Additionally, new technology improvements may become available or the feasibility of existing technologies may

improve. Nonetheless, a complete picture of the future regulatory environment is unknown at this time. GHG reduction measures promulgated under the AB 32 mandate may not be sufficient to cause future development to achieve ARB's recommended 30% reduction from business-as-usual emissions levels projected for 2020 (as discussed in the Scoping Plan) or the CO_2e/SP/year goals for the years 2020 or 2030 discussed above.

Also worth consideration is that, for the moment, the total annual GHG emissions level associated with operation of the Proposed Project and the other four action alternatives would exceed 25,000 metric tons of CO_2 per year throughout their operational life, which is the mandatory reporting level for stationary sources as part of implementation of AB 32. In comparison to this reporting level, the amount of operational GHG emissions of the Proposed Project and the other four action alternatives would be considered substantial.

Because the total GHG emissions associated with project operations under the Proposed Project and other four action alternatives would be considered substantial, and due to the uncertainty about whether the future regulations developed through implementation of AB 32 would cause operational emissions to be 30% lower than business-as-usual emission levels or achieve the CO_2e/SP/year goals for the years 2020 or 2030, the Proposed Project, Resource Impact Minimization, Centralized Development, Reduced Hillside Development, and No USACE Permit Alternatives would result in a cumulatively considerable contribution to a **significant** cumulative impact related to long-term operational generation of GHGs. ***[According to the annual CO_2e/SP metric for the year 2030 presented in Table 3A.4-1, the extent of this impact for the Resource Impact Minimization, Centralized Development, Reduced Hillside Development, and No USACE Permit Alternatives would be greater than that for the Proposed Project Alternative. The Reduced Hillside Development Alternative's annual CO_2e/SP would be equal to that of the Proposed Project Alternative.]***

Mitigation Measure: Implement Mitigation Measure 3A.2-2.

Mitigation Measure 3A.4-2a: Implement Additional Measures to Reduce Operational GHG Emissions.

Each increment of new development within the project site requiring a discretionary approval (e.g., proposed tentative subdivision map, conditional use permit), shall be subject to a project-specific environmental review and will require that GHG emissions from construction and operation of each phase of development be reduced by 30% from business-as-usual 2006 emissions and as required by the California Global Warming Solutions Act of 2006 (AB 32).

The City shall require feasible reduction measures that, in combination with existing and future regulatory measures developed under AB 32, will reduce GHG emissions associated with the operation of future project development phases and supporting roadway and infrastructure improvements that are part of the selected action alternative by an amount sufficient to achieve the 2020-based goal of 4.36 CO_2e/SP/year for development that would become operational on or before the year 2020 and the 2020-based goal of 3.68 CO_2e/SP/year for development that would become operational on or before the year 2030, if it is feasible to do so. The feasibility of potential GHG reduction measures shall be evaluated by the City at the time each phase of development is proposed in order to allow for ongoing innovations in GHG reduction technologies, as well as incentives created in the regulatory environment.

For each increment of new development, the project applicant(s) shall submit to the City a list of feasible energy efficient design standards to be considered in the project-specific environmental review. These energy conservation measures which will be incorporated into the design, construction, and operational aspects of each increment of development, would result in a reduction in overall project energy consumption and GHGs. The project-specific environmental review shall further identify potentially feasible GHG reduction measures to reflect the current state of the regulatory environment, and which will continuously evolve under the mandate of AB 32 and the resulting CO_2e/SP/year metric. The City will review and ensure inclusion of the design features in the proposed project before the applicant(s) can receive the City's discretionary approval for the applicable increment of development. In determining

what measures should appropriately be imposed by the City under the circumstances, the City shall consider the following factors:

- the extent to which rates of GHG emissions generated by motor vehicles traveling to, from, and within the project site are projected to decrease over time as a result of regulations, policies, and/or plans that have already been adopted or may be adopted in the future by ARB or other public agency pursuant to AB 32, or by EPA;

- the extent to which mobile-source GHG emissions, which at the time of writing this EIR/EIS comprise a substantial portion of the state's GHG inventory, can also be reduced through design measures that result in trip reductions and reductions in trip length;

- the extent to which GHG emissions emitted by the mix of power generation operated by SMUD, the electrical utility that will serve the project site, are projected to decrease pursuant to the Renewables Portfolio Standard required by SB 1078 and SB 107, as well as any future regulations, policies, and/or plans adopted by the federal and state governments that reduce GHG emissions from power generation;

- the extent to which replacement of CCR Title 24 with the California Green Building Standards Code or other similar requirements will result in new buildings being more energy efficient and consequently more GHG efficient;

- the extent to which any stationary sources of GHG emissions that would be operated on a proposed land use (e.g., industrial) are already subject to regulations, policies, and/or plans that reduce GHG emissions, particularly any future regulations that will be developed as part of ARB's implementation of AB 32, or other pertinent regulations on stationary sources that have the indirect effect of reducing GHG emissions;

- the extent to which the feasibility of existing GHG reduction technologies may change in the future, and to which innovation in GHG reduction technologies will continue, effecting cost-benefit analyses that determine economic feasibility; and

- whether the total costs of proposed mitigation for GHG emissions, together with other mitigation measures required for the proposed development, are so great that a reasonably prudent property owner would not proceed with the project in the face of such costs.

In considering how much, and what kind of, measures are necessary in light of these factors, the City shall consider and implement as appropriate, the following non-exclusive and non-exhaustive list of measures. GHG emission reduction strategies and their respective feasibility are likely to evolve over time. These measures are derived from multiple sources including the Mitigation Measure Summary in Appendix B of the California Air Pollution Control Officer's Association (CAPCOA) white paper, *CEQA & Climate Change* (CAPCOA 2009a); CAPCOA's *Model Policies for Greenhouse Gases in General Plans* (CAPCOA 2009b); and the California Attorney General's Office publication, The California Environmental Quality Act: Addressing Global Warming Impacts at the Local Agency Level (California Attorney General's Office 2008).

Energy Efficiency

- Include clean alternative energy features to promote energy self-sufficiency (e.g., photovoltaic cells, solar thermal electricity systems, small wind turbines).

- Design buildings to meet CEC Tier II requirements (e.g., exceeding the requirements of the Title 24 [as of 2007] by 35%).

- Site buildings to take advantage of shade and prevailing winds and design landscaping and sun screens to reduce energy use.

- Install efficient lighting in all buildings (including residential). Also install lighting control systems, where practical. Use daylight as an integral part of lighting systems in all buildings.

- Install light-colored "cool" pavements, and strategically located shade trees along all bicycle and pedestrian routes.

Water Conservation and Efficiency

- With the exception of ornamental shade trees, use water-efficient landscapes with native, drought-resistant species in all public area and commercial landscaping. Use water-efficient turf in parks and other turf-dependant spaces.

- Install the infrastructure to use reclaimed water for landscape irrigation and/or washing cars.

- Install water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls.

- Design buildings and lots to be water-efficient. Only install water-efficient fixtures and appliances.

- Restrict watering methods (e.g., prohibit systems that apply water to nonvegetated surfaces) and control runoff. Prohibit businesses from using pressure washers for cleaning driveways, parking lots, sidewalks, and street surfaces. These restrictions should be included in the Covenants, Conditions, and Restrictions of the community.

- Provide education about water conservation and available programs and incentives.

- To reduce stormwater runoff, which typically bogs down wastewater treatment systems and increases their energy consumption, construct driveways to single family detached residences and parking lots and driveways of multifamily residential uses with pervious surfaces. Possible designs include Hollywood drives (two concrete strips with vegetation or aggregate in between) and/or the use of porous concrete, porous asphalt, turf blocks, or pervious pavers.

- Comply with any applicable water conservation ordinances.

Solid Waste Measures

- Reuse and recycle construction and demolition waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard).

- Provide interior and exterior storage areas for recyclables and green waste at all buildings.

- Provide adequate recycling containers in public areas, including parks, school grounds, golf courses, and pedestrian zones in areas of mixed-use development.

- Provide education and publicity about reducing waste and available recycling services.

Transportation and Motor Vehicles

- Promote ride-sharing programs and employment centers (e.g., by designating a certain percentage of parking spaces for ride-sharing vehicles, designating adequate passenger loading and unloading zones

and waiting areas for ride-share vehicles, and providing a Web site or message board for coordinating ride-sharing).

- Provide the necessary facilities and infrastructure in all land use types to encourage the use of low- or zero-emission vehicles (e.g., electric vehicle charging facilities and conveniently located alternative fueling stations).

- At industrial and commercial land uses, all forklifts, "yard trucks," or vehicles that are predominately used on-site at non-residential land uses shall be electric-powered or powered by biofuels (such as biodiesel [B100]) that are produced from waste products, or shall use other technologies that do not rely on direct fossil fuel consumption.

Implementation: The project applicant(s) of all project phases.

Timing: Before approval of final maps and/or building permits for all project phases requiring discretionary approval, including all on- and off-site elements.

Enforcement: City of Folsom Community Development Department.

Mitigation Measure 3A.4-2b: Participate in and Implement an Urban and Community Forestry Program and/or Off-Site Tree Program to Off-Set Loss of On-Site Trees.

The trees on the project site contain sequestered carbon and would continue to provide future carbon sequestration during their growing life. For all trees that are subject to removal, the project applicant(s) of all project phases shall participate in and provide necessary funding for urban and community forestry program (such as the UrbanWood program managed by the Urban Forest Ecosystems Institute [Urban Forest Ecosystems Institute 2009]) in which wood from any removed trees is harvested for an end-use that would retain its carbon sequestration (e.g., furniture building, cabinet making). For all nonharvestable trees that are subject to removal, the project applicant(s) shall develop and fund an off-site tree program that includes a level of tree planting that, at a minimum, increases carbon sequestration by an amount equivalent to what would have been sequestered by the blue oak woodland during its lifetime. This program shall be funded by the project applicant(s) of each development phase and reviewed for comment by an independent Certified Arborist unaffiliated with the project applicant(s) and shall be coordinated with the requirements of Mitigation Measure 3.3-5, as stated in Section 3A.3, "Biological Resources - Land." Final approval of the program shall be provided by the City. Components of the program may include, but not be limited to, providing urban tree canopy in the City of Folsom, or reforestation in suitable areas outside the City. The California Urban Forestry Greenhouse Gas Reporting Protocol shall be used to assess this mitigation program (CCAR 2008). All unused vegetation and tree material shall be mulched for use in landscaping on the project site, shipped to the nearest composting facility, or shipped to a landfill that is equipped with a methane collection system, or combusted in a biomass power plant. Tree and vegetative material should not be burned on- or off-site unless used as fuel in a biomass power plant.

Implementation: The project applicant(s) of all project phases.

Timing: Before approval of final maps and/or building permits for all project phases requiring discretionary approval, including all on- and off-site elements.

Enforcement: The City of Folsom Community Development Department.

Off-Site Elements

This analysis is similar to the analysis of criteria air pollutant emissions associated with the operation of the off-site elements discussed under Impact 3A.2-2 in Section 3A.2, "Air Quality – Land."

The proposed off-site detention basin, Prairie City Road Interchange, Rowberry Drive overcrossing, Oak Avenue Interchange, sewer force main connection, and the two roadway extensions would not be anticipated to result in a considerable increase in operational GHG emissions beyond those associated with the project. While the road improvement-related elements would accommodate local vehicle traffic, they would not be expected to result in a substantial increase in vehicle trips and associated mobile-source emissions. (A substantial portion of vehicle trips using the proposed roadway infrastructure elements would be generated by the land uses developed in the SPA and associated mobile-source emissions are discussed in the analysis of on-site elements above.) Some of the roadway infrastructure improvements may actually reduce VMT by enabling more direct travel routes between area destinations. Also, it is not anticipated that the detention basin would generate a substantial number of vehicle trips other than the nominal amount of trips associated with routine maintenance of the facility. As a result, GHG emissions associated with operation of the off-site elements would not be cumulatively considerable and this would be a **less-than-significant** cumulative impact.

Mitigation Measure: No mitigation measures are required.

By acknowledging that the regulatory environment will continue to progress and that new GHG reduction technologies will continue to be innovated over time, Mitigation Measure 3A.4-2 requires the implementation of project-specific mitigation measures that are appropriate and feasible during each phase or increment of project development. Although Mitigation Measure 3A.4-2 would require the implementation of all feasible GHG reduction measures known at this time, it is unknown at the time of writing this EIR/EIS whether the selected project-specific measures during each project phase, in combination with the GHG reductions realized from the regulatory environment that exists at that time, would result in attainment of the applicable CO_2e/SP goal.

As the preceding discussion suggests, much of the difficulty in achieving the applicable CO_2e/SP goal through measures imposed by the City reflects the reality that the vast majority of GHG emissions associated with the Proposed Project and the other four action alternatives would be attributable to the combustion of fossil fuels, either in motor vehicles or in electricity-generating power plants. The state, it is clear, must make significant strides in changing the make-up of transportation fuels and power plant fuels if it is to achieve compliance with AB 32. Based on the Scoping Plan adopted by ARB on December 11, 2008, however, it is reasonable to expect that the state should be able to make such strides through regulations and policies adopted pursuant to AB 32. Given the long period of time needed for build-out of the project, these regulations and policies should be effective in reducing GHG emissions from vehicles and power plants during the period of time in which the City approves the vast majority of project-level development entitlements needed for development pursuant to, and consistent with, the Proposed Action or selected alternative. As these regulations and policies gradually become effective, the task of achieving the applicable CO_2e/SP goal should become comparatively easier. However, the precise level of reductions is difficult to calculate for all phases of development, and therefore would be speculative at this time. As a precaution, this EIR/EIS concludes that the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives' incremental contribution to long-term operational GHG emissions is **cumulatively considerable** and **significant and unavoidable**.

3A.4.2 Impacts on the Project Related to Global Climate Change

Introduction

This section analyzes the potential impact of global climate change on the project (e.g., effects of increased sea levels, reduced snow pack). Because the potential impacts of global warming have only recently been realized,

firm data, commonly accepted thresholds for significance, and firm conclusions are not available. This section therefore draws from a range of studies that analyze global and regional patterns and trends. Given the uncertainties in climate change modeling and prediction there are few or no viable models or studies devoted specifically to the project vicinity. Therefore, in order to increase the data set of information about potential regional changes, some of the studies relied on analyze climate for the entire Central Valley, including both the Sacramento and San Joaquin Valleys.

Since there are no formally accepted methodologies, a lead agency must use its best efforts to find out and disclose all that it reasonably can about the potential adverse environmental effects of a proposed project or on a proposed project. However, the analysis cannot rely on speculation. Speculation that is based on unspecified and uncertain future effects that cannot reasonably be evaluated cannot result in verifiable analyses. Furthermore, such analysis could mislead the decision makers and the public. As indicated in the State CEQA Guidelines, "If after a thorough investigation, an agency finds that a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact." (State CEQA Guidelines CCR Section 15145.)

The following analysis is based on available information and projections applicable to estimating the types of effects that may occur. While some effects of global climate change are reasonably foreseeable, the extent to which many of these effects would manifest themselves and the potential of other effects to occur, remain speculative. In the interests of fully informing the decision makers, many of the potential effects that are subject to a high degree of speculation are discussed in the following evaluation, despite the fact that it would be too speculative to draw a conclusion as to their significance. The discussion herein focuses on the potential effects of climate change on the project, rather than the potential of the project to contribute to global climate change.

Although there is a strong scientific consensus that global warming/global climate change is occurring and is greatly influenced by human activity, there is less certainty as to the timing, severity, and potential consequences of global climate change. Scientists have identified several ways in which global climate change could alter the physical environment in California (Kiparsky and Gleick 2005, Roos 2005, California Department of Water Resources [DWR] 2006). These include:

- increased average temperatures;
- modifications to the timing, amount, and form (rain versus snow) of precipitation;
- changes in the timing and amount of runoff;
- reduced water supply;
- deterioration of water quality; and
- elevated sea level.

The changes listed above may translate into a variety of other issues and concerns, such as:

- reduced agricultural production as a result of changing temperatures and precipitation patterns;
- changes in the composition, health, and distribution of terrestrial and aquatic ecosystems;
- reduced hydroelectric energy production caused by changes in the timing and volume of runoff; and
- reduced availability of energy because of greater demands associated with increased temperatures.

However, this evaluation of the effects of global climate change on the project does not address climate change associated with energy supply for the following reasons:

- There are many potentially wide-ranging direct and indirect effects of global climate change, such as potential reductions in hydroelectric energy production. These reductions could result from changes in the timing and volume of runoff that would cause reductions in the generation of electricity. However it is too speculative to determine that these potential changes would affect the project because they are both geographically remote and the impact on overall energy supply and markets is unknown. Also, potential changes may be addressed or corrected by other entities (e.g., energy providers increasing generation capacity to meet the increased

demand that is not specifically associated with the project; greater development and use of alternative energy sources such as solar to offset capacity losses); and

- The specific measures that would be implemented to address more wide-ranging direct and indirect effects of global climate change cannot be reasonably projected at this time.

This analysis does not suggest that the project would see no effect related to energy supply. Rather, any effects would be the same at the project vicinity, as elsewhere in the county, region, state, nation, and world, and would not result in specific unique impacts in the project vicinity.

This analysis focuses on the effects of global climate change that might have a direct, reasonably foreseeable effect on physical conditions in the project vicinity. Therefore, this analysis gives greatest consideration to climate-change data with more consistency in projections of future conditions, and thus a probability for a greater likelihood of occurring within a reasonable time frame (i.e., approximately 100 years).

Because the impacts of global change would be similar within a regional or local area, this analysis assumes that regardless of whether the No Project, No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives were implemented, the impact on the project would be substantially similar.

INFORMATION SOURCES

Information on the current state of the science surrounding climate change was derived from research papers, technical memoranda, literature summaries, and studies, including the following:

- United Nations Intergovernmental Panel on Climate Change documents *Climate Change 2001: The Scientific Basis* (IPCC 2001a); *Climate Change 2001: Synthesis Report* (IPCC 2001b); and *Climate Change 2007: The Physical Basis. Summary for Policymakers* (IPCC 2007);

- *California Water Plan Update 2005* (Bulletin 160-05) (DWR 2005a) and accompanying papers *Climate Change and California Water Resources: A Survey and Summary of the Literature* (Kiparsky and Gleick 2005) and "Accounting for Climate Change" (Roos 2005);

- *Progress on Incorporating Climate Change into Planning and Management of California's Water Resources, Technical Memorandum Report* (DWR 2006); and

- Published reports on aspects of climate change and associated effects (see Chapter 5, "References," of this EIR/EIS for a listing of all information sources cited in this section).

CHARACTERIZATION OF CLIMATE CHANGE IMPACTS

This section summarizes the current scientific perspective of climate change and associated effects, particularly those that could affect the project. Information is provided for each effect of climate change considered in this document, consisting of:

- increased temperature;
- precipitation volume, type, and intensity;
- runoff volume and timing;
- water supply;
- sea level rise;
- water quality changes; and
- agricultural changes.

For each climate change effect there is a discussion of:

- status of current scientific information and data about past trends;
- projected future changes and the accuracy and variability of modeling results, including identification of results presumed too speculative for conclusive analysis; and
- potential for the environmental effects of climate change to affect the Proposed Project Alternative, based both on the certainty or uncertainty of modeling results and on the physical nature of the effect.

This information is used in this section to consider and evaluate potential environmental impacts of future climate change on the project.

Background

Theories about climate change and global warming existed as early as the late 1800s. It was not until the later 1900s that understanding of the Earth's atmosphere had advanced to the point where many atmospheric and climate scientists began to accept that the Earth's climate is changing (IPCC 2001a, 2001b; DWR 2006).

In recent years, the scientific consensus has broadened to consider increasing concentrations of GHGs, attributable to anthropogenic (human) activities, as a primary cause of global climate change. The United Nations IPCC predicts that changes in the Earth's climate will continue through the 21st century and that the rate of change may increase significantly in the future because of the growing population and associated increase in human activity (IPCC 2001b, 2007). Recent studies confirm the existence of climate change, and emphasize the occurrence of impacts in the next 20–50 years (Backlund, Janetos, and Schimel 2008), but the scope and rate of change remains uncertain.

In recent years, the issue of global climate change has had an increasing role in scientific and policy debates over multiple environmental topics such as land use planning, transportation planning, energy production, habitat and species conservation, use of ocean resources, and agricultural production. Of particular concern are the existing and potential future effects of global climate change on hydrologic systems and water management (e.g., domestic water supply, agricultural water supplies, flood control, water quality). There is evidence that global climate change has already had an effect on California's hydrologic system. For example, historical data indicate a trend toward declining volumes of spring and summer runoff from the Sierra Nevada.

California water planners and managers have been among the first groups in the nation to realize the potential implications of statewide and regional climate change (rather than global-scale changes) on the reliability and safety of their systems. Research and analysis on climate risks facing California water resources began in the early 1980s, and by the end of that decade, state agencies such as the CEC had prepared the first assessments of state GHG emissions and possible impacts on a wide range of sectors. The California Water Plan (Bulletin 160) first addressed climate change in 1993 (DWR 1993). More recently, DWR and the Public Interest Energy Research program of CEC expanded and refined the analysis of climate change effects in California in the 2005 update of the California Water Plan, which explores a wide range of climate impacts and risks, including risks to water resources (Kiparsky and Gleick 2005, Roos 2005). The 2005 update also describes efforts that should be taken to quantitatively evaluate climate change effects for the next Water Plan update (DWR 2005a). DWR has also followed up on these issues with a technical memorandum report that specifically discusses progress on modeling climate change in the state, characterizes the effects of climate change, and incorporates climate change into planning and management of California's water resources (DWR 2006).

Variability in Regional Modeling of Climate Change

Much of the available trend data, modeling, and projections related to climate change are on a global scale. Climate change projections often rely on general circulation models (GCMs). These models develop large-scale

scenarios of changing climate parameters, usually comparing scenarios with different concentrations of greenhouse gases in the atmosphere. This information is typically not specific enough to make accurate regional assessments. As a result, more effort has recently been put into reducing the scale and increasing the resolution of climate models through various techniques such as "downscaling" or integrating regional models into the global models (Kiparsky and Gleick 2005, Roos 2005, DWR 2006). However, the level of uncertainty related to regional climate change is generally higher than that related to global projections because these current methodologies add uncertainty.

Variability in the results of climate change modeling is largely based on which global climate model is used, what inputs are selected for the model (world population increases and greenhouse gas emissions), and how the model is downscaled to provide region-specific data. For example, in DWR's report *Progress on Incorporating Climate Change into Management of California's Water Resources, Technical Memorandum Report* (DWR 2006), four scenarios projecting regional climate change were selected, consisting of combinations of two different global climate models and two different emissions scenarios. These four scenarios provide temperature results ranging from weak warming to relatively strong warming, and precipitation results ranging from modest reductions to weak increases (DWR 2006).

It should be remembered that results of climate change modeling, particularly for regional models, are not specific, quantified predictions. There is a lot of uncertainty about the magnitude of climate change that will occur during this century. It is unlikely that this level of uncertainty will be resolved in the foreseeable future (Dettinger 2005a). Therefore, effects on the environment anticipated under various climate change models should be considered as general projections of potential future conditions, with actual environmental effects likely falling within the range of results provided by a variety of model outputs.

Temperature

Status and Trends

The Earth's climate has had periods of cooling and warming in the past. Significant periods of cooling have been marked by massive accumulations of sea- and land-based ice extending from the Earth's poles to as far as the middle latitudes. Periods of cooling have also been marked by lower sea levels because of the accumulation of water as ice and the cooling and contraction of the Earth's oceans. Periods of warming caused recession of the ice toward the poles, warming and thermal expansion of the Earth's oceans, and rise in sea levels (DWR 2006, IPCC 2007).

The potential for human-induced changes in the Earth's temperature has been tied to increased concentrations of GHGs in the atmosphere, caused primarily by the production and burning of fossil fuels. The primary gases of concern are carbon dioxide, methane, and nitrous oxide (IPCC 2001a, 2001b, 2007). Average temperatures in the Northern Hemisphere appear to have been relatively stable from about the year 1000 to the mid-1800s, based on temperature proxy records from tree rings, corals, ice cores, and historical observations (IPCC 2001a). However, there is a level of uncertainty related to proxy temperature records, especially those extending far back into the past.

The IPCC stated that the Earth's climate has warmed since the preindustrial era and that it is very likely that at least some of this change is attributable to the activities of humans (IPCC 2007). Global average near-surface air temperatures and ocean surface temperatures increased by 0.74 °C ± 0.18°C (1.33°F ± 0.32°F) during the 20th century (IPCC 2007).

Temperature measurements, apparent trends in reduced snowpack and earlier runoff, and other evidence such as changes in the timing of blooming plants indicate that temperatures in California and elsewhere in the western United States have increased during the past century (National Oceanic and Atmospheric Administration [NOAA] 2005, Mote et al. 2005, Cayan et al. 2001).

Projections

Modeling results from GCMs are consistent in predicting increases in temperatures globally with increasing concentrations of atmospheric GHGs resulting from human activity. As discussed above, climate change projections can be developed on a regional basis using techniques to downscale from the results of global models (although increased uncertainty results from the downscaling). One relatively large group of model projections for California that was recently examined provides a temperature rise of about 2.5 to 9°C (4.5 to 16.2°F) for Northern California by 2100. An analysis of the distribution of the projections generally showed a central tendency at about 3°C (5.4°F) of rise for 2050, and about 5°C (9°F) for 2100 (Dettinger 2005b).

Snyder et al. (2002) produced one of the most refined scale temperature and precipitation estimates to date. Resulting temperature increases for a scenario of doubled carbon dioxide concentrations are 1.4 to 3.8°C (2.5 to 6.8°F) throughout California. This is consistent with the global increases predicted by the IPCC (2001b, 2007). In a regional model of the western United States, Kim et al. (2002) projected a climate warming of around 3 to 4°C (5.4 to 7.2°F). Of note in both studies is the projection of uneven distribution of temperature increases. For example, regional climate models show that the warming effects are greatest in the Sierra Nevada, with implications for snowpack and snowmelt (Kim et al. 2002, Snyder et al. 2002).

Effect on the Project

Based on the results of a variety of regional climate models, it is reasonably foreseeable that some increase in annual average temperatures will occur in California, and in the project vicinity, during the next 100 years. Although a temperature increase is expected, the amount and timing of the increase is uncertain. In general, predictions put an increase in the range of 3 to 5°C (5.4 to 9°F) over the next 50–100 years (Kim et al. 2002, Snyder et al. 2002, Dettinger 2005b).

An increase in average annual temperatures, by itself, would have little effect on the proposed land uses other than adjustments in project operations in response to warmer temperatures, such as increased evapotranspiration rates affecting both detention basin areas and landscaped areas, resulting in an increased irrigation demand, and potentially greater overall energy consumption to meet air conditioning needs.

Effects related to water supply is discussed below. Potential outcomes of increased temperature on a global and regional scale, such as changes in precipitation and runoff, also have a potential to substantially affect physical conditions in the project vicinity. These topic areas are also discussed below.

Therefore, although an increase in annual average temperature is a reasonably foreseeable effect of future climate change, this environmental change alone would have little effect on the project.

Precipitation

Climate change can affect precipitation in a variety of ways, such as by changing the following:

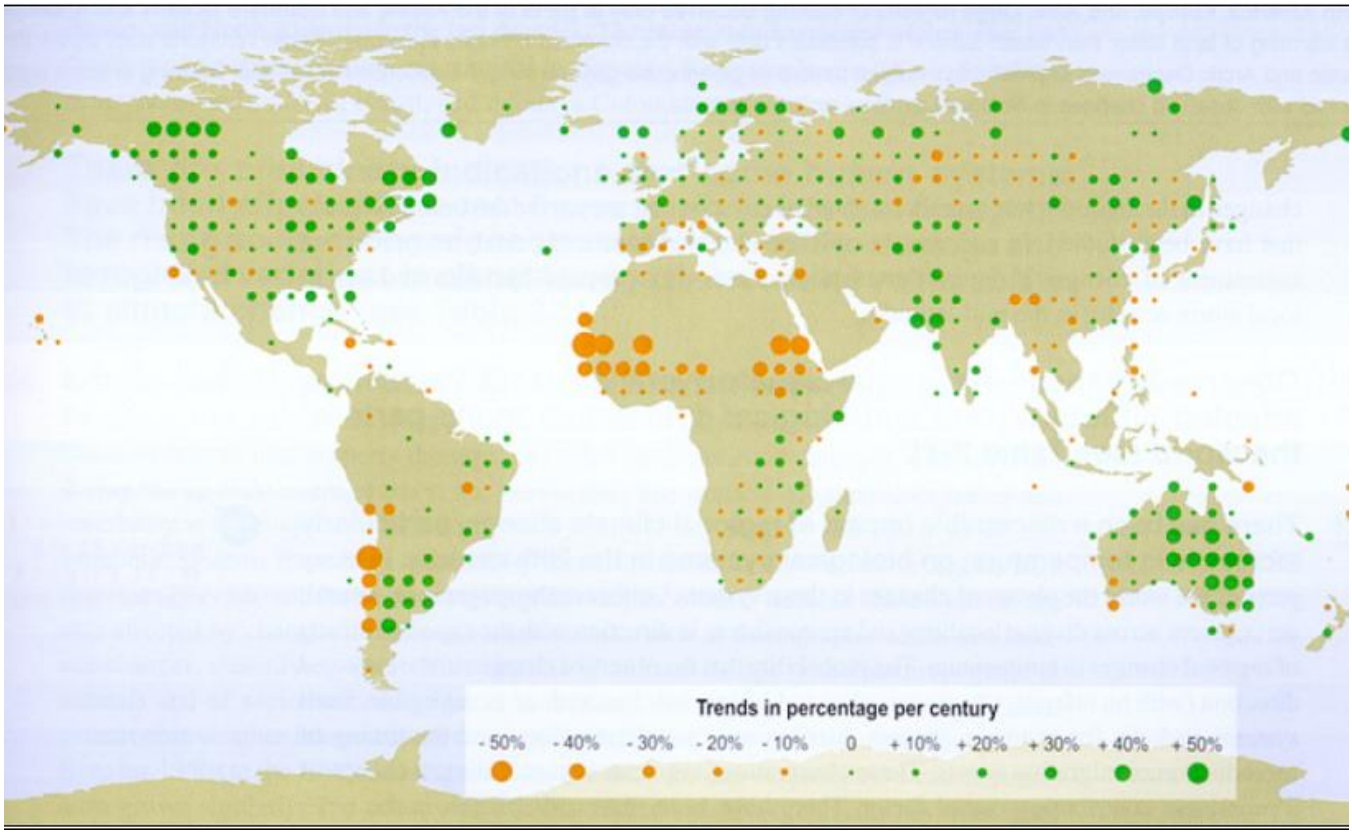
- overall amount of precipitation,
- type of precipitation (rain versus snow), and
- timing and intensity of precipitation events.

Each of these issue areas is discussed below.

Amount of Precipitation

Status and Trends

Worldwide precipitation is reported to have increased about 2% since 1900. While global average precipitation has been observed to increase, changes in precipitation over the past century vary in different parts of the world. Some areas have experienced increased precipitation while other areas have experienced a decline (Exhibit 3A.4-2) (IPCC 2001b, 2007; NOAA 2005). An analysis of trends in total annual precipitation in the western United States by the National Weather Service's Climate Prediction Center provides evidence that annual precipitation has increased in much of California, the Colorado River Basin, and elsewhere in the West since the mid-1960s (DWR 2006). In another study evaluating trends in annual November through March precipitation for the western United States and southwest Canada, the data indicate that for most of California and the Southwest there was increasing precipitation during the periods of 1930–1997 and 1950–1997 (Mote et al. 2005).



Source: Adapted by AECOM in 2009 from IPCC 2001

Global Precipitation Trend for 1900–2000 **Exhibit 3A.4-2**

Former State Climatologist James Goodridge compiled an extensive collection of longer-term precipitation records from throughout California. These data sets were used to evaluate whether there has been a changing trend in precipitation in the state over the past century (DWR 2006). Long-term runoff records in selected watersheds in the state were also examined. Based on a linear regression of the data, the long-term historical trend for statewide average annual precipitation appears to be relatively flat (no increase or decrease) over the entire record. However, an upward trend in precipitation during the latter portion of the record has been noted, but is not conclusive.

When these same precipitation data are sorted into three regions—northern, central, and southern California—trends show that precipitation in the northern portion of the state appears to have increased slightly from 1890 to 2002, and precipitation in the central and southern portions of the state show slightly decreasing trends. All changes were in the range of 1–3 inches annually (DWR 2006). Thus although existing data indicate some level of change in precipitation trends in California, more analysis is likely needed to determine whether changes in California's regional annual precipitation totals have occurred as the result of climate change or other factors (DWR 2006).

Projections

The IPCC predicts that increasing global surface temperatures are very likely to result in changes in precipitation. Global average precipitation is expected to increase during the 21st century as the result of climate change, based on global climate models for a wide range of greenhouse gas emission scenarios. However, global climate models are generally not well suited for predicting regional changes in precipitation because of the large scale of global projections relative to the small scale of regionally important factors that affect precipitation (e.g., maritime influences, effects of mountain ranges) (IPCC 2001a, 2007).

Therefore, while precipitation is generally expected to increase on a global scale as a result of climate change, significant regional variations in precipitation trends can be expected. Some recent regional modeling efforts conducted for the western United States indicate that overall precipitation will increase (Kim et al. 2002, Snyder et al. 2002), but considerable uncertainty remains because of differences among larger-scale GCMs. Where precipitation is projected to increase in California, the increases are mostly in northern California (Kim et al. 2002, Snyder et al. 2002) and in the winter months.

Various California climate models provide mixed results regarding changes in total annual precipitation in the state through the end of this century. Models predicting the greatest amount of warming generally predict moderate decreases in precipitation, while models projecting smaller increases in temperature tend to predict moderate increases in precipitation (Dettinger 2005b). In addition, an IPCC review of multiple global GCMs indicates that fewer than 66% of the models evaluated agree on whether annual precipitation would increase or decrease for much of the State's area. Therefore, no conclusion on an increase or decrease can be provided (IPCC 2007). Considerable uncertainties about the precise effects of climate change on California (and more specifically Sacramento River hydrology and water resources will remain until there is more precise and consistent information about how precipitation patterns, timing, and intensity will change.

Effect on the Project

Although global climate change models generally predict an increase in overall precipitation on a worldwide scale, there is no such consistency among the results of regional models applied to California. Based on the models used and the input assumptions, both increases and decreases in annual precipitation are projected. There is also variability in the results for different parts of the state. Given the uncertainty associated with projecting the amount of annual precipitation, any conclusion regarding significance of potential effects of climate change on precipitation volumes as they relate to reasonably foreseeable direct effects on physical conditions in the project vicinity would be too speculative to be meaningful.

Type of Precipitation – Snowpack

Status and Trends

California's annual snowpack, on average, has the greatest accumulations from November though the end of March. The snowpack typically melts from April through July. Snowmelt provides significant quantities of water to streams and reservoirs for several months after the annual storm season has ended. The length and timing of each year's period of snowpack accumulation and melting varies based on temperature and precipitation conditions (DWR 2006).

California's snowpack is important to the state's annual water supply because of its volume and the time of year that it typically melts. Average runoff from melting snowpack is usually about 20% of the state's total annual natural runoff and roughly 35% of the state's total usable annual surface water supply. The state's snowpack is estimated to contribute an average of about 15 million acre-feet (maf) of runoff each year, about 14 maf of which is estimated to flow into the Central Valley. In comparison, total reservoir capacity serving the Central Valley is about 24.5 maf in watersheds with significant annual accumulations of snow (DWR 2005b).

California's reservoir managers (including State Water Project [SWP] and Central Valley Project [CVP] facilities) use snowmelt to help fill reservoirs once the threat of large winter and early spring storms and related flooding risks have passed. These systems include water management infrastructure within the Sacramento River watershed, where additional water is stored in reservoirs and used to help meet downstream water demands after flows from snowmelt begin to recede. Some of the annual runoff collected in California's reservoirs is held from one year to the next because California's annual precipitation and snowpack can vary significantly from year to year. There may also be decade-scale variation in precipitation over the Sierra Nevada (Freeman 2002), and possibly other parts of California. Carryover storage can help meet water demand in years when precipitation and runoff is low.

Because the importance of the Sierra Nevada snowpack is tied to both the volume of water it holds and the timing of water releases (spring and early summer), simply assessing the amount of precipitation that falls as snow does not convey the full value of the snowpack and the potential effects of climate change on water supply. Measurements of the amount of Sierra Nevada runoff occurring from April to July are a better indicator of the combined interaction between the volume of the snowpack and the time of year that it melts.

Changes in patterns of runoff reveal declining water storage in the form of snowpack. Between 1906 and 2005, the total water year runoff in the Sacramento Valley rivers (including the Sacramento, Feather, Yuba, and American Rivers) has remained about the same (DWR 2006). However, runoff volume for April–July has declined from approximately 43% of total water-year runoff to approximately 34% of total water year runoff (i.e., has declined about 9% as compared to total year runoff). These values represent "unimpaired" runoff, meaning that the effects of runoff detention in reservoirs are removed. These data indicate that although overall precipitation volumes (represented by runoff amounts) showed no change, more runoff occurred as a result of rain during the winter months, and less runoff could be attributed to the melting of accumulated snowpack during the spring and early summer. These trends suggest less accumulation of snowpack and earlier runoff of snow melt.

Projections

As early as the mid-1980s and early 1990s, regional hydrologic modeling of global warming impacts has suggested with increasing confidence that higher temperatures will affect the timing and magnitude of snowmelt and runoff in California (Gleick 1986, 1997; Lettenmaier and Gan 1990; Lettenmaier and Sheer 1991; Nash and Gleick 1991a, 1991b; Hamlet and Lettenmaier 1999). Over the past two decades, this has been one of the most persistent and well-established findings on the impacts of climate change for water resources in the United States and elsewhere, and it continues to be the major conclusion of regional water assessments (Knowles and Cayan 2002, Barnett et al. in prep.).

By delaying runoff during the winter months when precipitation is greatest, snow accumulation in the Sierra Nevada acts as a massive natural reservoir for California. Despite uncertainties about how increased concentrations of greenhouse gases may affect precipitation, there is very high confidence that higher temperatures will lead to dramatic changes in the dynamics of snowfall and snowmelt in watersheds with substantially more snowfall (Kiparsky and Gleick 2005, DWR 2006). An analysis of the impact of rising temperatures on snowpack conducted by DWR (2006) shows that a 3°C (5.4°F) rise in average annual temperature would likely cause snowlines to rise approximately 1,500 feet. This would result in an annual loss of approximately 5 maf of water storage in snowpack. Simulations conducted by N. Knowles and D. R. Cayan (Knowles and Cayan 2002) project a loss in April snowpack in the Sierra Nevada of approximately 5% with a 0.6°C (1.1°F) increase in average annual temperature, an

approximately 33% loss with a 1.6°C (3.4°F) rise, and an approximately 50% loss in April snowpack with a 2.1°C (4.9°F) average annual temperature rise. Loss of snowpack was projected to be greater in the northern Sierra Nevada and the Cascades than in the southern Sierra Nevada because of the greater proportion of land at the low and mid-elevations in the northern ranges. With a temperature increase of 2.1°C, the northern Sierra Nevada and the Cascades were projected to lose 66% of their April snowpack, while the southern Sierra Nevada was projected to lose 43% of its April snowpack (Knowles and Cayan 2002).

Future predictions confirm that not only will snowpack form a smaller portion of overall precipitation but it will also melt and runoff earlier in the year in the Sacramento watershed and its constituent subbasins (Gleick and Chalecki 1999). This change will occur as overall precipitation will likely increase slightly. These two trends will most likely cause reduced summer flows in the Sacramento River, reduced summer soil moisture and increased winter flows and flood potential. Higher snowlines will cause a greater proportion of winter runoff and earlier snowmelt times will lengthen the duration of peak winter flows and flood potential.

Effect on the Project

Based on the results of a variety of regional climate models and literature, it is reasonably foreseeable that snowpack will be reduced and/or will melt earlier or more rapidly in watersheds that feed the Sacramento River. The SPA is located in the foothills east of the Sacramento Valley and receives snow very rarely. Consequently, changes in snowfall patterns would not directly affect precipitation in the SPA.

However, changes in snowpack could affect the project indirectly by altering the timing and volume of runoff that eventually feeds into the SPA and into waterways supplying water to the project. The primary water supply alternatives under consideration would rely on Natomas Central Mutual Water Company (NCMWC) surface water rights in the Sacramento River, that would be withdrawn at the Freeport Project diversion. Therefore, impacts to snowpack and associated runoff affecting the Sacramento River watershed are the most salient to proposed land uses in the project vicinity. The runoff sources can be divided into two categories: (1) direct rainfall-fed surface runoff accumulating in channels; and (2) released water from upstream reservoirs that is conveyed by the channels and will be used for groundwater recharge. The first source, direct surface runoff, will vary with large-scale regional changes in precipitation patterns. Because much of the naturally occurring runoff relevant to water supplies for the project originates as rainfall rather than snowfall (much of the Sacramento River watershed occurs in the Sacramento Valley itself and thus below the snowline), changes to the timing and magnitude of naturally occurring rainfall patterns will follow regional changes associated with climate change in the central and northern Sierra Nevada. The second source, released and/or purchased waters stored in upstream reservoirs, will largely depend on regional annual average precipitation accumulations. The management of upstream reservoirs may need to be altered to account for seasonal variations in precipitation type and intensity. However, the total water volumes stored in upstream reservoirs is largely tied to regional trends of annual average precipitation amounts. The predicted shift towards greater precipitation with a larger proportion of rainfall relative to snow will require greater upstream management in reservoirs and other flood control devices to maintain the current level of flood protection. Given the complex system of upstream water management, the impact of predicted climate changes on the project is speculative, but flood potential will probably increase if water management strategies remain the same. However, given that the magnitude and timing of the increase in winter runoff and the associated changes in reservoir use that may occur, the exact impact on the Proposed Project Alternative is speculative. Based on the uncertainty of projected changes it is not feasible or useful to mitigate anticipated changes in current planning.

Timing and Intensity of Precipitation Events

Status and Trends

Variability and extreme weather events are a natural part of any climatic system. The extent of climatic stability or variability is dependent in large part on the time frame examined. Climatic conditions may be characterized as relatively stable over periods of hundreds or thousands of years, but within that time frame there may be severe

droughts or flood events that vary widely beyond the overall average condition. Paleoclimatic evidence from tree rings, buried stumps, and lakebed sediment cores suggests that in California the past 200 years have been relatively wet and relatively constant when compared with older records (DWR 2006). These older records reveal greater variability than the historical record, in particular in the form of severe and prolonged droughts, but are not likely to be as reliable as more recent records. Most identified climatic averages and extremes for California are based on the historical climate record since 1900, and cannot be considered fully representative of past or future conditions (DWR 2006).

Extreme weather events are expected to be one of the more important indicators of climate change. Phenomena such as the El Niño/Southern Oscillation, which is the strongest natural interannual climate fluctuation, affect the entire global climate system and the economies and societies of many regions and nations. Direct effects of this climate fluctuation occur in California. The El Niño/Southern Oscillation phenomena for example, strongly influences storms and precipitation patterns. It is unclear how increases in global average temperatures associated with global warming might affect the El Niño cycles. However, the strong El Niños of 1982–83 and 1997–98 and associated flood events, along with the more frequent occurrences of El Niños in the past few decades, have forced researchers to try to better understand how human-induced climate change may affect interannual climate variability (Trenberth and Hoar 1996, Timmermann et al. 1999).

In addition to possible long-term changes in precipitation trends, increased variability of annual precipitation is a possible outcome of climate change. Based on a statistical analysis of California precipitation records, there appears to be an upward trend in the variability of precipitation over the 20th century, with variability values at the end of the century about 75% larger than at the beginning of the century. This indicates that there tended to be more extreme wet and dry years at the end of the century than there were at the beginning of the century (DWR 2006). However, as stated above, paleoclimatic evidence suggests that weather patterns in California have been relatively constant over the last 200 years, which identifies the variable weather patterns toward the latter part of this period as more pronounced. As identified previously in the “Amount of Precipitation” discussion, there has been little change in the average amount of annual precipitation in California over the last 100 years. Therefore, the increased variability between wet and dry years in recent decades appears to oscillate around the same annual average established over a longer time frame.

Projections

While variability is not well modeled in large-scale GCMs, some modeling studies suggest that the variability of the hydrologic cycle increases when mean precipitation increases, possibly accompanied by more intense local storms and changes in runoff patterns (DWR 2006). However, the results of another long-standing model point to an increase in incidents of drought, resulting from a combination of increased temperature and evaporation along with decreased precipitation (DWR 2006). Based on the first model mentioned, this decrease in precipitation would lead to reduced variability in hydrologic cycles.

A study that analyzed 20 GCMs currently in use worldwide suggests that the West Coast may be less affected by extreme droughts than other areas; instead, the region would experience increased average annual rainfall (Meehl et al. 2000). A separate study that reviewed several GCM scenarios showed increased risk of large storms and flood events for California (Miller, Kim, and Dettinger 1999). Conflicting conclusions about climatic variability and the nature of extreme weather events (e.g., droughts, severe storms, or both) support the need for additional studies with models featuring higher spatial resolution (Kiparsky and Gleick 2005, DWR 2006).

Effect on the Project

Although various climate change models predict some increase in variability of weather patterns and an increasing incidence of extreme weather events, there is no consistency among the model results, with some predicting increased incidents of droughts and others predicting increased frequency of severe storm events. Given the uncertainty associated with projecting the type and extent of changes in climatic variability and the

speculative nature of predicting incidents of extreme weather events, the effect on the project of changing patterns of storms and other extreme weather remains unclear, and the attempt to reach a significance conclusion would be speculative.

Runoff

Status and Trends

Runoff is directly affected by changes in precipitation and snowpack (see discussions above). Changes in both the amount of runoff and in seasonality of the hydrologic cycle have the potential to greatly affect the heavily managed water systems of the western United States.

As described in the previous discussion of snowpack, data indicate that although overall precipitation volumes (represented by runoff amounts) showed no change, more runoff occurred as a result of rain during the winter months, and less runoff could be attributed to the melting of accumulated snowpack during the spring and early summer (DWR 2006).

Projections

Detailed estimates of changes in runoff as a result of climate change have been produced for California using regional hydrologic models. With input of anticipated, hypothetical, and/or historical changes in temperature and precipitation in to models that include realistic small-scale hydrology, modelers have consistently seen substantial changes in the timing and magnitude, which can be attributed to runoff resulting from projected changes in climatic variables (Kiparsky and Gleick 2005). Model results indicate that as temperatures rise, a declining proportion of total precipitation falls as snow, more winter runoff occurs, and remaining snow melts sooner and faster in spring (Miller, Kim, and Dettinger 1999, Knowles and Cayan 2002, Gleick and Chalecki 1999). In some basins, spring peak runoff may increase; in others, runoff volumes may shift to earlier in the spring and winter months (Kiparsky and Gleick 2005, DWR 2006). If snowpack declines, it is also possible that the incidence or severity of flood events resulting from “rain on snow” conditions could also decline.

As indicated above, hydrology in the lower reaches of the Sacramento Valley is highly dependent on the interaction between Sierra Nevada snowpack, runoff, and management of reservoirs. Potential changes made to the amount of reservoir space retained for flood storage, retained annual carryover volumes, and other reservoir management factors in response to altered Sierra Nevada runoff patterns could substantially alter how those runoff patterns are experienced in downstream in the vicinity of the project vicinity. It is also possible that as climate change continues to progress over the next 50–100 years, new water storage projects (e.g., on-stream or off-stream storage reservoirs, expanding capacity at existing reservoirs) may be put in place to capture additional Sierra runoff. Additional storage capacity could assist in buffering runoff patterns in the lower river reaches from altered flow regimes in higher elevations.

Effect on the Project

Although various climate change models consistently predict reduced spring/summer runoff in the Sierra Nevada as a result of altered snowpack conditions, there is a great deal of uncertainty regarding how these changes would affect runoff patterns in the Sacramento Valley and consequently water dependent land uses in the Sacramento Valley and foothills. Potential modifications in management regimes of existing reservoirs, such as reducing retained annual carryover volumes to increase space available for flood storage, could buffer the Sacramento River and adjacent land uses from changes to runoff patterns at higher elevations. The potential for creation of new water storage capacity, such as on- or off-stream storage reservoirs or expanding capacity at existing reservoirs could also reduce the effects of altered runoff patterns. Given the integrated nature of the water system in California, even increased storage capacity in southern California could benefit the region by allowing reservoirs in northern California to hold less water for domestic or agriculture use and retain more capacity for flood control. Given the uncertainty associated with projecting changes in runoff patterns in water bodies at and

upstream of the project vicinity (the Sacramento River watershed is approximately 27,000 square miles, most of which occurs upstream of the project vicinity, and contains numerous subbasins, see also Section 3A.9, "Hydrology and Water Quality – Land") this potential climate change effect is too speculative to reasonably draw a meaningful conclusion regarding the significance of foreseeable direct effects on physical conditions in the project vicinity.

Sea Level

Status and Trends

One of the major areas of concern related to global climate change is rising sea level. Worldwide average sea level appears to have risen about 0.4 to 0.7 foot over the past century based on data collected from tide gauges around the globe, coupled with satellite measurements taken over approximately the last 15 years (IPCC 2007). Various gauge stations along the coast of California show an increase similar to the global trends. Data specific to the San Francisco tide gauge near the Golden Gate Bridge shows that the 19-year mean tide level (the mean tide level based on 19-year data sets) has increased by approximately 0.5 foot over the past 100 years (Exhibit 3A.4-3). Rising average sea level over the past century has been attributed primarily to warming of the world's oceans and the related thermal expansion of ocean waters, and the addition of water to the world's oceans from the melting of land-based polar ice. Some researchers have attributed most of the worldwide rise to thermal expansion of water, although there is some uncertainty about the relative contributions of each cause (Munk 2002).

Effect on the Project

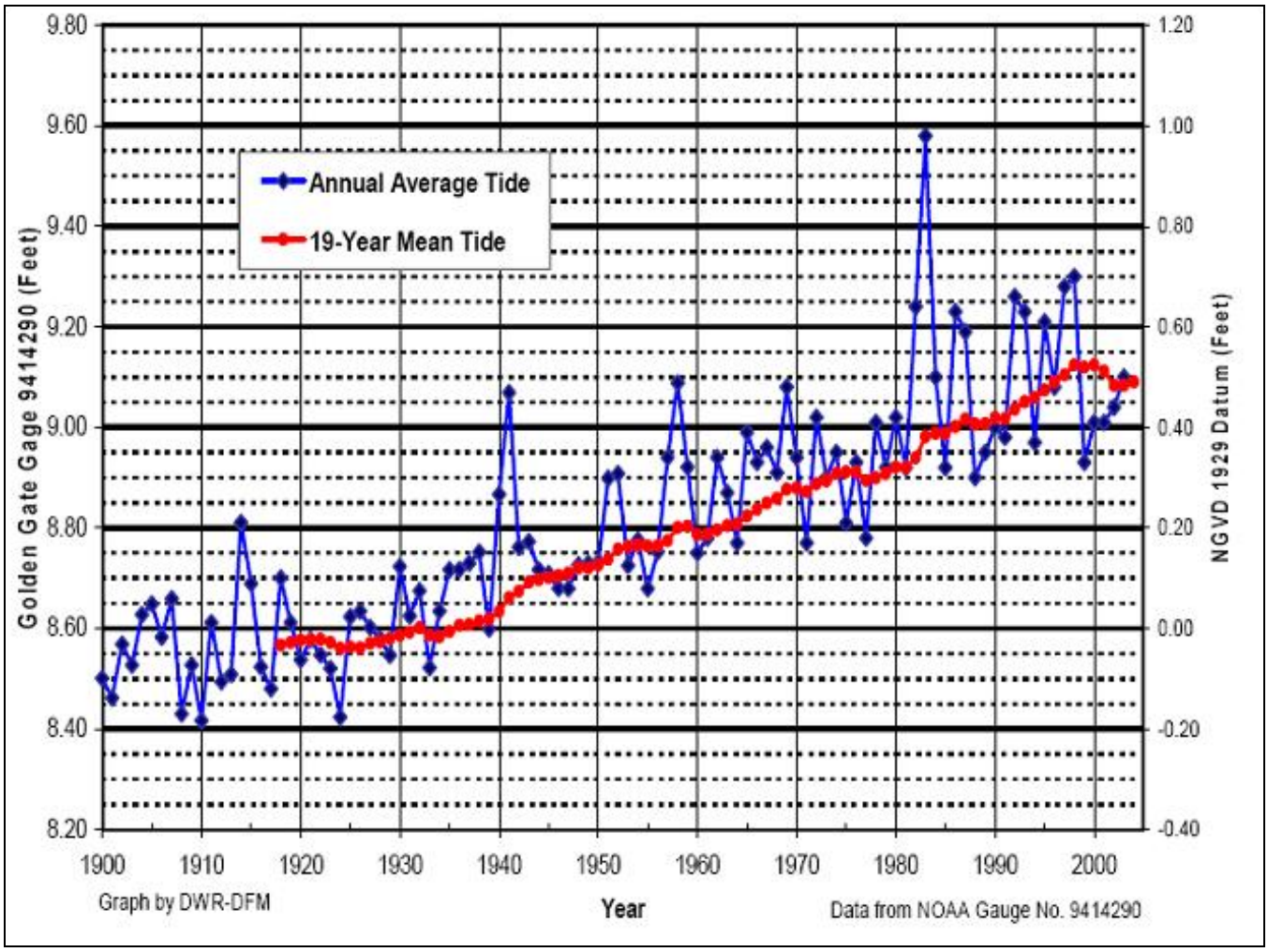
Projections

Various global climate change models have projected a rise in worldwide average sea level of 0.3 to 2.9 feet by 2100 (IPCC 2001a). Updated model results provided by the IPCC in 2007 put the range at 0.6–1.9 feet by 2099 (IPCC 2007). The ranges are narrower than in the Third Assessment Report (IPCC 2001a) mainly because of improved information about some uncertainties in the projected contributors to sea level rise (IPCC 2007).

Although these projections are on a global scale, the rate of relative sea level rise experienced at many locations along California's coast is consistent with the worldwide average rate of rise observed over the past century. Therefore, it is reasonable to expect that changes in worldwide average sea level through this century will also be experienced by California's coast (DWR 2006).

A consistent rise in sea level has been recorded worldwide over the last 100 years. Recorded rises in sea level along the California coast correlate well with the worldwide data. Based on the results of various global climate change models, sea level rise is expected to continue. Based on the consistency in past trends, the consistency of future projections, and the correlation between data collected globally and data specific to California, it is reasonably foreseeable that some amount of sea level rise will occur along the California coast over the next 100 years. Although sea level rise is expected to occur, the amount and timing of the increase is uncertain. Predictions published by the IPCC in 2007 indicate an increase in elevation in the range at 0.6–1.9 feet by 2099 (IPCC 2007).

While sea level rise induced by climate change is reasonably certain, the SPA is located far above (over 100 feet above) sea level, and thus sea level rise would not directly affect proposed land uses within the SPA.



Source: Adapted by AECOM in 2009 from DWR 2006

Graph of Annual Average Relative Sea Level and the 19-Year Running Average Sea Level at the Golden Gate Tide Gauge, California, 1900–2003 **Exhibit 3A.4-3**

Water Supply

Status and Trends

Several recent studies have shown that existing water supply systems are sensitive to climate change (Wood 1997). Potential impacts of climate change on water supply and availability could directly and indirectly affect a wide range of institutional, economic, and societal factors (Gleick 1997). Residential, industrial, and agricultural land uses all are affected by the cost and security of water supply. Much uncertainty remains, however, with respect to the overall impact of global climate change on future water supplies. For example, models that predict drier conditions (i.e., parallel climate model [PCM]) suggest decreased reservoir inflows and storage and decreased river flows, relative to current conditions. By comparison, models that predict wetter conditions (i.e., HadCM2) project increased reservoir inflows and storage, and increased river flows (Brekke et al. 2004). Both projections are equally probable based on which model is chosen for the analyses (Ibid.). Much uncertainty also exists with respect to how climate change will affect future demand on water supply (DWR 2006). Still, changes in water supply are expected to occur and many regional studies have shown that large changes in the

reliability of water yields from reservoirs could result from only small changes in inflows (Kiparsky and Gleick 2005; see also Cayan et al. 2006).

Little work has been performed on the effects of climate change on specific groundwater basins or groundwater recharge characteristics (Kiparsky and Gleick 2005). Changes in rainfall and changes in the timing of the groundwater recharge season would result in changes in recharge. Warmer temperatures could increase the period where water is on the ground by reducing soil freeze. Conversely, warmer temperatures could lead to higher evaporation or shorter rainfall seasons, which could mean that soil deficits would persist for longer time periods, shortening recharge seasons. Warmer, wetter winters would increase the amount of runoff available for groundwater recharge. This additional winter runoff, however, would be occurring at a time when some basins, particularly in Northern California, are being recharged at their maximum capacity. Reductions in spring runoff and higher evapotranspiration, on the other hand, could reduce the amount of water available for recharge. However, the specific extent to which various meteorological conditions will change and the impact of that change on groundwater are both unknown. A reduced snowpack, coupled with increased rainfall, could require a change in the operating procedures for California's existing dams and conveyance facilities (Kiparsky and Gleick 2005).

Projections

DWR's *Progress on Incorporating Climate Change into Management of California's Water Resources, Technical Memorandum Report* (2006) focused on climate change impacts on CVP and SWP operations and on the Delta. The results of that analysis suggest several impacts of climate change on overall CVP and SWP operations and deliveries. In three of the four climate scenarios simulated, CVP reservoirs north of the Delta experienced shortages during droughts. DWR (2006) recommends that future studies examine operational changes that could avoid these shortages. At present, DWR concludes, it is not clear whether such operational changes would be insignificant or substantial. Changes in annual average CVP deliveries south of the Delta ranged from increases of about 2.5% for the wetter scenario to decreases of up to 10% for drier scenarios. Future studies will have to address how shortages north of the Delta could affect CVP deliveries south of the Delta. Carryover storage (i.e., water from one year stored into the next year) for the CVP was negatively affected in the drier scenarios and beneficially affected (slightly increased) in the wetter scenario.

The modeling conducted by Gleick and Chalecki (1999) on the Sacramento River Basin strongly suggests that annual levels of water moving through the Sacramento River watershed would increase. While annual volumes of water would increase, summer flows would decrease as a result of projected reductions in snowpack and earlier seasonal melting. Absent any intervention this would result in lower summer surface water flows and higher winter flows. Groundwater recharge may be adversely impacted by lower summer flows, without a commensurate increase because winter recharge rates are already at maximum. Upstream water management structures such as reservoirs could mitigate this by retaining greater winter flows to be released during the summer, thus making for a more constant level of surface water in the Sacramento. The need for adaptive changes in water management infrastructure use suggested by Gleick and Chalecki is confirmed by more recent research.

Tanaka et al. (2006) explored the ability of California's water supply system to adapt to long-term climatic and demographic changes using the California Value Integrated Network (CALVIN), a statewide economic-engineering optimization model of water supply management. The results show agricultural water users in the Central Valley are the most sensitive to climate change, particularly under the driest and warmest scenario (i.e., PCM 2100) predicting a 37% reduction of Central Valley agricultural water deliveries and a rise in Central Valley water scarcity costs by $1.7 billion. Although the results of the study are only preliminary, they suggest that California's water supply system appears "physically capable of adapting to significant changes in climate and population, albeit at a significant cost" (Tanaka et al. 2006). Such adaptation would entail changes in California's groundwater storage capacity, water transfers, and adoption of new technology.

VanRheenen et al. (2004) studied the potential effects of climate change on the hydrology and water resources of the Sacramento-San Joaquin River Basin using five PCM scenarios. The study concluded that most mitigation alternatives examined satisfied only 87 to 96% of environmental targets in the Sacramento system, and less than 80% in the San Joaquin system. Therefore, system infrastructure modifications and improvements could be necessary to accommodate the volumetric and temporal shifts in flows predicted to occur with future climates in the Sacramento-San Joaquin River Basins.

Zhu et al. (2005) studied climate warming impacts on water availability derived from modeled climate and warming streamflow estimates for six index California basins and distributed statewide temperature shift and precipitations changes for 12 climate scenarios. The index basins provide broad information for spatial estimates of the overall response of California's water supply and the potential range of impacts. The results identify a statewide trend of increased winter and spring runoff and decreased summer runoff, as previously indicated by Gleick and Chalecki (1999). Approximate changes in water availability are estimated for each scenario, though without operations modeling. Even most scenarios with increased precipitation result in a decrease in available water. This result is due to the inability of current storage systems to catch increased winter streamflow to offset reduced summer runoff.

Medellin et al. (2006) used the CALVIN model under a high emissions "worst case" scenario, called a dry-warming scenario. The study found that climate change would reduce water deliveries by 17% in 2050. The reduction in deliveries was not equally distributed, however, between urban and agricultural areas. Agricultural areas would see their water deliveries drop by 24% while urban areas would only see a reduction of 1%. There was also a geographic difference: urban scarcity was almost absent outside of southern California.

In 2003, CEC's Public Interest Energy Research (PIER) program established the California Climate Change Center (CCCC) to conduct climate change research relevant to the state. Executive Order S-3-05 called for the California Environmental Protection Agency (CalEPA) to prepare biennial science reports on the potential impact of continued climate change on certain sectors of California's economy. CalEPA entrusted PIER and its CCCC to lead this effort. The climate change analysis contained in its first biennial science report concluded that major changes in water management and allocation systems could be required in order to adapt to the change. As less winter precipitation falls as snow, and more as rain, water managers would have to balance the need to construct reservoirs for water supply with the need to maintain reservoir storage for winter flood control. Additional storage could be developed, but at high environmental and economic costs.

Lund et al. (2003) examined the effects of a range of climate warming estimates on the long-term performance and management of California's water system. The study estimated changes in California's water availability, including effects of forecasted changes in 2100 urban and agricultural water demands using a modified version of the CALVIN model. The main conclusions are summarized below.

- A broad range of climate warming scenarios show significant increase in wet season flows and significant decreases in spring snowmelt. The magnitude of climate change effects on water supplies is comparable to water demand increases from population growth in 21st century.

- California's water system would be able to adapt to the severe population growth and climate change modeled. This adaptation would be costly, but it would not threaten the fundamental prosperity of the state, although it could have major impacts on the agricultural sector. The water management costs represent only a small proportion of California's current economy.

- Under the driest climate warming scenarios, Central Valley agricultural users could be especially vulnerable to climate change. Wetter hydrologies could increase water availability for these users. The agricultural community would not be compensated for much of its loss under the dry scenario. The balance of climate change effects on agricultural yield and water use is unclear. While higher temperatures could increase

evapotranspiration, longer growing seasons and higher carbon dioxide concentrations could increase crop yield.

- Population growth is expected to be more problematic than climate change in Southern California. Population growth, conveyance limits on imports, and high economic value of water in Southern California, could lead to high use of wastewater reuse and substantial use of seawater desalination along the coast. Due to the integrated nature of water management and competition for water resources this could impact water supply in the Sacramento region.

- Under some wet warming climate scenarios, flooding problems could be substantial. In certain cases, major expansions of downstream floodways and alterations in floodplain land use could become desirable.

- California's water system could economically adapt to all the climate warming scenarios examined in the study. New technologies for water supply, treatment, and water use efficiency, implementation of water transfers and conjunctive use, coordinated operation of reservoirs, improved flow forecasting, and the cooperation of local regional, state and Federal government can help California adapt to population growth and global climate change. However, if these strategies are implemented, the costs of water management are expected to be high and there is likely to be less "slack" in the system compared to current operations and expectations.

Effect on the Project

As described by the projections above, overall, climate change is expected to have a greater effect in Southern California and on agricultural users than urban users in the Central Valley, which includes both the San Joaquin and Sacramento Valleys. For example, for 2020 conditions, where optimization is allowed (i.e., using the CALVIN model), scarcity is not expected to be an issue in the Sacramento Valley for both urban and agricultural users, and generally not an issue for urban users in the San Joaquin and Tulare Basins. Rather, most water scarcity will be felt by agricultural users in Southern California. However, it is expected that Southern California urban users, especially Coachella urban users, will also experience some scarcity. By the year 2050, urban water scarcity there will be almost no water scarcity north of the Tehachapi Mountains, although agricultural water scarcity could increase in the Sacramento Valley to about 2% (Medellin et al. 2006; see also Tanaka et al. 2006 and Lund et al. 2003 for further discussion of global climate change impacts on agricultural uses).

Based on the conclusions of current literature regarding California's ability to adapt to global climate change, it is reasonably expected that over time, the state's water system will be modified to be able to address the projected climate changes, e.g., under dry and/or warm climate scenarios (DWR 2006). Although coping with climate change effects on California's water supply could come at a considerable cost, based on a thorough investigation of the issue, it is reasonably expected that statewide implementation of some, if not several, of the wide variety of adaptation measures available to the state, will likely enable California's water system to reliably meet future water demands. For example, traditional water supply reservoir operations may be used, in conjunction with other adaptive actions, to offset the impacts of global warming on water supply (Medellin et al. 2006; see also Tanaka et al. 2006 and Lund et al. 2003). Other adaptive measures include better urban and agricultural water use efficiency practices, conjunctive use of surface and ground waters, desalination, and water markets and portfolios (Medellin et al. 2006; see also Lund et al. 2003, Tanaka et al. 2006). More costly statewide adaptation measures could include construction of new reservoirs and enhancements to the state's levee system (CEC 2003).
As described by Medellin et al. 2006, with adaptation to the climate, the water deliveries to urban centers are expected to decrease by only 1%, with Southern California shouldering the brunt of this decrease.

Given these projections it is difficult to scale regional and state trends down to predict specific impacts in the project vicinity. The project would rely upon surface water rights to the Sacramento River with groundwater pumping within the City of Rancho Cordova area providing backup for dry and critically dry years. As described above for the discussions of snowpack and runoff, the effect of climate change on the Sacrament River watershed

remains uncertain. Different models suggest either an increase or decrease in precipitation. While an increase in precipitation may increase potential water supply, existing storage facilities may need to be expanded to effectively capture and transfer such supplies. Additionally, an increase in precipitation may not effectively increase groundwater recharge if the increase occurs during seasons when aquifers are recharging at maximum capacity. Because there is uncertainty with respect to impacts of climate change on future water availability in California, in terms of whether and where effects will occur, and the timing and severity of any such potential effect, conclusions regarding significance would therefore be too speculative for meaningful consideration.

Water Quality

Status and Trends

Water quality depends on a wide range of interacting variables, such as water temperatures, flows, runoff rates and timing, waste discharge loads, and the ability of watersheds to assimilate wastes and pollutants. Surface water quality in the Sacramento Valley has experienced substantial adverse affects from human activities, including contaminant inputs from urban, industrial, and agricultural sources; and increased temperature from removal of shading vegetation. Historic activities such as gold mining in the nineteenth century created long-term impacts on regional water quality by contributing massive quantities of silt, minerals, and, notably, mercury that has settled into river bottom sediments.

Projections

Climate change could alter numerous water quality parameters in a variety of ways. Higher winter flows could reduce pollutant concentrations (through dilution) or increase erosion of land surfaces and stream channels, leading to higher sediment, chemical, and nutrient loads in rivers (DWR 2006). Increases in water flows could also decrease chemical reactions in streams and lakes, reduce the flushing time for contaminants, and increase export of pollutants to coastal areas (Jacoby 1990, Mulholland et al. 1997, Schindler 1997). Decreased summer flows can exacerbate increases in temperature, increase the concentration of pollutants, increase flushing times, and increase salinity (Schindler 1997, Mulholland et al. 1997). Decreased surface-water flows can also reduce nonpoint-source runoff (Mulholland et al. 1997). Increased water temperatures can enhance the toxicity of metals in aquatic ecosystems (Moore et al. 1997). Increases in water temperature alone are often likely to lead to adverse changes in water quality, even in the absence of changes in precipitation (Kiparsky and Gleick 2005).

A review of potential impacts of climate change on water quality concludes that significant changes in water quality are known to occur as a direct result of short-term changes in climate (Murdoch, Baron, and Miller 2000). The review notes that water quality in ecological transition zones and areas of natural climate extremes is vulnerable to climate changes that increase temperatures or change the variability of precipitation. However, it is also argued that changes in land and resource use will have comparable or even greater impacts on water quality than changes in temperature and precipitation. A separate study concluded that changes in land use resulting from climatic changes, together with technical and regulatory actions to protect water quality, can be critical to future water conditions (Kiparsky and Gleick 2005). The net effect on water quality for rivers, lakes, and groundwater in the future is dependent not just on how climatic conditions might change, but also on a wide range of other human actions and management decisions. The most recent studies identify the likelihood that decreased runoff will interact with higher stream temperatures to exacerbate decreases in water quality (Backlund et. al. 2008:8).

Effect on the Project

Although there are various ways in which climate change could affect water quality, effects could be positive or negative depending on a variety of conditions. In addition, current water quality conditions in regional surface waters depend in large part on human activities, and this would continue into the future. The effects of climate change on water quality could be alleviated by, exacerbated by, or overwhelmed by effects directly related to localized human actions. Given the uncertainty associated with projecting the type and extent of changes in water quality attributable to climate change, including trying to project human activities, this potential climate change

effect is too speculative to draw a conclusion regarding the significance of any direct effect on physical conditions in the project vicinity.

Agriculture

Status and Trends

Numerous studies indicate that climate change may have a profound effect on agriculture in California. The different climate change forecasting models predict a variety of direct and indirect effects to the sector's agronomic and economic conditions (Tanaka et al. 2006; Howitt, Tauber, and Pienaar 2003). The degree to which climate change will affect agriculture depends on a variety of factors. While there remains uncertainty about what form of climate change will occur in California, the majority of research on the subject has focused on the likelihood that a climate warming pattern will occur (DWR 2006, Lund et al. 2003). While both dry-warm or wet-warm forms of climate warming would affect Californian agriculture, dry-warm climate scenarios are expected to be the most problematic (Tanaka et al. 2006). Dry-warm climate scenarios are expected to affect agriculture at both statewide and regional scales, with the most pronounced effects occurring in the Central Valley (Zhu et al. 2006).

Potential effects include reductions in water supply and water supply reliability, increased evapotranspiration, changes in growing season, and altered crop choices (DWR 2006). As discussed in the previous sections, substantial changes may occur in terms of water supply. As a primary consumer of surface and ground water, the agricultural sector will be faced with significant challenges in the event of supply reductions. Higher levels of evapotranspiration would result from the increased temperatures and decreased humidity of a dry-warm climate scenario (Hildalgo, Cayan, and Dettinger 2005). In turn, evapotranspiration would cause increases in water demand, salt accumulation on plants, soil salinity, and additional water use for reducing saline soils (DWR 2006). Such effects could reduce productivity and create adverse economic repercussions for farmers and ranchers in the State (DWR 2006). Changes to the growing season and altered crop choices may negatively or positively affect productivity, water supply, and profitability, depending on the adaptations farmers choose (Tanaka et al. 2006). For example, the viability and profitability of different crops may change as a result of altered climate, thus changing land use patterns and water demands associated with cover crops, and total revenues.

Projections

Tanaka et al. (2006) demonstrates that agricultural water supplies in the Central Valley are expected to be affected by climate change. In the driest, warmest climate scenario (PCM2100), Central Valley water users would be adversely affected and agricultural water deliveries could be expected to decrease by approximately 24% and water scarcity costs would be $1.7 billion. (Tanaka et al. 2006).

Water scarcity is expected to increase due to both the effects of global climate change and by the effects of population growth and associated increased water consumption. One model (CALVIN) used a dry and warm form of climate change and 2050 population projections. This model determined that water scarcity north of the Tehachapi Mountains (San Joaquin and Sacramento Valleys) was demonstrated to be predominately driven by climate change effects. (Tanaka et al. 2006, Zhu et al. 2006.)

A 15% increase in land fallowing is expected to occur under a dry and warm climate scenario. Land fallowing would reduce agricultural productivity and affect the agricultural economy as well as the rural support economies. Financial implications for individual farm owners would depend on whether compensation was provided for land becoming fallow (Howitt, Tauber, and Pienaar 2003; Tanaka et al. 2006).

Most year 2100 models indicate increased market water transfers from agriculture to urban users (Tanaka et al. 2006). Sector productivity could be maintained if water transfers were balanced with irrigation efficiency improvements.

Though a dry-warm climate scenario would reduce agricultural water deliveries (24% statewide and 26% in the San Joaquin Valley), models demonstrate that agricultural income will only be reduced by 6% and irrigated lands will only be reduced by 15%. It is expected that farmers will adopt changes in crop mix, cropping systems, and irrigation technology. These adaptations are likely to reduce the effect of reduced water deliveries on agriculture (Tanaka et al. 2006).

Increased evapotranspiration rates could have a considerable effect on agricultural water demand in the State (DWR 2006). The International Panel on Climate Change expects a 3 degree Celsius increase in temperature over the next century (IPCC 2007). Research demonstrates that such an increase in temperature will likely result in a 5% increase in plant transpiration, assuming no change in solar radiation (cloudiness) levels and other related variables including wind, humidity, and minimum temperature (Hildalgo, Cayan, and Dettinger 2005). Therefore, evapotranspiration alone could create a 5% increase in agricultural water consumption over the next 100 years or a 0.5% increase per decade. Projected increases in carbon dioxide concentrations are expected to increase plant growth by up to 20% and in turn lead to increased evapotranspiration (Long et al. 2004). A caveat to this is that increased atmospheric carbon dioxide concentrations may work to decrease plant stomatal transpiration rates and thus reduce overall evapotranspiration rates (Ibid).

Effect on the Project

The Proposed Project and action alternatives, with the exception of the No Project Alternative would not contain any agricultural uses. For this reason it is assumed that future climate change impacts on agriculture would not be directly relevant to the project. While the SPA contains grazing land that would be converted to urban uses, this land is not designated as Important Farmland, and therefore mitigation is not required. Because no comparable lands would be protected by conservation easements as mitigation, the impact of climate change on agricultural land uses would not be relevant to the efficacy of mitigation for project impacts. With regard to the No Project Alternative, while effects may occur, adaptation is also expected to allow farmers and ranchers to minimize any potential negative effect on agricultural incomes. Again, the SPA is used for grazing; the site does not contain Important Farmland. Because the potential effects of global climate change on agricultural production are highly speculative at this time, it is not possible to reach a meaningful conclusion regarding significance related to the No Project Alternative.

CONCLUSION

Seven general categories of potential effects of climate change were evaluated in this section:

- increased temperature;
- precipitation volume, type, and intensity;
- runoff volume and timing;
- water supply;
- sea level rise;
- water quality; and
- agriculture.

This analysis concludes that (1) either the climate change effect would not have the potential to substantially affect the project vicinity, or (2) because of significant uncertainty in projecting future conditions related to the climate change effect, it would be too speculative to reach a meaningful conclusion regarding the significance of any reasonably foreseeable direct impact on physical conditions in the project vicinity. Therefore, impacts are too speculative for meaningful consideration.

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This section was prepared by RMC Water and Environment.

3B.4 CLIMATE CHANGE – WATER

3B.4.1 AFFECTED ENVIRONMENT

GREENHOUSE GASES

Some gases in the atmosphere affect the Earth's heat balance by absorbing infrared radiation. These layers of gas in the atmosphere can prevent the escape of heat much the same as glass in a greenhouse. Thus, climate change is often referred to as the "greenhouse effect." The gases most responsible for climate change are carbon dioxide (CO_2) and methane. Other greenhouse gases (GHG) include, but are not limited to nitrous oxide, sulfur hexafluoride, hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons. It is becoming more widely accepted that continued increases in greenhouse gases will contribute to climate change, although there is uncertainty concerning the magnitude and time of the trend.

Energy-related CO_2 emissions, resulting from petroleum and natural gas, represent 82% of total United States anthropogenic GHG emissions. Another GHG, methane, comes from landfills, coal mines, oil and gas operations, and agriculture; it represents 9% of total emissions. Nitrous oxide totals about 5% of United States emissions, and is emitted from burning fossil fuels and through the use of certain fertilizers and industrial processes. Anthropogenic gases make up about 2% of United States emissions that are released as byproducts of industrial processes and other minor sources (http://www.eia.doe.gov/oiaf/1605/ggccebro/chapter1.html).

GLOBAL CLIMATE CHANGE EFFECTS ON WATER RESOURCES

In July 2006, the California Department of Water Resources (DWR) released the report, "Progress on Incorporating Climate Change into Management of California's Water Resources" (DWR 2006). This report responds to the Governor's Executive Order S-3-05 requiring biennial reports on climate change impacts to various areas, including state water resources. DWR has concluded that future hydrologic conditions in California will likely change when compared to the patterns observed over the last century (DWR 2006). Although a full understanding of water resources changes associated with climate change is not yet possible, there is a general consensus among recent investigations that the following effects are likely to occur within the next 50 to 100 years: (1) increases in air temperature; (2) reductions in Sierra Nevada snowpack; (3) earlier snowmelt; and, (4) a rise in sea level (DWR 2006; California Energy Commission [CEC] 2005). These changes could have significant implications for water resources within California.

A major portion of California's annual water storage is held within the Sierra Nevada snowpack. At present, snowmelt provides most of the average 14 million acre-feet of runoff water from the Sierra Nevada during April–July period. DWR estimates that, by 2060, April–July runoff could be reduced by 36% (DWR 2006). These changes, along with anticipated changes in the timing of snowfall, could reduce reservoir refilling during late spring and early summer. In addition, computer models estimate that global climate change could lead to a sea level rise of 0.6 to 1.9 feet over the next 100 years (Intergovernmental Panel on Climate Change [IPCC] 2007). This rise in sea level would increase the frequency of existing 100-year peak high tides in the western Delta to about once in ten years. Salt water intrusion from the ocean into the Delta could also increase, potentially resulting in degradation of freshwater supplies pumped from the Delta.

Further discussion of existing hydrology with the "Water" Study Area is provided in Section 3B.9, "Hydrology and Water Quality - Water."

3B.4.2 REGULATORY FRAMEWORK

The regulatory framework relevant to analysis of climate change impacts is the same for the Off-site Water Facilities as for the Land Use portion of the project. Please refer to Section 3A.4.2 for a discussion of the regulatory framework pertaining to climate change analysis.

3B.4.3 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. These thresholds also encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. For the purposes of this analysis, climate change impacts would be considered significant if construction and operation of the Off-site Water Facilities would:

- generate greenhouse gas emissions, either directly or indirectly, that may have a significant impacts on the environment; or
- conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

SIGNIFICANCE CRITERIA FOR EVALUATING CLIMATE CHANGE

There are no formally adopted thresholds for measuring the significance of a project's impact on the creation of GHG emissions or the project's cumulative contribution to global climate change. For a detailed discussion of significance thresholds for GHG emissions, please refer to Section 3A.4.3 in Section 3A.4, "Climate Change – Land."

ANALYSIS METHODOLOGY

The climate change analysis presented in this section is comprehensive in that it accounts for direct and indirect sources of GHG emissions resulting from the collective construction and operation of Off-site Water Facility Alternatives. The sources include, indirect emissions of GHGs resulting from the new electrical load requirements for conveyance pumping from the Freeport Project to the Folsom SPA, indirect emissions from new electrical load requirements for local water distribution and treatment facilities, and direct GHG emissions from construction- and operational-related vehicle trips. Indirect emissions associated with energy consumption for off-site conveyance pumping were estimated by converting the pump station's horsepower requirements to kilowatt-hours and multiplying these values by Utility Specific Verified Electricity CO_2 Emission Factors provided in Table G.5 and G.6 of the Local Government Operations Protocol, September 2008. Electrical consumption factors from Exhibit 3-10, Electrical Consumption for Surface Water Treatment Plants (ICF International 2008, Local government Operations Protocol 2008) were used to obtain estimates of electrical demand for water treatment and local distribution pumping. The estimates were then subsequently converted to pounds of CO_2 per day using Utility Specific Verified Electricity CO_2 Emission Factors.

Direct emissions of CO_2 from mobile sources form construction and operation were quantified using URBEMIS, 2007 and SMAQMD's Roadway Construction Model and then converted to metric tons. Because the use of back-up generators would be infrequent and secondary to emissions generated during electrical generations, these emissions were not quantified as part of the GHG analysis. Similarly, the City did not attempt to quantify the "bound" energy used in the production and manufacturing of durable goods (e.g., electrical panels) and raw materials (e.g., steel) used in the construction of the Off-site Water Facility Alternatives.

IMPACT ANALYSIS

Impacts that would occur under each of the Off-site Water Facility Alternatives are identified as follows:

NCP (No USACE Permit Alternative)

PA (Proposed Off-site Water Facility Alternative)

1 (Off-site Water Facility Alternative 1 – Raw Water Conveyance – Gerber/Grant Line Road Alignment and White Rock WTP)

1A (Off-site Water Facility Alternative 1A Raw Water Conveyance – Gerber/Grant Line Road Alignment Variation and White Rock WTP)

2 (Off-site Water Facility Alternative 2 Treated Water Conveyance – Douglas Road Alignment and Vineyard SWTP)

2A (Off-site Water Facility Alternative 2A Treated Water Conveyance – Excelsior Road Alignment Variation and Vineyard SWTP)

2B (Off-site Water Facility Alternative 2B Treated Water Conveyance – North Douglas Tanks Variation and Vineyard SWTP)

3 (Off-site Water Facility Alternative 3 Raw Water Conveyance – Excelsior Road Alignment and White Rock WTP)

3A (Off-site Water Facility Alternative 3A Raw Water Conveyance – Excelsior Road Alignment Variation and White Rock WTP)

4 (Off-site Water Facility Alternative 4 Raw Water Conveyance – Easton Valley Parkway Alignment and Folsom Boulevard WTP)

4A (Off-site Water Facility Alternative 4A Raw Water Conveyance – Easton Valley Parkway Alignment Variation and Folsom Boulevard WTP).

The impacts for each alternative are compared relative to the PA at the end of each impact conclusion (i.e., similar, greater, lesser).

IMPACT 3B.4-1 Generation of Short- and Long-term Increases in Greenhouse Gases. *Construction and operation of the Off-site Water Facility Alternatives would result in a net increase in greenhouse gas emissions, which would contribute considerably to cumulative GHG emissions.*

NCP, PA, 1, 1A, 3, 3A, 4, and 4A

The potential effect of GHG emissions on global climate change is an emerging issue that warrants discussion under CEQA. Unlike the pollutants discussed previously that may have regional or local adverse effects, GHGs have the potential to contribute to global changes in the environment. In addition, GHG emissions do not directly produce a localized impact, but may cause an indirect impact if the local climate is adversely changed by its cumulative contribution to a change in global climate. Individual public infrastructure projects contribute relatively small amounts of GHGs that when added to all other GHG producing activities around the world result in increases in these emissions that have led many to conclude that these emissions are contributing to global changes in climate. However, at the time of preparation of this EIR/EIS, ARB has not adopted a formal threshold for what would constitute a cumulatively considerable increase in GHG for individual public infrastructure projects.

In 2006, the California State Legislature adopted AB 32, the California Global Warming Solutions Act of 2006. The impacts of global climate change described in AB 32 include changing sea levels, changes in snow pack and availability of potable water, changes in storm flows and flood inundation zones, and other impacts.

At minimum, the Off-site Water Facilities improvements would be required to comply with Title 24 energy efficiency standards (2007), to the extent applicable; however, the extent to which these standards would help the individual improvements in achieving the goals outlined in AB 32 is unknown. In response to this uncertainty and to provide clarification to lead agencies for assessing GHG impacts, ARB and local air districts have began developing thresholds of significance for common project types that, collectively, are responsible for substantial GHG emissions. As part of updating its CEQA Guidelines, BAAQMD has proposed a threshold of 10,000 metric tons of CO_2 equivalent per year ($MTCO_2e/yr$) for operational increases in GHG emissions from stationary sources and a separate threshold of 1,100 $MTCO_2e/yr$ for operational sources other than stationary sources (i.e., mobile vehicle trips). However, no construction threshold is currently proposed by BAAQMD. Nevertheless, at the State-level, ARB is considering the inclusion of mandatory performance standards for construction-related GHGs.

The Off-site Water Facilities would emit GHGs during construction from combustion of fuels in worker vehicles and material product delivery and removal accessing the site as well as the off-road construction equipment. Off- and on-road construction GHG emissions were calculated using URBEMIS2007 for the WTP and SMAQMD's Roadway Construction Model (2007) for linear pipeline construction. These models cover the CO_2 emission estimates for the readily quantifiable construction sources, but do not cover the quantities of indirect CO_2 emissions that go into the manufacturing/processing of steel pipe, construction aggregate, etc. In the absence of an significance threshold for construction-related CO_2-emissions, but in acknowledging that the State is considering mandatory performance measures for construction, without the inclusion of any performance measures for construction, the resulting CO_2 emissions would be greater than if no performance measures were incorporated. Based on these considerations, short-term emissions of CO_2 resulting from the construction of the Off-site Water Facility Alternatives could result **potentially significant direct** and **indirect** impacts. ***[similar]***

Following construction, the operation of the Off-site Water Facilities is expected to contribute to regional GHG emissions over the long-term. The primary sources of GHG emissions would be associated with daily vehicle trips to and from the WTP along with indirect emissions from new electrical loads associated with the booster pump station, water treatment operations, and distribution of treated water to users within the Folsom SPA. Based on the methodology employed in Section 3A.2.3, quantification of GHG for the Off-site Water Facilities was focused to the CO_2 outputs generated for off-site conveyance pumping, water treatment (On- or Off-site), distribution pumping within the Folsom SPA, and mobile sources. To estimate emissions generated from these sources, emission factors derived from the California Climate Action Registry Power/Utility Protocol Public Reports (as of September 2008)[1] where used in combination with the base electrical usage requirements for the booster pumping station, 1,700 HP, and 1,406 kWh/MG for treatment and local distribution pumping (including those facilities within the Folsom SPA) (ICF International 2008). Assuming the most-conservative operational scenario in which the booster pumping station is operated 24 hours a day, 7 days a week, at an average of 6.5 mgd, Table 3B.2-3 provides the GHG emissions in $MTCO_2e$/year for each of the Off-site Water Facility Alternatives. As shown in Table 3B.2-3, the GHG estimates calculated for each of the Off-site Water Facility Alternatives is substantially higher than the applied threshold for stationary sources as proposed by BAAQMD and, therefore, this **indirect** impact is considered **significant**. As shown in Table 3B.2-3, non-stationary sources of GHGs would not be significant. ***[similar]***

[1] Offsite electricity generation emissions are based on SMUD's utility specific verified electricity CO2 Emissions factors for 2006. These calculations, presented in Appendix M-VI, are estimates of expected GHG emissions from carbon dioxide, methane, and nitrous oxide generation, the combination of which are representative of CO2 equivalent emissions.

Table 3B.4-1
Off-site Water Facility Operational Greenhouse Gas Emission Estimates

Off-site Water Facility Alternative	Emission Source	MT CO_2e/yr	Total	BAAQMD Thresholds	Significant?
No USACE Permit Alternative, Proposed Off-site Water Facility Alternative, and Alternatives 1, 1A, 3, 3A, 4, and 4A	Construction (2011)	<1,296		--[1]	No
	Construction (2012)	<1,807			
	Off-site Pumping	2,748	**22,725**	10,000	Yes
	Local Treatment and Distribution	19,978			
	Mobile Sources	759	759	1,100	No
Off-site Water Facility Alternatives 2 and 2A	Construction (2011)	<931		--[1]	No
	Construction (2012)	<930			
	Off-site Pumping	2,667	**22,504**	10,000	Yes
	Local Treatment and Distribution	19,837			
	Mobile Sources	0	0	1,100	No
Off-site Water Facility Alternative 2B	Construction (2011)	666		--[1]	No
	Construction (2012)	666			
	Off-site Pumping	1,778	**21,615**	10,000	Yes
	Local Treatment and Distribution	19,837			
	Mobile Sources	0	0	1,100	No

Notes:
MT CO_2e/yr = metric tones of carbon dioxide equivalent per year.
Appendix M-VI provides additional detail regarding assumptions and emission factors used in the analysis.
[1] No significance threshold is proposed by BAAQMD for construction-related GHG emissions; however, to enable for evaluation of construction-related mobile source emissions, a threshold of 1,100 MT CO_2e/yr has been used.
Source: RMC 2010, ICF International 2008, URBEMIS 2007, Local Government Operations Protocol 2008

Given the overwhelming scope of global climate change, it is not anticipated that a single public infrastructure project would have an individually discernable effect on global climate change (e.g., that any increase in global temperature or rise in sea level could be attributed to the emissions resulting from one single development project). Rather, it is more appropriate to conclude that the GHG emissions generated by the Off-site Water Facilities would combine with emissions across the state, nation, and globe to cumulatively contribute to global climate change. Based on the nature and size of the Off-site Water Facilities components, without mitigation, the construction and operation of the Off-site Water Facilities could contribute to the State's inability to reach the emission reduction limits/standards set forth by the State of California by Executive Order S-3-05 and AB 32. For these reasons, the construction and operation of the Off-site Water Facility Alternatives could result in a substantial contribution to global climate change and the **direct** and **indirect** impacts are considered **potentially significant**. ***[Similar]***

Mitigation Measure 3B.4-1a: Implement GHG Reduction Measures during Construction.

The bid specifications for construction of the Off-site Water Facilities shall require that bidders demonstrate how they will comply with each of the following measures during all construction and demolition activities:

1) Construction vehicles and equipment will be properly maintained at all times in accordance with manufacturer's specifications, including proper tuning and timing of engines. Equipment maintenance records and equipment design specification data sheets shall be kept on-site during construction and demolition activities and subject to inspection by the SMAQMD.

2) Operators will turn off all construction vehicles and equipment and all delivery vehicles when not in use, and not allow idling for more than 5 minutes or for such other more restrictive time as may be required in law or regulation.

3) On-site construction vehicles and equipment will use ARB-certified biodiesel fuel if available (a minimum of B20, or 20 percent of biodiesel) except for those with warranties that would be voided if B20 biodiesel fuel were used. Prior to issuance of grading or demolition permits, the contractor shall provide documentation to the City that verifies whether any equipment is exempt; that a biodiesel supply has been secured; and that the construction contractor is aware that the use of biodiesel is required.

4) A City-approved Solid Waste Diversion and Recycling Plan (or such other documentation to the satisfaction of the City) will be in place for the Off-site Water Facilities that demonstrates the diversion from landfills and recycling of all nonhazardous, salvageable and re-useable wood, metal, plastic and paper products during construction and demolition activities. The Plan or other documentation shall include the name of the waste hauler, their assumed destination for all waste and recycled materials, and the procedures that will be followed to ensure implementation of this measure.

Implementation: City of Folsom Utilities Department

Timing: Prior to the approval of grading plans and building permits for all off-site water facilities.

Enforcement:

1. For improvements that would be located within the City of Folsom: City of Folsom Community Development Department and SMAQMD.

2. For improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department and SMAQMD.

3. For improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department and SMAQMD.

Mitigation Measure 3B.4-1b: Prepare and Implement an Off-site Water Facilities Climate Action Plan.

Prior to operation, the City shall have in place a Off-site Water Facilities Climate Action Plan and Greenhouse Reduction Strategy (Plan) that has been adopted by the City following an opportunity for review and recommendation by the SMAQMD. At a minimum, the Plan shall include:

- **Designation of Person Responsible for Implementation.** The Plan shall designate the name and contact information of the person(s) responsible for ensuring continuous and on-going implementation of the Plan.

- **GHG Inventory and Reduction Target.** The City shall prepare a complete GHG Inventory for the Off-site Water Facilities components within one year following occupancy and a GHG reduction target based on State guidance.

- **Off-site Water Facilities Design Features.** The Off-site Water Facilities shall include design features to reduce operational GHG emissions, as well as an estimate of the reduction in GHG emissions that is expected to result from each facility. Initial measures that may be considered include, but are not limited to:

    - Design all conditioned occupancies with "cool roofs" using products certified by the Cool Roof Rating Council, and other exposed roof surfaces coated with "cool paints";

    - Design all conditioned occupancies to take advantage of shade through the planting of deciduous canopy-type trees and/or prevailing winds to reduce energy use;

    - Make maximum use of EnergyStar-qualified energy efficient appliances, heating and cooling systems, office equipment and lighting products;

    - Install a photovoltaic array (solar panels) or other source of renewable energy generation on-site, or otherwise acquire energy that has been generated by renewable sources to meet a portion of the electricity needs of the Off-site Water Facilities;

    - In an effort to reduce GHG emissions from transportation sources, the bid specifications for the Off-site Water Facilities should require that bidders demonstrate that they have given preference to local sources of building materials or offer evidence to support why such local sources have not been used.

Implementation: City of Folsom Utilities Department

Timing: Prior to the approval of grading plans and building permits for all off-site water facilities.

Enforcement:

1. For improvements that would be located within the City of Folsom: City of Folsom Community Development Department and SMAQMD.

2. For improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department and SMAQMD.

3. For improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department and SMAQMD.

2, 2A, and 2B

Under the Off-site Water Facility Alternatives 2, 2A, and 2B, no WTP would be constructed. Rather, water treatment under these alternatives would be provided at the Vineyard SWTP. Consolidation of treatment processes at the Vineyard SWTP could result in the SWTP operating closer to its peak capacity and, therefore, at a higher efficiency. However, increased operations at the Vineyard SWTP would still require an increased electrical load with the operational emissions comparable to the previous alternatives over the longer term. However, with the integration of the Off-site Water Facilities into the Vineyard SWTP, these alternatives would experience a substantial decrease in the amount of bound energy used during construction. However, without the inclusion of any performance standards, **direct** and **indirect** construction and operational-related GHG impacts could be **potentially significant**. ***[Lesser]***

Further, under Off-site Water Facility Alternative 2B and with the shortened distance of the conveyance alignment (e.g., from the North Douglas Tanks), the electrical load required for new pumping facilities would be lowered to 1,765 $MTCO_2e$/year; less than the other conveyance alternatives. However, given that when this

estimate is combined with new electrical demands for treatment at the Vineyard SWTP and local distribution pumping, the total indirect GHG estimate remains substantially higher than the applied threshold, and, therefore, this **indirect** impact is considered **potentially significant**. ***[Lesser]***

Mitigation Measure: Implement Mitigation Measures 3B.4-1a and 3B.41b.

With implementation of the measures listed above, Off-Site Water Facility construction-related impacts to global climate change from GHG emissions would be reduced to the extent feasible through the inclusion of mandatory performance standards for Off-Site Water Facility construction. However, given the quantities of GHGs indirectly produced by all the Off-site Water Facility Alternatives greatly exceeds the applied operational threshold of 10,000 $MTCO_2e/yr$ for stationary sources, and the range of feasible mitigation measures available for reducing these emissions, the City does not expect that it would be able to reduce these emissions to a less-than-significant level. For this reason, this impact is considered **significant and unavoidable**.

IMPACT 3B.4-2 Effects of Climate Change on the Off-site Water Supply Facilities. *Global climate change could result in effects on water quality or water supplies proposed as part of the Off-site Water Facility Alternatives.*

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A

Effects of Climate Change on Water Quality

Global climate change could produce a rise in sea level and reduced freshwater runoff in the Sacramento River system, resulting in an increase of salt water intrusion into the Delta and potentially degrading water supplies pumped from the Delta. Although it would be speculative to estimate the specific changes in salt water intrusion or the reduced amount of freshwater runoff that might result from climate change, it is not anticipated that salt water intrusion would reach the location of the Freeport Project's intake due to its inland location. In this context, under the Off-site Water Facilities, no changes or potential impacts to operations are anticipated because of increased salt water intrusion resulting from global climate change. This **direct** impact is considered less than significant. **No indirect** impacts would occur. ***[Similar]***

In the future, greater saltwater intrusion into the Delta, combined with reduced runoff from the Sacramento and San Joaquin River systems, may require altering releases from reservoirs, including CVP reservoirs to maintain Delta water quality objectives, comply with Delta export-inflow ratio[2], or maintain water quality at Delta diversions. These effects could reduce the amount of surface water available to the City under the Off-site Water Facility Alternatives. Under these conditions, the City may be required to blend groundwater supplies with surface water to meet demands within the Folsom SPA. However, it is not possible to accurately estimate more-specific changes to water quality that would result from climate change and, therefore, these **direct** impacts as attributable to the Off-site Water Facilities are considered **less than significant**. **No indirect** impacts would occur. ***[Similar]***

Effects of Climate Change on Future Water Supply

Global climate change may ultimately affect the amount of water stored within the California Sierra Nevada snowpack, alter the amount of precipitation in the Sacramento River watershed, and increase temperatures. Because the snowpack acts as additional water storage, a reduced snowpack or reduced total precipitation may affect the amounts of water stored in reservoirs, including CVP reservoirs, the timing of reservoir releases, and

[2] The Delta export-inflow ratio restrictions limit the combined export rate of the SWP and CVP to a specified percentage of the total Delta inflow. The export-inflow ratio values are used to set a maximum export flow in the model. When D-1641 standards are specified the February value is computed based on the January eight river index, while all other months have a specific maximum EI ratio. If export-inflow ratio limits total project exports, the export capacity is shared equally between the SWP and CVP. Unused share of the export capacity by one party can be used by the other party.

the total water volumes available for spring and summer diversion and use. However, given that the City would acquire CVP contract water from a senior water rights holder and that contract water is subject only to limited potential reductions based on low- to very-low storage conditions within Shasta Reservoir, the **direct** implications of such a change would have **less-than-significant** impact on the Off-site Water Facilities. **No indirect** impacts would occur. ***[Similar]***

The increased frequency of drier conditions could also increase the demand for water transfers from entities, including NCMWC, thereby cumulatively adding to the types of effects to the Sacramento River analyzed in this section of this EIR/EIS. However, it is not possible to accurately estimate the specific changes to water supplies and the duration over which these changes may occur because of climate change. For this reason, potential **direct** and **indirect** impacts are considered **too speculative for meaningful evaluation**. ***[Unknown]***

Mitigation Measure: No mitigation measures are required.

3B.4.4 RESIDUAL SIGNIFICANT IMPACTS

Based on a quantification of the Off-site Water Facility Alternatives' energy requirements to support construction, conveyance, treatment, and local distribution operations at build-out of the Folsom Specific Plan, the Off-site Water Facility Alternatives are expected to generate substantial emissions of GHGs. Even with the application of the prescribed mitigation, the Off-site Water Facilities-related GHG emissions would not be reduced to a less-than significant level. Therefore, Impact 3B.4-1 would remain significant and unavoidable.

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3A.5 CULTURAL RESOURCES – LAND

This section contains a program-level evaluation of cultural resources. However, impacts to cultural resources would be the same under each individual development phase as under the program (entire SPA) analysis.

3A.5.1 AFFECTED ENVIRONMENT

ARCHAEOLOGICAL SETTING

The earliest well-documented entry and spread of humans into California occurred at the beginning of the Paleo-Indian Period (10,000–6,000 years Before Present [B.P.]). Social units are thought to have been small and highly mobile. Known sites have been identified within the contexts of ancient pluvial lake shores and coastlines, as evidenced by the presence of such characteristic hunting implements as fluted projectile points and chipped stone crescent forms. Prehistoric adaptations over the ensuing centuries have been identified in the archaeological record by numerous researchers working in the area since the early 1900s, as summarized by Fredrickson (1974) and Moratto (1984). Because of the Central Valley's plentiful resources and temperate climate, the valley was well populated prehistorically and served as the location for some of the more substantial village sites known in California.

Lillard et al. (1939) and others conducted numerous studies that form the core of the current state of knowledge about early archaeology of the upper Central Valley. Little has been found archaeologically that dates to the Paleo-Indian or the Lower Archaic time periods (6000–3000 B.P.); however, archaeologists have recovered a great deal of data from sites occupied by the Middle Archaic period (3000–1000 B.P.). The lack of sites from earlier periods may be because of high sedimentation rates that have left the earliest sites deeply buried and inaccessible. During the Middle Archaic Period, the broad regional patterns of foraging subsistence strategies gave way to more intensive procurement practices. Subsistence economies were more diversified, possibly including the introduction of acorn processing technology. Human populations were growing and occupying more diverse settings. Permanent villages that were occupied throughout the year were established, primarily along major waterways. The onset of status distinctions and other indicators of growing sociopolitical complexity mark the Upper Archaic Period (1000–500 B.P.). Exchange systems become more complex and formalized. Evidence of regular, sustained trade between groups was seen for the first time.

Several technological and social changes characterized the Emergent Period (1800–200 B.P.). The bow and arrow were introduced, ultimately replacing the dart and atlatl. Territorial boundaries between groups became well established. It became increasingly common that distinctions in an individual's social status could be linked to acquired wealth. Exchange of goods between groups became more regularized with more goods, including raw materials, entering into the exchange networks. In the latter portion of this period, exchange relations became highly regularized and sophisticated. The clamshell disk bead became a monetary unit for exchange, and increasing quantities of goods moved greater distances. Specialists arose to govern various aspects of production and exchange.

Three specific cultural manifestations are well represented in archaeological assemblages in the general vicinity of the SPA. These assemblages are discussed in detail in Moratto (1984) and summarized here:

The Windmiller Pattern (3,000–1,000 B.P.) of archaeological assemblages included an increased emphasis on acorn use as well as a continuation of hunting and fishing activities. Ground and polished charmstones, twined basketry, baked-clay artifacts, and worked shell and bone were hallmarks of Windmiller culture. Widely ranging trade patterns brought goods in from the Coast Range and trans-Sierran sources as well as from closer trading partners. Distinctive burial practices identified with the Windmiller Pattern also appeared in the Sierra Nevada foothills, indicating possible seasonal migration into the Sierra Nevada.

The Berkeley Pattern (1,000–500 B.P.) represented a greater reliance on acorns as a food source than was seen previously. Distinctive stone and shell artifacts distinguished this pattern from earlier or later cultural expressions. The Berkeley Pattern appears to have developed in the San Francisco Bay Area and was spread through the migration of Plains Miwok groups. The later Augustine Pattern (500 B.P. to Historic Era) may have been stimulated by the southern migration of Wintuan people from north of the Sacramento Valley. Their culture was marked by a population increase resulting from more intensive food procurement strategies, as well as by a marked change in burial practices, increased trade activities, and a well-defined ceramic technology.

ETHNOGRAPHIC SETTING

By virtue of its geographic position, the SPA lies within traditional Nisenan (sometimes referred to as the Southern Maidu) territory. The Nisenan belong to the Penutian linguistic family within which Kroeber (1925) recognized three Nisenan dialects—Northern Hill Nisenan, Southern Hill Nisenan, and Valley Nisenan. The Nisenan territory included the drainages of the Yuba, Bear, and American Rivers, and the lower drainages of the Feather River. The Nisenan ranged from the Sierra Nevada crest to nearly sea level at the Sacramento River.

Native Americans, including the Nisenan, of the western Sierra Nevada foothills lived in relatively permanent settlements, visiting the higher reaches primarily during the summer months (Moratto 1984). Permanent settlements ranged from a handful of people to several hundred, and tended to be situated near water, preferably on slightly raised ground. A major village might include dwellings, granaries, sweat houses, a headman's house, and dance house, or other ceremonial structures. The people of the villages would gather a wide variety of fruits, nuts, greens, bulbs, roots, and seeds, processing and storing many of them for winter. Fish, birds, deer, small game, and many other animals were hunted.

Sustained Nisenan contact with Euro-American groups came late in the vicinity of the SPA. Limited encounters with explorers and trappers during the late 18th and early 19th centuries left the Nisenan social, political, and economic systems relatively unaffected (Wilson and Towne 1978). Their lifeways remains largely intact until the 1833 "malaria" epidemic that swept through many Central Valley tribes including the Valley Nisenan. This was one of several major events to impact the tribe with another of the most significant being the discovery of gold and the start of the Gold Rush in 1848–1849. By 1860, disease, violence, forced relocation, and environmental destruction had greatly affected Nisenan populations and traditional cultural systems. For the remainder of the 19th century and well into the 1900s the Nisenan people were largely a marginalized population. However, during the latter decades of the 20th century the Nisenan began to revitalize their culture. Through new-found economic, political, and social influence the Nisenan once again constitute a thriving native community reinvesting in traditional lifeways and culture.

HISTORIC SETTING

Early Settlement

The earliest Euro-Americans to venture into the project region included Gabriel Moraga and a group of Spanish explorers in 1806–1808 who ventured into the vicinity of Sacramento, and fur trappers and explorers associated with the Hudson's Bay Company in the 1820s. Jedediah Smith, also with Hudson's Bay Company at the time led a group of trappers along the edge of the foothills to the American River in search of a pass over the Sierra Nevada in 1826. Kit Carson and John C. Fremont crossed the mountains near Lake Tahoe and descended to Sutter's Fort traveling along the South Fork of the American River in 1844. These expeditions, however, had little lasting impression on the landscape or the native inhabitants of the region.

Historic-era developments in the SPA vicinity appear to have been few prior to the discovery of gold at Sutter's Mill in El Dorado County and the ensuing Gold Rush. The western portion of the SPA was originally part of the *Rancho Rio de los Americanos* Mexican land grant—more than eight leagues (about 35,500 acres) granted to William Leidesdorff and purchased by Joseph L. Folsom in 1848 after Leidesdorff's death (Hoover et al.

1990:288). This grant extended from the eastern border of John Sutter's New Helvetia settlement (east of Sacramento) along the south bank of the American River to the western edge of present-day Folsom. (EDAW 2006: 6)

Gold Rush Period

During the Gold Rush of 1848–1849 and the following years, local settlement and development activity skyrocketed and rich mining districts such as Folsom, Coloma, Shingle Springs, and Placerville were heavily worked and gave rise to thriving communities still in existence today. Following the discovery of gold at Coloma in January 1848, mining camps along the American River sprang up as numerous fortune-seekers traversed the area between Sacramento and the Sierra Nevada foothills. Additional gold discoveries in spring 1848, including at Mormon Island (in the northeast corner of Sacramento County), fueled the early, rapid, and diverse settlement of the foothill region.

Early mining focused on the gravels and sands of the American River, Alder Creek, and numerous waterways within the SPA. Mining camps arose along these waterways and river bars including "Negro Bar" where African-American miners settled and started working local gravels as early as 1849. By 1850 the population of Negro Bar had reached 336 only to double again by the following year. However, flooding in 1852 forced the settlement to move east and above the river on bluffs at the site of present-day Folsom (Gudde 1975; Hoover et al. 1990:289). Just south of town was a north-south trending ridge of particularly rich gravels referred to as Willow Springs Hill at the south of which ran Alder Creek. It was along this creek and within the SPA that John P. Rhodes established his claim in 1848 after arriving in California via the "northern" route in 1846; having avoided the southern route from Salt Lake, Utah that proved longer and ultimately disastrous for the Donner-Reed party that same year. John Rhodes would eventually help organize the first relief party that rescued several members of the ill-fated group (Wilson 1986:86). Rhodes only arrived in the Folsom area in 1848 after purchasing a portion of the *Rancho Omochumnes* on the Cosumnes River with the intention of establishing a farm and ranch. However, once gold was discovered on his property he filed a claim on Alder Creek after which time the general area became known as Rhoad's Diggings (Wilson 1986:84).

Rhoad's diggings, however, suffered from only a seasonal availability of enough water to work large claims and wash the placer gold from the local gravels. Although small individual operators could profitably work their claims in the area early on, large-scale mining had to wait until an extensive water-conveyance system could be built. This finally occurred in 1851 with the establishment of the Natoma Water Company (reorganized as the Natoma Mining Company in 1852) by Amos P. Catlin, an attorney from New York and a small group of investors. Although their chief aim was to "drain the lower end of Mormon Island and the upper end thereof by means of a race on the southern side of said island" (Castenada et al. 1984:28,30) for the purposes of supplying water to claims in Folsom, the company eventually branched out. In doing so, part of their system extended to Rhoad's Diggings with the Rhoads Branch Ditch that was completed by the summer of 1853 (Wilson 1986:84). With a reliable large source of water being transported to the Rhoad's Diggings, miners rushed into the area and by late 1853 the new town of Prairie City boasted a population of somewhere between 2,500 and 3,500 and over 100 buildings including 15 stores, 10 boarding houses, a school, and an express office (Hatheway and McKenna 1987:11–12).

By the mid-1850s, mining operations had expanded well beyond simple small-scale operations to placer mining on an industrial scale and the exploitation of rich quartz veins also present in the Rhoad's Diggings area. In 1855 John Gass and a Colonel Hagan constructed the first steam-powered stamp mill at the diggings and two years later a second, and larger, mill was established by a French company at a cost of $50,000 (Wilson 1986:84, 88). However, as the easiest placer deposits began to diminish, most of the initial group of miners to arrive in the area began to move away; most returning to farming or other endeavors that many of them left at home in a search of easy riches. As their numbers decreased, the population of Chinese miners in particular began to rise as they started to work less accessible claims and the piles of tailings that still held a considerable amount of gold. By

1866, there were only 48 independent miners still working in the Prairie City Mining District (adjacent to Rhoad's Diggings) with 35 of them being of Chinese descent (Werner et al. 1994:57).

Later Period: Large-Scale Mining

As individual miners and small operations began to be phased out with large companies consolidating multiple claims in and around the Alder Creek area, access to the deeper and/or more extensive gold deposits required the use of ground sluicing, low and high-pressure "hydraulicking", and drifting, all of which required the movement of large quantities of water. (Detailed information on these techniques including associated archaeological manifestations can be found in Lindstrom 1988, and 1989, and Maniery 1992. The most prominent firm working in the SPA and vicinity following the initial "rush" was The Natoma Mining Company whose ditch systems provided steady water supplies from the American River to the mining districts in and around present-day Folsom including those at Alder Creek. Also in the Folsom area, another large-scale mining technique commonly used originated fairly early on in the region. Miners, many probably Chinese (June Chan, personal communications with Mary Maniery, 1993: Crawford 1894:226 in Maniery 1994), began excavating deep tunnels and shafts into the banks of the American River in order to follow potentially rich gravel deposits. By the 1860s to the 1870s this practice was in common usage and shafts and tunnels extended throughout the river terrace where the town of Folsom is located.

Drift and ground sluicing operations continued along with large-scale hydraulic and tunneling operations well into the 1890s. However, smaller drift and sluicing claims were still being worked by both Euro-American and Chinese miners employed by smaller independent companies. The Natoma Mining Company also employed Chinese on their lands during the mid-late 1800s. This included their operations on Mississippi Bar (north of the SPA), which they acquired in 1864 (Castenada et al. 1984). The Natoma Mining Company, through persistent claim acquisition and consolidation efforts, effectively ended small, independent mining company operations in the Folsom area. By the turn of the century the smaller drift and ground sluicing operations in the Folsom area had been primarily replaced by the larger dredging operations. The first mention of large scale dredging was the Doan Mining Dredger that operated near Mississippi Bar in 1894. However, this operation was apparently short-lived (Crawford 1894:226 and 1896:316–318 in Maniery 1992:25). W. P. Bonright and Company was the first to establish a successful dredging operation at their newly acquired property at Mississippi Bar. This steam powered bucket line dredge manufactured by the Risdon Iron Works of San Francisco was constructed in 1898 and began operations in 1899.

The Natoma Mining Company, reorganized as Natomas Consolidated of California, acquired all of the smaller dredging operations by 1916 and operated until 1962, with a short period during World War II when operations were suspended. A 1950 aerial photograph depicts one of their dredges working the river gravels at the base of the bluffs, just north of Mississippi Bar. Other operations in the SPA and vicinity included those of Folsom #2 in the vicinity of the town of Folsom in the early 1900s, and those of the General Dredging company that operated a small "doodlebug" drag line dredge between 1938 and 1942, north of Willow Creek and south of Folsom.

Agriculture and Transportation

The low, well-watered foothills of the SPA and vicinity were also the focus of ranching activities that supported the booming towns in the eastern Sacramento and western El Dorado County areas. When many of the early small-scale mining opportunities began to drop off in the late 1800s, disenchanted miners of the region turned to agriculture. To a certain extent, the small communities such as Clarksville, to the east of the SPA, White Rock, located to the south, and Prairie City to the west, served as support centers for local miners, ranchers, and farmers and as stops along Sacramento-Placerville Road (present White Rock Road) that extended from Sacramento to Placerville and the gold fields.

The early-to-mid 20th century saw relatively little change to the rural agricultural character of the area with the exception of some improved transportation elements (U.S. Highway 50 [U.S. 50]), regional mining (conversion

from placer to dredge mining), and commercial development including that of Aerojet General Corporation that manufactured liquid and solid propellant rocket engines on their property west of the SPA beginning in the early 1950s (ECORP Consulting [ECORP] 2007:8). White Rock Road, which forms the southern boundary of the SPA, was designated as a portion of the Lincoln Highway, the nation's first interstate automobile route, in the early decades of the 20th century and thus established the roadways of the area as some of the most traveled in the nation. (EDAW 2006: 6). The development of such transportation routes and the growth of Sacramento and its environs, however, are rapidly changing the character of the Folsom area from rural to suburban with residential and commercial development increasing throughout the region.

DOCUMENTED CULTURAL RESOURCES

Methodology for Identifying Documented Resources

In order to determine if any potentially significant cultural resources are present within or in the immediate vicinity of the SPA, AECOM cultural resources specialists conducted a records search through the North Central Information Center (NCIC) of the California Historical Resources Information System at California State University, Sacramento (record search retrieved May 14, 2007). ECORP also consulted with the Native American Heritage Commission (NAHC) to determine if any sites or properties of particular cultural significance to the Native American community were present that could be affected by the project. The NAHC response indicated that there were no sites found in the Sacred Lands file. The NAHC included a list of five individuals and organizations that might have information on or concerns with the project. On November 17, 2008 and January 5, 2009 contact letters were sent to the individuals and groups on the NAHC list, along with maps of the SPA and requests for information (Appendix E1). Follow-up telephone calls were conducted in December 2008 and January 2009. As a result of this effort, Rose Enos of Auburn, California responded and requested that she be notified if Native American burial sites are discovered.

The NCIC records search indicates that the entire SPA has been inventoried previously for cultural resources (Table 3A.5-1) and that approximately 260 prehistoric and historic-era districts, sites, features, and isolated artifacts have been identified (Appendix E2). The density of identified historic and prehistoric resources suggests that the entire SPA is also sensitive for additional undiscovered prehistoric and historic cultural resources. Thus, the SPA is considered highly sensitive for historic and prehistoric resources.

Identified Resources

Cultural resources identified within the SPA include: (1) traces of early Native American habitation including lithic artifact scatters and bedrock mortars; and (2) the remains of historic-era activities, in particular, those related to Gold Rush-era and later mining operations. The latter consist of the remains of small placer and quartz mines, numerous ditches and remains of similar water conveyance infrastructure, cabin sites, and other structure foundations, tailings piles, and refuse scatters.

Historic Gold Rush-Era Resources

The largest single documented "site" consists of CA-Sac-308H; a landscape encompassing several historic mining districts containing the remnants of mining operations ranging from the earliest days of the Gold Rush to mid-20th century dredges. The densest portion of the mining remains (including those within CA-Sac-308H) is found in the northwest corner of the SPA and includes portions of historic mining landscapes referred to as the Alder Creek Historic Placer Mining District, the Natomas-Aerojet Dredge Field District, the Prairie Diggings Placer Mining District, the American River Mining District, and individual loci, features, and sites related to these districts. Although this "site" is well documented in the archaeological literature (see Lindstrom 1989; PAR 1991; Tordoff 1994; and Windmiller 2005) it has been recorded in a somewhat piecemeal fashion in response to various development projects over the past 20 years. This repeated partial documentation has lead to an unsynthesized documentation of the site as a single complex and cultural landscape. However, it is clear that this "site"

Table 3A.5-1
Summary of Previous Cultural Resource Investigations

Report Title	NCIC File No.	Author and Date	Resources Identified
Sacramento Country Day School, Folsom Campus, Archaeological Resources Inventory, Folsom, Sacramento County, California	5871	Windmiller (2005)	Twelve historic archaeological resources related to early homesteading and mining
A Cultural Resource of Aerojet General Corporation, Sacramento Plant, Sacramento County, California	4519	Lindstrom (1989)	Two mining districts, two historic home sites, one historic refuse scatter, and six isolated historic features
Determination of Eligibility and Effect for the Sunridge Park Project Area, Sacramento County, California	5850	Peak et. al. (2004)	None
Archaeological Inventory Survey, Folsom South Development Project, 1,443 acres on White Rock Road, Sacramento County, California	6997	Genesis (2006)	Three prehistoric sites, mortar groups and mortar sites with middens, 14 historic sites related to mining and ranching, and one multi-component site
Historic Study Report, Proposed Interchange and Auxiliary Lanes on Highway 50, Eastern Sacramento County, California	3840	Tordoff (1994)	Evaluations of five historic archaeological resources, including two mining districts, three segments of a water conveyance system, and two homestead-related sites
Historic Property Survey Report, Proposed Interchange and Auxiliary Lanes on Highway 50, Eastern Sacramento County, California	4521 A & B	Noble (1994)	Twelve historic archaeological resources related to the American River Placer Mining District
Archaeological Survey Report for the East Bidwell Street/ Scott Road Interchange Project on Route 50, Sacramento, California	3749	Jones & Stokes (1995)	None, though previously recorded sites were visited and updated
Historic Property Survey Report for the State Route 50/Empire Ranch Road Interchange Project	8119	LSA (2006)	None
Cultural Resource Assessment of the Proposed White Rock Springs Golf Course, Sacramento County, California	4479	Peak et. al. (1993)	Three archaeological resources: prehistoric mortar site CA-Sac-222, the White Rock Springs Ranch site, and a rock wall
Cultural Resource Assessment of the Proposed White Rock Springs Golf Course, Sacramento County, California-revised final report	4480	Peak et. al. (1994)	Same as above
Positive Historic Property Survey Report for the U.S. Highway 50 HOV Lanes Project, Sunrise Boulevard to El Dorado Hills Boulevard, Sacramento and El Dorado Counties, California	3636	PAR (1998)	Two historic archaeological resources related to ranching
CA-0578A/US 50, 14751 White Rock Road, Sacramento County, California	4470	Earth Tech (2000)	None
Pacific Bell Mobile Services, 14751 White Rock Road, Folsom, Sacramento County: Site # SA-065-C3	1907	Derr (1997)	None
Historic Study Report and Historic Resource Evaluation Report for 16 Sites, Highway 50 Interchange Project, Post Mile 15.8 to 23.1, Sacramento County, California	4520	PAR (1992)	Evaluation of 16 historical and archaeological resources all related to ranching, mining, and transportation from 1848-present

Table 3A.5-1
Summary of Previous Cultural Resource Investigations

Report Title	NCIC File No.	Author and Date	Resources Identified
Archaeological Survey Report, Highway 50 Interchange Project, Post Mile 15.8 to 23.1, Sacramento County, California	4525	PAR (1991)	17 historical and archaeological resources all related to ranching, mining, and transportation from 1848-present
Carpenter Ranch Cultural Resources inventory, Folsom, Sacramento County, California	-----	Windmiller (2006)	129 Archaeological sites (52 possibly eligible) and two potential historic districts
Cultural Resources Survey Report, Folsom Area South Group-30 acre parcel, Sacramento County, California	-----	ECORP (2006)	Five historic archaeological resources related to early homesteading and mining
Folsom Heights Property Development Project, Sacramento County, California	-----	EDAW (2006)	Two historic archaeological resources related to homesteading, and a segment of White Rock Road/Lincoln Highway

Source: NCIC 2007, data compiled by EDAW/AECOM (now AECOM) in 2008

represents a unique landscape exhibiting the full range of placer mining techniques in use in California from the earliest days of the Gold Rush up until the early 1960s when the last of the gold dredges ceased operations in this area. As such many of the constituent elements of the landscape may be eligible for the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR), and some of the elements have already been recommended as NRHP-eligible (and thus CRHR-eligible).

Apart from consideration of CA-Sac-308H as a unique site (cultural landscape) with many contributing elements, numerous other mining-related sites and features have been identified within the SPA. These include stone and earth dams, ground sluice remains, prospect pits, placer tailings, and mine shafts. One of the most prominent types of mining-related features situated within the SPA consists of water conveyance ditches associated with the Alder Creek and Rhoads Diggings historic mining districts (contained within CA-Sac-308H). Although relating many early individual mining features or structures to specific individuals or mining firms can be difficult, many of these ditches were mapped and constructed in the 1850s by mining companies such as the Natomas Company. Other well-dated mining-related sites include the remains of a house constructed in 1855 (temporary site number CR-82) and the site of the 1855 Gass and Hagan steam mill in the Rhodes Diggings historic mining district (temporary site number CR-97).

In addition to water conveyance ditches, mine tailings, and prospect pits, another class of feature situated within the SPA has potential for providing extensive historical information on the ethnicity and daily lives of early Gold Rush-era miners. A number of possible residences or small cabin remains are found throughout and near the CA-Sac-308H landscape area. These often consist of rough stone footings or foundations or, more commonly, the collapsed remains of stone fireplace chimneys. These cabin sites are often closely associated with small placer diggings and many may date to the earliest period of Gold Rush mining in the Folsom area. Although many similar cabin sites and small-scale diggings probably existed in the vicinity prior to dredge mining in the late 19th century, relatively few now remain and most appear to be in excellent and relatively undisturbed condition. While much is known regarding the grand scheme of mining developments in the Folsom area during the 19th and early 20th centuries, little has been recorded on the early lifeways of the individual miners. These cabin sites, given their spatial association with early mining sites and landscapes, are almost certainly related to gold mining activities and may represent an unusual resource capable of providing detailed information on the Gold Rush miner's lifeways.

Other Historic-Era Resources

Other historic-era resources within the SPA include the remains of ranch and farm complexes, refuse scatters, ranch fences, stone walls, and roadways. Some sites not directly related to mining can also be dated to specific periods and/or associated with known individuals. These include the 1870s Goulinson homestead (CA-Sac-739H), the (probable) Grover Russi homestead and ranch complex (CA-Sac-606H), and the Cecil Brown residence (CA-Sac-682H).

Two major historic transportation routes, a segment of the Southern Pacific Railroad (SPRR), and White Rock Road either pass directly through the SPA (the SPRR) or form a portion of its boundary (White Rock Road). The SPRR is eligible for NRHP listing as a system, but the segment of lines situated within the SPA has not been formally evaluated for potential eligibility for NRHP listing. However, White Rock Road, aside from having been established and used heavily during the Gold Rush period, was also designated as a portion of the Lincoln Highway. The Lincoln Highway, the nation's first interstate automobile route was designated in the early decades of the 20th century. The Lincoln Highway, consisting of a route patched together from pre-existing roads and newly built "seedling miles" intended to spur economic growth, started in Times Square, New York City, and ended in Jack London Square in Oakland. At the time, the Federal government had nothing to do with the designation and construction of the route. Henry Joy, President of the Packard Motor Car Company, and Carl Fisher, owner of the Indianapolis Motor Speedway were primarily responsible for the establishment of the Lincoln Highway Association in 1913 and all its activities. Mr. Joy and Mr. Fisher, and other automobile manufacturers and industrialists of the day, had a vested interest in the growth and improvement of roadways in the United States; a better and more extensive road network meant increased sales.

Prior to the construction of U.S. 50, White Rock Road was part of the main west-east route extending from Sacramento into the Sierra Nevada foothills. White Rock Road represents a portion of the original 1913-designated route and remained part of this privately-designated and maintained road system until the 1920s. In 1921 the Federal government passed the Federal Highway Act which, like a similar act passed in 1916, provided $75 million of matching funds to the states for highway construction. However, unlike the 1916 act, the 1921 act required the states to identify 7% of its total mileage as "primary;" only these roads would be eligible for Federal funds. The Lincoln Highway, already an established and maintained route, was prime for designation as a primary road worthy of Federal funding. By the late 1920s, the Lincoln Highway in California was no longer a private enterprise and had been fully absorbed into the Federal highway system with the exception of many local segments one of which was White Rock Road. Although this portion of the old Lincoln Highway has been repaved repeatedly over time, much of the general setting of the roadway has changed little from the early decades of the 20th century. Much of the surrounding land is still devoted to ranching and agriculture and many period culverts, bridges, and associated features such as drainage ditches likely dating to the teens and twenties are still in place. Consequently, portions of White Rock Road retain enough integrity to the Lincoln Highway period to be considered potentially eligible for NRHP listing.

Identified Prehistoric Resources

In addition to the dense cluster of historic-era sites within and near the SPA, clear evidence of early Native American occupation has also been documented in the form of numerous prehistoric sites and features within the SPA. Within the northwest portion of the SPA in particular, which was heavily disturbed by mining, numerous prehistoric sites likely once existed. The potential that "significant" (under CEQA) remnants of these sites occur within the SPA is high. Generally, Native American populations tended to settle in the vicinity of perennial water sources such as those found in the northwest portion of the SPA. With fewer such water sources and drainages documented elsewhere in the SPA, such locales are somewhat sparse. However, several prehistoric sites consisting of lithic artifact scatters and bedrock or boulder mortars have been recorded. The most important of these (CA-Sac-222) exists in the southeast portion of the SPA and consists of the actual "white rocks" after which White Rock Road was named. Noted in early historic accounts of the region, this unusual white quartzite outcrop also exhibits a series of deep mortar holes resulting from extensive early Native American processing of plant

foods, almost certainly acorn. In addition, scatters of lithic artifacts have been documented in the immediate vicinity of the boulder outcrop, suggesting that important subsurface remains may be present. Consequently, due to a direct association with an important historic-era roadway (White Rock Road), their status as an important local landmark, and the likelihood that important deposits of early prehistoric materials are present, this site was recommended eligible for NRHP listing (Solano Archaeological Services 2008).

Summary of Identified Resources

Regardless of their type and cultural/temporal associations, research has demonstrated that numerous cultural sites, features, artifacts, and landscapes are situated within the SPA. While the highest density of recorded resources occurs in the northwest corner of the SPA, the overall density of identified cultural resources suggests that the entire SPA is highly sensitive for historic and prehistoric resources. The number of identified resources indicates a strong likelihood that additional undiscovered resources occur within the SPA.

Identified resources constitute the remains of a long series of human activities from prehistoric habitation and resource processing, to early historic mining, ranching, and transportation. Although the entire SPA has been subjected to detailed archaeological surveys and historical investigations, much of this research has been conducted in a piecemeal fashion and to date no consideration has been given to the documentation and interpretation of the most notable "site" documented in the area—the historic mining landscape presently labeled CA-Sac-308H. This landscape, along with most of the other prehistoric and historic-era resources documented within the SPA, has not been formally evaluated for significance per NRHP/CRHR criteria. Regardless of their association or eligibility, the large number of cultural resources documented indicates that the SPA has long been the focus of intensive activity for thousands of years and due to its largely intact nature, is unique in the Sacramento/Folsom region.

3A.5.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Section 106 of the National Historic Preservation Act

Section 106 of the National Historic Preservation Act (NHPA or "Section 106") and its implementing regulations require Federal agencies to consider the effects of their undertakings on cultural resources that are listed on or eligible for listing on the NRHP. These resources are defined as "historic properties" in the Section 106 process. For this project, the U.S. Army Corps of Engineers (USACE) must also satisfy the requirements of Section 106 because permitting under the Clean Water Act (CWA) is an undertaking as defined in the Section 106 regulations (36 Code of Federal Regulations [CFR] Part 800.16[y]). Other Federal permits and authorizations that are necessary, such as a take permit under the Federal Endangered Species Act (ESA), also require compliance with the requirements of Section 106. Accordingly, all five action alternatives under consideration require compliance with Section 106 because these alternatives (the Proposed Project, Resource Impact Minimization, Centralized Development, Reduced Hillside Development, and No USACE Permit [no USACE 404 permitting] alternatives) would require some level of Federal authorization and permitting. To determine whether these undertakings could affect historic properties, cultural resources (including archaeological, historical, and architectural properties) must be identified, inventoried, and evaluated for listing in the NRHP.

Federal agencies typically perform four primary steps to satisfy the requirements of Section 106. These steps consist of the following actions:

1. Initiate the Section 106 process by consulting with the state historic preservation officer (SHPO) (36 CFR Part 800.3). Determine the area of potential effects (APE) and perform an inventory of cultural resources within the APE and evaluate those resources for the NHRP to determine which resources constitute historic properties subject to management under Section 106 (36 CFR Part 800.4).

2. Identify other consulting parties such as Native American tribes that attach cultural religious significance to resources within the APE, and interested members of the public (36 CFR 800.3[f]).

3. Assess the effects of the undertaking on identified historic properties within the APE (36 CFR Part 800.5).

4. Resolve adverse effects on historic properties, if any (36 CFR Part 800.6).

Because Section 106 only requires that Federal agencies manage cultural resources eligible for, or listed in the NRHP, it is useful to review the criteria for NRHP listing. The NRHP is a register of districts, sites, buildings, structures, and objects of significance in American history, architecture, archaeology, engineering, and culture. The regulations provided in 36 CFR Part 60.4 describe the criteria to evaluate cultural resources for inclusion in the NRHP. Cultural resources can be significant on the national, state, regional, or local level. Properties may be listed in the NRHP if they possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

a) are associated with events that have made a significant contribution to the broad patterns of our history;

b) are associated with the lives of persons significant in our past;

c) embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess a artistic value, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

d) have yielded, or may be likely to yield, information important in prehistory or history.

In addition to meeting the significance criteria, potentially historic properties must possess integrity to be considered eligible for listing in the NRHP. Integrity refers to a property's ability to convey its historic significance (National Park Service 1991). Integrity is a quality that applies to historic resources in seven specific ways: location, design, setting, materials, workmanship, feeling, and association. A resource must possess two, and usually more, of these kinds of integrity, depending on the context and the reasons the property is significant.

Integrity is the ability of a resource or a group of resources to convey a sense of the past as it relates to one or more areas of significance. If significance has been established, it is necessary to determine if the resource retains the qualities for which it is significant. The evaluation of integrity is often subjective, but it must be grounded in an understanding of a resource's physical features and how they relate to its significance. Resources that have been substantially altered may not retain sufficient integrity to reflect their original character. Integrity may be diminished by a single major change or a cumulative effect of numerous minor changes.

There are seven aspects or qualities that in various combinations define integrity. A resource that retains its integrity will possess several, and usually most, of the following aspects: location, setting, design, materials, workmanship, feeling, and association.

Phased Identification, Evaluation, and Management of Cultural Resources under Section 106

Because intensive cultural resources surveys have not been conducted on the entire site, and because the project would involve phased development which has not yet been finalized, USACE has determined that cultural resources would be managed under a Programmatic Agreement (PA), the execution of which satisfies the requirements of Section 106 sufficiently for other Federal actions to proceed (Appendix E3 contains correspondence between USACE and SHPO concerning the use of a PA for this project). USACE under the authority of Section 404 of the Clean Water Act (33 USC Section 1344), may issue permits for subsequent projects within the proposed SPA and for permit applicants that have submitted or will submit applications to USACE for a Section 404 permit for their respective individual projects within the SPA. The PA will be executed before a Record of Decision (ROD) is issued for this EIS.

These applicants are expected to proceed with project-specific development independently of one another with a potential build-out timeframe of 20 years within the SPA. Because USACE has determined that subsequent projects within the SPA may have an effect on Historic Properties that are either included in, or are eligible for inclusion in the NRHP, USACE, in consultation with SHPO, has determined that compliance with Section 106 will be achieved through the execution of a PA pursuant to 36 CFR Section 800.14. Phased identification, evaluation, treatment, and mitigation for projects within the SPA (and infrastructure such as the off-site water alignment and water treatment plant) will occur under the PA in the following manner:

- USACE has defined the Specific Plan's Area of Potential Effect (APE) which includes all areas where effects could occur from construction of the individual projects within the SPA, and associated infrastructure. Future project design changes may require redefining the SPA APE and the development projects within it. Each Section 404 permit application will have its own project-specific APE designated by USACE and approved by SHPO. If some of the projects are merged or segregated, a project will be defined as the area to which a specific Section 404 permit application applies.

- Because each project will require an individual Section 404 permit and the projects will be independent of one another, management steps required for historic properties (e.g., historic districts) that span more than one individual 404 permit must be completed before all affected Section 404 permits are executed. Therefore, USACE will ensure that such steps be conducted prior to the issuance of separate Section 404 permits for each applicant in order to separate the projects from one another.

- Using the existing research conducted on SPA historic districts to date, the evaluation of significance, a portion of the resolution of adverse effect (the archival research and documentation), and the development of a work plan for the remaining identification and evaluation will be carried out in advance of Section 404 permit approval. The work will be conducted at a level (determined adequate by USACE and SHPO) that will allow the remaining resolution of adverse effects (data recovery plan [DRP]/historic property treatment plan [HPTP] of archaeological features and mapping) to be carried out on a project-specific basis by individual applicants independently of one another. A "Preliminary Historic Properties Synthesis" will result from this work. The Preliminary Historic Properties Synthesis will also form the basis for a Historic Properties Synthesis for resources of the historical period that will serve as a mitigation document (Historic Properties Synthesis) for the SPA and will be reviewed and approved by the SHPO.

- After the initial synthesis is prepared and approved, all applications for project-specific 404 permits in the SPA will require that the APE for that permit area be drawn (or re-drawn) by USACE and approved by the SHPO as a subset of the larger SPA APE and USACE will acquire an updated records and literature search. Field survey work will commence as required by USACE in consultation with the SHPO.

- SHPO and USACE will complete and report the results of all required intensive surveys of the undertaking's APE in a manner consistent with applicable federal standards and guidelines.

- Evaluation Plans (EPs) will be prepared to guide evaluation of cultural resources within the APE of each development project that have not been previously evaluated and USACE will submit the EP for concurrent review to the SHPO, and appropriate Native American tribes.

- USACE, in consultation with SHPO, will ensure that determinations of eligibility are made in accordance with the NRHP eligibility criteria set forth in 36 CFR 60.4 for all resources within the APE. All cultural resources determined eligible are Historic Properties as defined in 36 CFR 800.16(l)(1).

- USACE will apply the Criteria of Adverse Effect pursuant to 36 CFR 800.5(a)(1) to all Historic Properties within the APE that will be affected by the project. Determinations of Effect (DoE) will be made in consultation with the SHPO and other interested parties.

- USACE, in consultation with SHPO, will ensure that a Memorandum of Agreement (MOA) is developed, signed, and implemented for each development project where there will be adverse effects to Historic Properties (eligible resources). The MOA will contain stipulations to mitigate anticipated effects on Historic Properties that will result from a specific project and will require compliance with the work plan in the Preliminary Historic Properties Synthesis. The MOA for a specific development project will require development of an HPTP for Historic Properties that will be avoided and for Historic Properties that cannot be avoided and were determined eligible under criteria (a) through (c) (36 CFR 60.4). The MOA will require development of a DRP as required.

- USACE will ensure that draft HPTPs and DRPs are submitted to the SHPO, and appropriate Native American tribes and individuals for review and comment. USACE may also request comment by the ACHP.

- The results of the implementation of the MOA, HPTP, and DRP will be documented in a comprehensive confidential technical report(s) that follow the guidelines of the Secretary of the Interior and the California Office of Historic Preservation. USACE will ensure that draft mitigation documents and the revised Historic Properties Synthesis are submitted to the SHPO and appropriate individuals for review and comment.

- In consultation with the appropriate Native American tribes, USACE will identify Historic Properties of traditional religious and cultural importance. USACE will seek comments from all potentially interested Native American tribes. The interested public, including Native American tribes, will be invited to provide input on the identification, evaluation, and proposed treatment of Historic Properties. Depending on the specific nature of the undertaking, this will be done through letters of notification, public meetings, and site visits.

- Notices to Proceed (NTP) with construction may be issued by USACE for individual development projects, under any of the following conditions: 1) USACE and the SHPO have determined that there are no cultural resources within the APE for a particular Section 404 permit; and 2) USACE and SHPO have determined that there are no Historic Properties within the APE for a particular Section 404 permit; or 3) USACE, after consultation with the SHPO and interested persons, has implemented an adequate treatment plan for Historic Properties in the development project that will be adversely affected, and the fieldwork stipulated in the HPTP and/or DRP(s) has been completed; the Historic Properties Synthesis document has been updated and modified; USACE has accepted a summary of the fieldwork performed and a schedule for completing the reports for that work. USACE will not issue an NTP for a development project that includes a portion of a NRHP-eligible district that will be adversely affected until all development projects that include a portion of that district have completed the preparation of the Historic Properties Synthesis.

- If potentially NRHP-eligible resources are discovered during construction, ground disturbing activities will cease until the provisions of 36 CFR 800.13(b) (discoveries without prior planning) are met. USACE will provide the SHPO and the ACHP an opportunity to review and comment on proposed treatment in accordance with Stipulation 7.

The SHPO will consult with the ACHP on the intent to develop and execute the PA as described above. In the event that the ACHP does not join in the consultation, USACE will proceed the requirements set forth in 36 CFR Section 800.6(b)(1).

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

California Environmental Quality Act

The requirements of CEQA apply to all action alternatives that require discretionary action by local agencies (the Proposed Project, Resource Impact Minimization, Centralized Development, Reduced Hillside Development, and No USACE Permit [no USACE Section 404-permitting] alternatives). CEQA requires that state and local

agencies consider impacts on historical resources, unique archaeological resources, and interred human remains. The State CEQA Guidelines define a "historical resource" to include more than one category of resources. The first category is "resource(s) listed or eligible for listing on the CRHR." (California Code of Regulations [CCR] Section 15064.5[a][1]; see also California Public Resources Code [California PRC] Sections 5024.1 and 21084.1.) A historical resource may be eligible for inclusion in the CRHR, as determined by the State Historical Resources Commission or the lead agency, if the resource:

- is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage; or
- is associated with the lives of persons important in our past; or
- embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- has yielded, or may be likely to yield, information important in prehistory or history.

In addition, a resource is presumed to constitute a "historical resource" if it is included in a "local register of historical resources" unless "the preponderance of evidence demonstrates that it is not historically or culturally significant." (CCR Section 15064.5[a][2].)

Another category of "historical resources" is those deemed significant pursuant to criteria set forth in California PRC Section 5024.1(g), as follows:

[a] resource identified as significant in an historical survey may be listed in the California Register if the survey meets all of the following criteria:

(1) The survey has been or will be included in the State Historic Resources Inventory.

(2) The survey and the survey documentation were prepared in accordance with…procedures and requirements [of the State Office of Historic Preservation].

(3) The resource is evaluated and determined by the [State Office of Historic Preservation] to have a significance rating of Category 1 to 5 on [the California Department of Parks and Recreation Historic Resources Inventory Form].

(4) If the survey is five years or more old at the time of its nomination for inclusion in the California Register, the survey is updated to identify historic resources which have become eligible or ineligible due to changed circumstances or further documentation and those which have been demolished or altered in a manner that substantially diminishes the significance of the resource.

Resources identified by such surveys are presumed to be historically or culturally significant unless the preponderance of the evidence demonstrates otherwise.

The final category of "historical resources" is an optional one, which a lead agency may opt to consider or not consider. According to the State CEQA Guidelines (CCR Section 15064.5[a][3]):

> Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the

lead agency's determination is supported by substantial evidence in light of the whole record.

In addition to the obligation to consider impacts on "historical resources," CEQA and the State CEQA Guidelines require consideration of unique archaeological sites (California PRC Section 21083.2, 14 CCR Section 15064.5). A "unique archaeological resource" is defined in CEQA (California PRC Section 21083.2[g]) as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

(1) contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information,

(2) has a special and particular quality such as being the oldest of its type or the best available example of its type, or

(3) is directly associated with a scientifically recognized important prehistoric or historic event or person.

If data recovery through excavation is the only feasible mitigation, a DRP that makes provisions for adequately recovering the scientifically consequential information from and about the historical resource shall be prepared and adopted before any excavation is undertaken (CCR Section 15126.4[b][3][C]). Other acceptable methods of mitigation under the State CEQA Guidelines (CCR Section 15126.4) include excavation and curation or study in place without excavation and curation (if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the resource).

The State CEQA Guidelines Section 15064.5[e] and the California Health and Safety Code Section 7050.5 require that excavation activities be stopped whenever human remains are uncovered and that the county coroner be called in to assess the remains. If the county coroner determines that the remains are those of Native Americans, the NAHC must be contacted within 24 hours. The NAHC will designate a Most Likely Descendant (MLD) who is empowered to dispose of the remains with appropriate dignity as provided for in California Public Resources C Section 5097.98.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

Sacramento County General Plan

The following goals and policies of the Sacramento County General Plan (1993) are applicable only to the proposed off-site detention basin east of Prairie City Road under all five action alternatives. There are no Sacramento County goals and policies that are applicable to the No Project Alternative.

Objective: Comprehensive knowledge of archeological and historic site locations.

- **Policy CO-155:** Utilize the California Archaeological and Sacramento History and Science Division to assist in determining need for survey.

- **Policy CO-158:** Native American burial sites encountered during preapproved survey or during construction shall, whenever possible, remain *in situ*. Excavation and reburial shall occur when in situ preservation is not possible or when the archaeological significance of the site merits excavation and recording procedure. On-site re-interment shall have priority. The project developer shall provide the burden of proof that off-site re-interment is the only feasible alternative. Re-interment shall be the responsibility of local tribal representatives.

- **Policy CO-159:** The cost of all excavation conducted prior to completion of the project shall be the responsibility of the project developer.

- **Policy CO-160:** Monitor projects during construction to ensure crews follow proper reporting, safeguards, and procedures.

- **Policy CO-161:** As a condition of approval of discretionary permits, a procedure shall be included to cover the potential discovery of archaeological resources during development or construction.

- **Policy CO-162:** As a condition of approval for discretionary projects which are in areas of cultural resource sensitivity, the following procedure shall be included to cover the potential discovery of archaeological resources during development or construction:

  > Should any cultural resources, such as structural features, unusual amounts of bone or shell, artifacts, human remains, or architectural remains be encountered during any development activities, work shall be suspended and the Sacramento County Department of Environmental Review and Assessment shall be immediately notified. At that time, the Department of Environmental Review and Assessment will coordinate any necessary investigation of the site with appropriate specialists, as needed. The project proponent shall be required to implement any mitigation deemed necessary for the protection of the cultural resources. In addition, pursuant to Section 5097.98 of the State Public Resources Code and Section 7050.5 of the State Health and Safety Code, in the event of the discovery of human remains, all work is to stop and the County Coroner shall be immediately notified. If the remains are determined to be Native American, guidelines of the Native American Heritage Commission shall be adhered to in the treatment and disposition of the remains.

El Dorado County General Plan

The following goal and policies of the El Dorado County General Plan (2004) are applicable only to the two proposed local roadway connections from the Folsom Heights property off-site into El Dorado Hills under the Proposed Project Alternative. There are no El Dorado County goal and policies that are applicable to the No Project Alternative or other four action alternatives.

Lane Use Element

- **Policy 7.5.1.3:** Cultural resource studies (historic, prehistoric, and paleontological resources) shall be conducted prior to approval of discretionary projects. Studies may include, but are not limited to, record searches through the North Central Information Center at California State University, Sacramento, the Museum of Paleontology, University of California, Berkeley, field surveys, subsurface testing, and/or salvage excavations. The avoidance and protection of sites shall be encouraged.

- **Policy 7.5.1.6:** The County shall treat any significant cultural resources (i.e., those determined California Register of Historical Resources/National Register of Historic Places eligible and unique paleontological resources), documented as a result of a conformity review for ministerial development, in accordance with CEQA standards (El Dorado County General Plan 2004:154).

City of Folsom General Plan

The City of Folsom (City of Folsom 1993) General Plan is focused on resources currently located within the downtown Historic District. There are no City of Folsom goals and policies that are applicable to the Proposed Project or the alternatives under consideration.

3A.5.3 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines and Section 106 of the NHPA. These thresholds also encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. The Proposed Project or alternatives under consideration were determined to result in a significant impact related to cultural resources if they would do any of the following:

- cause a substantial adverse change in the significance of a unique archaeological resource or an historical resource as defined in Section 21083.2 of CEQA and Section 15064.5 of the State CEQA Guidelines, respectively. The State CEQA Guidelines (CCR Section 15064.5) define "substantial adverse change" as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings;

- disturb any human remains, including those interred outside of formal cemeteries; or

- result in adverse effects on a historic property as defined per the Section 106 regulations. An adverse effect is found under Section 106 if a Federal action would "alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association (36 CFR 800.5[a][1])."

Under CEQA, a substantial adverse change in the significance of a historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource would be materially impaired. Under Section 106, adverse effects are effects that damage the qualities that make an historic property eligible for the NRHP, or the ability of that property to convey the significance that makes it eligible.

Paleontological resources are addressed in Section 3A.7, "Geology, Soils, Minerals, and Paleontological Resources - Land," of this EIR/EIS.

ANALYSIS METHODOLOGY

Investigations into potential cultural resources issues for the project included a review of materials provided by a record search conducted by the NCIC of the California Historical Resources Information System. Other referenced materials included site documents, maps, and survey and evaluation reports archived at AECOM's Sacramento office and ECORP's Rocklin office (see Appendix E2).

Research also consisted of consultation with the Native American community through the NAHC to determine if any sites or other properties of cultural significance to local native peoples were within or in the immediate vicinity of the SPA. In general, few of the cultural resources documented in the SPA have been evaluated for inclusion in the NRHP or the CRHR. However, in some cases preliminary statements of potential eligibility can be made. For example, presently unevaluated historic-era cabin sites located within documented Gold Rush-era mining districts may retain important archaeological data that could provide new information on the lifeways and ethnicity of early miners. Generally, and for the purposes of this EIR/EIS, such sites are considered to be potentially significant per NRHP/CRHR criteria and are considered as such for the impact analysis presented below.

Using the available information on known cultural resources and significance considerations described above, an assessment of development activities related to the Proposed Project and the alternatives under consideration were evaluated for their potential to disturb these resources through direct action (e.g., development of roads and utility

lines through known site areas) or indirect activity (e.g., increasing visibility of and access to sensitive cultural resources that could lead to vandalism or looting).

IMPACT ANALYSIS

Impacts that would occur under each alternative development scenario are identified as follows: NP (No Project), NCP (No USACE Permit), PP (Proposed Project/Action), RIM (Resource Impact Minimization), CD (Centralized Development), and RHD (Reduced Hillside Development). Impacts that are significant under CEQA are also considered adverse effects under the NHPA. The impacts for each alternative are compared relative to the PP at the end of each impact conclusion (i.e., similar, greater, lesser).

IMPACT 3A.5-1 **Possible Destruction of or Damage to Known Prehistoric and Historic-Era Cultural Resources from Ground-Disturbance or Other Construction-Related Activities.** *Construction activities during project implementation could result in the destruction of or damage to known prehistoric and historic-era cultural resources that are potentially eligible for or listed on the CRHR or NRHP.*

On-Site and Off-Site Elements

NP

Under the No Project Alternative, up to 44 rural residences could be developed and agricultural activities could continue under the existing AG-80 land use and zoning designation. Existing agricultural activities would also continue in the Water Study Area, since no off-site water facilities would be constructed in this alternative. Agricultural production could damage or destroy cultural resources that occur within the SPA or the Water Study Area. The policies in the Sacramento County General Plan that would protect cultural resources under a tentative subdivision map do not apply to private land that is zoned for agricultural use, because they are generally mutually exclusive. Because agricultural activities could encounter and potentially destroy known prehistoric and historic-era cultural resources, this **direct** impact is **potentially significant**. **No indirect** impacts would occur. ***[Greater]***

NCP, PP, CD, RHD

The SPA and areas where off-site elements would be constructed contain numerous identified prehistoric and historic-era cultural resources as documented in Appendix E2. While the densest concentration of resources occur in the northwest corner of the SPA, documented prehistoric and historic cultural resources occur throughout the SPA. Many of these resources have not been specifically evaluated for eligibility for listing on the NRHP or the CRHR, but the quality and range of identified resources as described in Appendix E2 suggests that many of these resources are likely eligible for listing in these registers. Construction that would be implemented as part of the No USACE Permit, Proposed Project, Centralized Development, Reduced Hillside Development, and Alternatives would likely result in direct adverse impacts to these resources. These **direct** impacts are considered **significant. No indirect** impacts would occur. ***[Similar]***

Mitigation Measure 3A.5-1a: Prepare, Execute, and Implement a Programmatic Agreement.

For all action alternatives that require Federal permitting and authorization, USACE shall satisfy the requirements of Section 106 of the NHPA. A PA shall be prepared that requires the following measures:

- For each development phase of the specific plan and associated Federal permits and authorizations, USACE, as the Federal Section 106 lead (or USACE designee) shall prepare an APE map and shall consult with the SHPO on the APE, as described above.

- Once SHPO, USACE, and other consulting parties agree on the project-specific APE, USACE or permit applicant (or designee, as directed by USACE) shall perform an inventory for cultural resources in the phase-specific APE consistent with the Secretary of the Interior's Standards and Guidelines for Identification (48 Federal Register [FR] 44720-23) and submit this inventory to the SHPO and any other relevant consulting parties for review as required under the PA. The same document shall evaluate identified resources for listing on the NRHP per the criteria provided above and the Secretary of the Interior's Standards and Guidelines for Evaluation (48 FR 44723-26).

- Once the inventory is complete, USACE (or designee, as directed by USACE) shall prepare a Finding of Effect (FOE) to assess the effect of the buildout of the individual development phase upon identified historic properties by applying the Criteria of Adverse Effect pursuant to 36 CFR 800.5(a)(1). If the FOE identifies adverse effects, the project applicant or USACE, or designee) shall prepare treatment measures and protocols to minimize these impacts to the extent possible. These treatment measures shall be appended to the PA in a treatment plan prepared for the specific project development phase. Treatment measures may include, but are not limited to, avoidance and preservation in places where possible. Where avoidance is not possible or feasible, treatment shall consist of either: 1) recovery of a suitable sample of material from archaeological sites that have the potential to contribute to research, or 2) documentation of historic resources to capture their significance and relationship to important historical themes. Documentation of historical resources shall be performed according to the Historic American Building Survey or Historic American Engineering Record (HABS/HAER) specifications or an equivalent standard when existing architecture or engineered features are subject to adverse effects. Where appropriate, treatment plans may specify the preparation and circulation of interpretive brochures, narrative descriptions, and photographic documentation for the general public.

- A geoarchaeological overview of the SPA may be stipulated and implemented in the PA, as determined by USACE, in order to assess the likelihood for buried cultural deposits. Focused geoarchaeological studies may be subsequently required for portions of the SPA and vicinity of off-site elements that are considered highly sensitive to determine if additional inventory or monitoring should be performed during construction as determined by USACE.

- Resources that may be discovered inadvertently during construction will be handled pursuant to 36 CFR Part 800.13(b) (discoveries without prior planning).

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties, and Caltrans) in coordination with USACE and the SHPO to ensure that mitigation is consistent with the PA.

Implementation: USACE (or designee) and the project applicant(s) of all project phases (as directed by USACE)

Timing: The PA shall be prepared and executed (signed) prior to issuance of any Federal permit or authorization for any aspect or component of the specific plan project. Preparation of the phase-specific APE and inventory and evaluation of properties within the APE shall be performed prior to any ground-disturbing work in the APE for any Federal permitting or authorization of individual development phases. Implementation of treatment measures for identified historic properties may be performed during construction and ground-disturbing work provided that no ground-disturbing work is performed in the vicinity of resources subject to adverse effects and within an appropriate radius of the resource as determined by USACE, prior to completion of all treatment measures. The exact radius in which construction shall

not occur shall be determined based upon the nature of the resource the potential for outlying undiscovered elements of that resource.

Enforcement: USACE and the project applicant(s) of all project phases (as directed by USACE), with oversight by the SHPO.

Mitigation Measure 3A.5-1b: Perform an Inventory and Evaluation of Cultural Resources for the California Register of Historic Places, Minimize or Avoid Damage or Destruction, and Perform Treatment Where Damage or Destruction Cannot be Avoided.

Management of cultural resources eligible for or listed on the CRHR under CEQA mirrors management steps required under Section 106. These steps may be combined with deliverables and management steps performed for Section 106 provided that management documents prepared for the PA also clearly reference the CRHR listing criteria and significance thresholds that apply under CEQA. Prior to ground-disturbing work for each individual development phase or off-site element, the applicable oversight agency (City of Folsom, El Dorado County, Sacramento County, or Caltrans), or the project applicant(s) of all project phases, with applicable agency oversight, shall perform the following actions:

- Retain the services of a qualified archaeologist to perform an inventory of cultural resources within each individual development phase or off-site element subject to approval under CEQA. Identified resources shall be evaluated for listing on the CRHR. The inventory report shall also identify locations that are sensitive for undiscovered cultural resources based upon the location of known resources, geomorphology, and topography. The inventory report shall specify the location of monitoring of ground-disturbing work in these areas by a qualified archaeologist, and monitoring in the vicinity of identified resources that may be damaged by construction, if appropriate. The identification of sensitive locations subject to monitoring during construction of each individual development phase shall be performed in concert with monitoring activities performed under the PA to minimize the potential for conflicting requirements.

- For each resource that is determined eligible for the CRHR, the applicable agency or the project applicant(s) of all project phases (under the agency's direction) shall obtain the services of a qualified archaeologist who shall determine if implementation of the individual project development phase would result in damage or destruction of "significant" (under CEQA) cultural resources. These findings shall be reviewed by the applicable agency for consistency with the significance thresholds and treatment measures provided in this EIR/EIS.

- Where possible, the project shall be configured or redesigned to avoid impacts on eligible or listed resources. Alternatively, these resources may be preserved in place if possible, as suggested under California Public Resources Code Section 21083.2.

- Where impacts cannot be avoided, the applicable agency or the project applicant(s) of all project phases (under the applicable agency's direction) shall prepare and implement treatment measures that are determined to be necessary by a qualified archaeologist. These measures may consist of data recovery excavations for resources that are eligible for listing because of the data they contain (which may contribute to research). Alternatively, for historical architectural, engineered, or landscape features, treatment measures may consist of a preparation of interpretive, narrative, or photographic documentation. These measures shall be reviewed by the applicable oversight agency for consistency with the significance thresholds and standards provided in this EIR/EIS.

- To support the evaluation and treatment required under this mitigation measure, the archaeologist retained by either the applicable oversight agency or the project applicant(s) of all project phases shall prepare an appropriate prehistoric and historic context that identifies relevant prehistoric,

ethnographic, and historic themes and research questions against which to determine the significance of identified resources and appropriate treatment.

- These steps and documents may be combined with the phasing of management and documents prepared pursuant to the PA to minimize the potential for inconsistency and duplicative management efforts.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties, or Caltrans).

Implementation: The applicable oversight agency and the project applicant(s) (at the agency's direction) of all project phases

Timing: Before issuance of building permits and ground-disturbing activities.

Enforcement:

1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For the two roadway connections in El Dorado Hills: El Dorado County Development Services Department.
3. For the detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.
4. For the U.S. 50 interchange improvements: Caltrans.

RIM

The Resource Impact Minimization Alternative was designed to avoid construction or development activities within the dense cluster of cultural resources that occurs in the northwest portion of the SPA. Thus, adverse impacts to the majority of the known cultural resources in the SPA would be avoided under this alternative. However, documented cultural resources occur throughout the SPA, both within the SPA and in the vicinity of off-site elements. The quality and range of identified resources as described in Appendix E2 suggests that some of these resources that would be adversely affected by the Resource Impact Minimization Alternative are likely eligible for listing on the NRHP or CRHR. Because construction activity under the Resource Impact Minimization Alternative could result in damage or destruction of these resources, this **direct** impact is considered **potentially significant**. **No indirect** impacts would occur. ***[Lesser]***

Mitigation Measure: Implement Mitigation Measures 3A.5-1a and 3A.5-1b.

Implementation of Mitigation Measures 3A.5-1a and 3A.5-1b would substantially reduce the level of direct impacts on identified cultural resources under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives, but not to a less-than-significant level. Because this potential impact would not be fully reduced and because it would not be feasible to avoid all direct impacts to identified resources, ground-disturbing work could still result in direct impacts to cultural resources, some of which are likely to be eligible for listing on the CRHR and NRHP. Additionally, some of the off-site elements (two roadway connections in El Dorado County and detention basin in Sacramento County) fall under the jurisdiction of El Dorado and Sacramento Counties; therefore, neither the City nor the project applicant(s) would have control over their timing or implementation. Even if the affected county(ies) cooperate in allowing and enforcing the mitigation, the impacts to the off-site elements would not be fully reduced to a less-than-significant level. Therefore, under all alternatives, impacts to identified cultural resources are considered **potentially significant and unavoidable**.

IMPACT 3A.5-2 **Possible Destruction of or Damage to Previously Undiscovered Cultural Resources from Ground-Disturbance or Other Construction-Related Activities.** *Construction activities during project implementation could result in the destruction of or damage to "significant" (under CEQA) undiscovered cultural resources.*

On-Site and Off-Site Elements

NP

Under the No Project Alternative, existing patterns of agricultural land use would continue under the AG-80 zoning and land use designation in the SPA, and would also continue in the Water Study Area because no off-site water facilities would be constructed. Because agricultural production and construction of rural residences include ground-disturbing work, these activities could potentially damage or destroy previously unknown and undiscovered cultural resources. If these resources were determined to be "significant" under CEQA, any damage or destruction would be considered a significant impact. Because there are no Sacramento County General Plan policies that would protect these cultural resources on private land that is zoned for agricultural use, this **direct** impact is considered **potentially significant**. **No indirect** impacts would occur. ***[Greater]***

NCP, PP, CD, RHD

The density of documented resources within the SPA and in the vicinity of the off-site elements suggests that the entire project footprint is also sensitive for previously unidentified and currently unknown cultural resources. These resources may be obscured by surface vegetation or thin overlying strata of culturally sterile soils, with little surface manifestation; thus, it is unlikely that a surface inventory effort would not identify all cultural resources that could be disturbed or destroyed by ground-disturbing construction activities associated with the No USACE Permit, Proposed Project, Centralized Development, and Reduced Hillside Development Alternatives. If these resources were determined to be "significant" under CEQA, disturbance or destruction would be a significant impact. Therefore, **direct** impacts to previously undiscovered cultural resources are considered **potentially significant**. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure 3A.5-2: Conduct Construction Personnel Education, Conduct On-Site Monitoring if Required, Stop Work if Cultural Resources are Discovered, Assess the Significance of the Find, and Perform Treatment or Avoidance as Required.

To reduce potential impacts to previously undiscovered cultural resources, the project applicant(s) of all project phases shall do the following:

- Before the start of ground-disturbing activities, the project applicant(s) of all project phases shall retain a qualified archaeologist to conduct training for construction workers, to educate them about the possibility of encountering buried cultural resources, and inform them of the proper procedures should cultural resources be encountered.

- As a result of the work conducted for Mitigation Measures 3A.5-1a and 3A.5-1b, if the archaeologist determines that any portion of the SPA or the off-site elements should be monitored for potential discovery of as-yet-unknown cultural resources, the project applicant(s) of all project phases shall implement such monitoring in the locations specified by the archaeologist.

- Should any cultural resources, such as structural features, unusual amounts of bone or shell, artifacts, or architectural remains be encountered during any construction activities, work shall be suspended in the vicinity of the find and the appropriate oversight agency(ies) (identified below) shall be notified immediately. The appropriate oversight agency(ies) shall retain a qualified archaeologist who shall conduct a field investigation of the specific site and shall assess the significance of the find by

evaluating the resource for eligibility for listing on the CRHR and the NRHP. If the resource is eligible for listing on the CRHR or NRHP and it would be subject to disturbance or destruction, the actions required in Mitigation Measures 3A.5-1a and 3A.5-1b shall be implemented. The oversight agency shall be responsible for approval of recommended mitigation if it is determined to be feasible in light of the approved land uses, and shall implement the approved mitigation before resuming construction activities at the archaeological site.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties, or Caltrans).

Implementation: Project applicant(s) of all project phases.

Timing: Before and during ground-disturbing activities.

Enforcement:

1. For actions taken to satisfy the requirements of Section 106: the SHPO and USACE.
2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
3. For the two roadway connections off-site into El Dorado Hills: El Dorado County Development Services Department.
4. For the detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.
5. For the U.S. 50 interchange improvements: Caltrans.

RIM

Because buildout of the specific plan under the Resource Impact Minimization Alternative would avoid most of the known cultural resources in the SPA, it is probable that potential impacts to many of the previously unknown cultural resources would be avoided or minimized as well. However, because previously unknown cultural resources could be encountered anywhere in the SPA or within the off-site elements, ground-disturbing activities under the Resource Impact Minimization Alternative may still adversely affect unknown cultural resources. If these resources were determined to be "significant" under CEQA, disturbance or destruction would be a significant impact. Therefore, **direct** impacts to previously undiscovered cultural resources are considered **potentially significant**. **No indirect** impacts would occur. ***[Lesser]***

Mitigation Measure: Implement Mitigation Measure 3A.5-2.

Implementation of Mitigation Measure 3A.5-2, and Mitigation Measures 3A.5-1a and 3A.5-1b if required, would reduce the potentially significant impacts from possible damage or destruction of previously unknown cultural resources under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives, but not to a less-than-significant level. Although construction worker personnel training would be conducted, construction monitoring would occur (if determined to be necessary by the qualified archaeologist), and evaluation and treatment of resources after they are discovered as required under Section 106 and CEQA would occur, the potential remains that "significant" (under CEQA) cultural deposits could be disturbed during construction and other ground-disturbing activities before they can be identified and protected under all action alternatives. Additionally, some of the off-site elements fall under the jurisdiction of El Dorado and Sacramento Counties, or Caltrans; therefore, neither the City nor the project applicant(s) would have control over their timing or implementation. Even if the affected county(ies)/Caltrans

cooperate in allowing and enforcing the mitigation, the impacts to the off-site elements would not be fully reduced to a less-than-significant level. Therefore, under all of the action alternatives, potential impacts to previously unknown cultural resources are considered **potentially significant and unavoidable.**

IMPACT 3A.5-3 Possible Destruction of or Damage to Interred Human Remains during Construction. *Ground-disturbing activities could inadvertently disinter and/or destroy buried human skeletal remains.*

On-Site and Off-Site Elements

NP, NCP, PP, RIM, CD, RHD

Under the No Project Alternative, existing agricultural land uses and construction of up to 44 rural residences consistent with the AG-80 zoning under the Sacramento County General Plan would continue, but no off-site facilities would be constructed. These activities could inadvertently disinter and destroy interred human remains. Under the five action alternatives, while no documented prehistoric or historic burial sites occur within the SPA or in the vicinity of the off-site elements, the density and number of identified resources suggests that there is at least the potential that interred human remains exist in the project footprint. Ground-disturbing activities associated with the No Project, No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives may inadvertently disinter or destroy these remains. Therefore, this **direct** impact is considered **potentially significant**. No indirect impacts would occur. ***[Similar]***

Mitigation Measure 3A.5-3: Suspend Ground-Disturbing Activities if Human Remains are Encountered and Comply with California Health and Safety Code Procedures.

In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, including those associated with off-site elements, the project applicant(s) of all project phases shall immediately halt all ground-disturbing activities in the area of the find and notify the applicable county coroner and a professional archaeologist skilled in osteological analysis to determine the nature of the remains. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or public lands (California Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, he or she must contact the NAHC by phone within 24 hours of making that determination (California Health and Safety Code Section 7050[c]).

After the coroner's findings are complete, the project applicant(s), an archaeologist, and the NAHC-designated MLD shall determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments are not disturbed. The responsibilities for acting on notification of a discovery of Native American human remains are identified in Section 5097.9 of the California Public Resources Code.

Upon the discovery of Native American remains, the procedures above regarding involvement of the applicable county coroner, notification of the NAHC, and identification of an MLD shall be followed. The project applicant(s) of all project phases shall ensure that the immediate vicinity (according to generally accepted cultural or archaeological standards and practices) is not damaged or disturbed by further development activity until consultation with the MLD has taken place. The MLD shall have at least 48 hours after being granted access to the site to inspect the site and make recommendations. A range of possible treatments for the remains may be discussed: nondestructive removal and analysis, preservation in place, relinquishment of the remains and associated items to the descendants, or other culturally appropriate treatment. As suggested by Assembly Bill (AB) 2641 (Chapter 863, Statutes of 2006), the concerned parties may extend discussions beyond the initial 48 hours to allow for the discovery

of additional remains. AB 2641(e) includes a list of site protection measures and states that the project applicant(s) shall comply with one or more of the following requirements:

- record the site with the NAHC or the appropriate Information Center,
- use an open-space or conservation zoning designation or easement, or
- record a document with the county in which the property is located.

The project applicant(s) or its authorized representative of all project phases shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance if the NAHC is unable to identify an MLD or if the MLD fails to make a recommendation within 48 hours after being granted access to the site. The project applicant(s) or its authorized representative may also reinter the remains in a location not subject to further disturbance if it rejects the recommendation of the MLD and mediation by the NAHC fails to provide measures acceptable to the landowner. Ground disturbance in the zone of suspended activity shall not recommence without authorization from the archaeologist.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties, or Caltrans).

Implementation: Project applicant(s) of all project phases.

Timing: Upon the discovery of suspected human remains.

Enforcement:

1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For the two roadway connections in El Dorado Hills: El Dorado County Development Services Department.
3. For the detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.
4. For the U.S. 50 interchange improvements: Caltrans.

Implementation of Mitigation Measure 3A.5-3 would reduce the potentially significant impact associated with the possible destruction of human remains under the No Project, No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives to a **less-than-significant** level by immediately suspending work in the vicinity of the discovery and complying with state laws requiring contact with the applicable county coroner and a professional archaeologist to determine the nature of the find, and subsequent contact with the NAHC and appropriate treatment if the remains are determined to be those of a Native American. However, some of the off-site elements fall under the jurisdiction of El Dorado and Sacramento Counties, and Caltrans; therefore, neither the City nor the project applicant(s) would have control over their timing or implementation.

3A.5.4 RESIDUAL SIGNIFICANT IMPACTS

With implementation of Mitigation Measure 3A.5-3, potential impacts to previously unknown human remains would be reduced to a **less-than-significant** level. Implementation of Mitigation Measures 3A.5-1a, 3A.5-1b, and 3A.5-2 would minimize significant and potentially significant impacts to cultural resources to the extent feasible. These mitigation measures require that for each individual development phase dependent on Federal and local permitting and authorization, cultural resources must be inventoried, evaluated, and avoided where feasible (Mitigation Measures 3A.5-1a, 3A.5-1b). When resources cannot be avoided, appropriate documentation or data

recovery excavation must be performed. Locations of known cultural resources must be monitored for the potential discovery of cultural resources under Mitigation Measure 3A.5-2. Beyond the inventory, evaluation, treatment, and monitoring required in this document, there are no other feasible mitigations measures that may be performed to minimize potentially significant impacts on cultural resources. Therefore, impacts on identified and previously undiscovered cultural resources would be potentially **significant and unavoidable**.

In addition, some of the off-site elements fall under the jurisdiction of El Dorado County, Sacramento County, or Caltrans; therefore, neither the City nor the project applicant(s) would have control over the timing or implementation of mitigation measures for these interchange improvements. Because the City does not control implementation of mitigation measures for off-site improvements constructed in areas under the jurisdiction of these other agencies, Impacts 3A.5-1 through 3A.5-3 are considered potentially significant and unavoidable for off-site improvements which would be located in the jurisdiction of El Dorado County, Sacramento County, or Caltrans.

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This section was prepared by RMC Water and Environment.

3B.5 CULTURAL RESOURCES – WATER

3B.5.1 AFFECTED ENVIRONMENT SETTING

As provided in Chapter 2, "Alternatives," the placement of new structural facilities as part of the Off-site Water Facility Alternatives would be limited to Zone 4 of the "Water" Study Area and, therefore, the description of the affected environment for cultural resources is focused to Zone 4. No new facilities are proposed within Zones 1, 2, and 3 and, therefore, no additional description of Zones 1, 2, and 3 is necessary to support the analysis of potential impacts to historical and archaeological resources.

PREHISTORIC BACKGROUND

There is substantial evidence that much of the Great Valley and the riverine environments surrounding the meandering San Joaquin and Sacramento Rivers have been occupied throughout most of the Holocene – or last 10,000 years. The reconstruction of pioneering cultures predating 5,000 years has proven difficult given the rapid erosional patterns of the Central Valley. These processes have redeposited or deeply buried the evidence of much of these previous cultures. However, much of what is known has been assembled from the paleo-environmental context of the region and through theoretical explanations for predicting human behavior in specific environmental settings.

In addition, a number of human occupation sites have revealed artifact assemblages that have shaped much of the ethno-archaeological knowledge of the region. Lillard, Heizer, and Fenenga (1939) were the first to describe a sequence of prehistoric cultures in Central California, and defined three successive phases of cultural patterns, which they called the Early, Middle, and Late Horizons. By and large, a transition from one phase to another was marked by changes in the archaeological record, such as change in subsistence practices, disposition of burials, social organization, and related artifact assemblages. Unfortunately, by placing numerous cultures into a temporal horizon, the inherent cultural variation of a region is sometimes lost. In order to address this issue, Ragir (1972) suggested that the relatively uniform periods of Early, Middle, and Late Horizons be substituted for the Windmiller, Cosumnes, and Hotchkiss Cultures, respectively. In so doing, research developments could be incorporated into each culture and allow for a greater degree of variability in the archaeological record.

ETHNOGRAPHIC SETTING

Before the influx of Euro-American populations to the region on a large scale beginning in the 1840s and 1850s, Native American groups identified as the Southern Maidu or Nisenan inhabited Zone 4 of the "Water" Study Area and continue to do so today. Ethnographically, the southern boundary of Nisenan territory was to the south of present-day Highway 50 and in prehistoric and ethnographic times, there likely would have been extensive contact with the neighboring Miwok groups. Although cultural group boundaries were almost never as well-defined as depicted in historic references and today's literature, in general, Zone 4 of the "Water" Study Area was likely more closely associated with the Nisenan than the Miwok at least at the time of sustained Euro-American contact (Sacramento Country 2008a).

HISTORICAL BACKGROUND

Historic-era settlement and activities appear to have been sparse within and near Zone 4 of the "Water" Study Area prior to the discoveries of gold in the region and the ensuing Gold Rush beginning in 1849. Commonly, one of the most influential events to have occurred in many parts of California was the granting of large tracts of land by the Mexican government during the 1830s and 1840s. The nearest such grant was the Rancho Rio de los Americanos within which a portion of Zone 4 of the "Water" Study Area is situated. This rancho originally consisted of thirty five thousand acres (Barrows 1999) and extended from the eastern border of new Helvetia (east

of Sacramento) along the south bank of the American River, to the eastern end of present day Folsom (Sacramento County 2008a).

Organized in 1851 by A.P. Catlin, the Natoma Water and Mining Company provided water via canal from the American River to miners in the Folsom area. By 1853 the canal reached Prairie City, which was located near the northeastern Off-site Water Facilities Study Area boundary where U.S. 50 crosses Prairie City Road. Later known as the Natomas Company, it also operated dragline and bucket-line gold dredges along the American and Cosumnes Rivers from 1900 through the 1950s, producing the largest amount of gold in the county. The dredge fields, located mainly within the northern half of Zone 4, were created with heavy equipment by the Natomas Company and the General Dredging Company, which likely destroyed most of the evidence of earlier types of small mining operations that occurred prior to the 1900s.

A subsidiary of GenCorp, Aerojet-General purchased land from the Natomas Company and opened their plant in Sacramento in the early 1950s. Aerojet then began developing, testing, and building liquid and solid propellant rocket systems for national space and defense programs, using the dredge tailings as natural barriers for rocket testing and a buffer for the nearby communities. The Aerojet administration complex on the west and east sides of Aerojet Road was mainly constructed between 1955 and 1962; their industrial complex on Tennessee Avenue to the west of Prairie City Road was built primarily in the 1960s (Sacramento County 2008b).

Further to the south, agriculture was the main industry in the region during the late 19th and the early 20th centuries. The City of Rancho Cordova is named after the Cordova Vineyard, which was located in the center of the Rancho Rio de los Americanos land grant (Miller 1990). The property was used primarily for wheat cultivation or grazing until the 1920s (Sacramento County 2008a). By 1923, most of the property was owned by the Natomas Company. This area is generally identified for future urban growth under the County General Plan.

RESEARCH AND SURVEY METHODOLOGY

Archival

Tremaine and Associates conducted a cultural resources records search of pertinent survey and site data at the North Central Information Center (NCIC) of the California Historical Resources Information System at the California State University Sacramento, in January 2009 (Tremaine and Associates 2009). Tremaine and Associates then accessed the records for previous surveys and recorded sites within a 1/2 mile of Zone 4 of the "Water" Study Area. The records search included a review of the Directory of Properties in the Historic Property Data File for Sacramento County (Tremaine and Associates 2009) for information on sites of recognized historical significance in the National Register of Historic Places, California Register of Historical Resources, California Inventory of Historic Resources, California Historical Landmarks, and California Points of Historical Interest.

Results

The records search revealed a total of 83 sites that have been previously recorded within a 1/2-mile radius of Zone 4 of the "Water" Study Area. These sites are all listed in Appendix M-VI. Of the 83 sites, 19 are situated within various portions of the "Water" Study Area. Many of these sites are potentially associated with the American River (Folsom) Placer Mining District (CA-SAC-308-H; NRHP# 90000682), which encompasses entire portions of Zone 4. In addition, the records search revealed that a total of 96 surveys/studies have been conducted within, adjacent to, or within a 1/2-mile radius of Zone 4.

Table 3B.5-1 provides a summary of the historical and archaeological resources identified within Zone 4. In addition to the sites identified in the records search, Zone 4 of the "Water" Study Area also includes portions of White Rock Road (CA-SAC-1555H), which at one time was part of the Lincoln Highway; a major overland transportation route between Carson City and Sacramento during the Gold Rush era (Sacramento County 2008a).

Table 3B.5-1
Historic and Pre-Historic Resources Potentially Affected by the Off-site Water Facility Alternatives

Resource ID and Description	Off-site Water Facility Alternatives								
	PA/Alt 1	Alt 1A	Alt 2	Alt 2A	Alt 2B	Alt 3	Alt 3A	Alt 4	Alt 4A
P-34-2186. Prospecting pit or cattle pit								X	X
P-34-2188. Prospecting pit	X	X				X	X		
P-34-2189. Prospect mining mounds and pit	X	X				X	X		
P-34-2190. Prospecting or trash pit; possible associated with Historic Prairie House	X	X				X	X		
P-34-2191. Placer mining test pit and prospect mining mounds	X	X				X	X		
P-34-2193. Historic trash scatter	X	X				X	X		
P-34-2194. Historic ditch segments	X	X				X	X		
P-34- 2196. Grey basalt pestle	X	X				X	X		
P-34-1698. Bedrock / boulder milling station								X	X
P-34-1892. 1957 metal structure								X	X
P-34-2147. Historic trash scatter	X		X		X	X			
P-34-2148. Historic rock wall	X	X	X	X	X	X	X		
P-34-1970. Mine tailing piles and gravel piles								X	X
CA-SAC-0794-H. Historic cement foundation			X		X	X		X	
CA-SAC-0680-H. Historic lost home site; concrete foundations, possible privy, and associated deposits	X	X	X	X	X	X	X		
CA-SAC-1006 Historic debris dump								X	X
CA-SAC-1007-H. Historic trash scatter								X	X
CA-SAC-1008-H. Alder Creek Corridor Mining District								X	X
CA-SAC-0308-H. American River (Folsom) Placer Mining District	X	X	X	X	X	X	X	X	X
CA-SAC-1111-H. Historic mining district	X	X							
CA-SAC-1555-H. White Rock Road: western extent of the Lincoln Highway	X	X	X	X	X	X	X		

Source: Tremaine and Associates 2009, Sacramento County 2008a and 2008b

3B.5.2 REGULATORY FRAMEWORK

The following regulatory framework identifies the national, state, and local criteria applicable to the study area.

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

The following Federal plans, policies, regulations, and laws related to cultural resources are relevant to the Off-site Water Facilities Alternatives, and are described in detail in Section 3A.5, "Cultural Resources – Land:"

- Section 106 of the National Historic Preservation Act
- Phased Identification, Evaluation, and Management of Cultural Resources under Section 106 of the National Historic Preservation Act

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

The following State plans, policies, regulations, and laws related to cultural resources are relevant to the Off-site Water Facilities Alternatives, and are described in detail in Section 3A.5, "Cultural Resources – Land:"

- California Environmental Quality Act

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

Sacramento County

Although Sacramento County does not currently have an historic preservation ordinance, the Sacramento County General Plan (General Plan) (1993) Conservation Element states the following goal:

> Promote the inventory, protection and interpretation of the cultural heritage of Sacramento County, including historical and archaeological settings, sites, building, features, artifacts and/or areas of ethnic, historical, religious or socio-economical importance.

The General Plan sets forth policies and programs under the following six objectives:

- **Objective:** Attention and care during project review and construction to ensure that cultural resource sites, either previously known or discovered on the project area, are properly protected with sensitivity to Native American values.
- **Objective:** Structures with architectural or historical importance preserved to maintain exterior design elements.
- **Objective:** Known archaeological and historic sites are protected from vandalism, unauthorized excavation, or accidental destruction.
- **Objective:** Comprehensive knowledge of archaeological and historic site locations.
- **Objective:** Properly stored and classified artifacts for ongoing study.
- **Objective:** Public awareness and appreciation of both visible and intangible historic and cultural resources.

City of Rancho Cordova

The following goals and policies of the City of Rancho Cordova's General Plan related to the protection of historical and archaeological resources and applicable to one or components of the Off-site Water Facilities Alternatives are as follows.

GOAL CHR.1: Identify and preserve the history of Rancho Cordova for future generations.

- **Policy CHR.1.1:** Establish, support, and fund programs that enhance Rancho Cordova's sense of community and identity, such as the collection of oral histories; genealogical research; and the acquisition of collections of historic artifacts, photographs, memorabilia, or other information relevant to the history of the City.

- **Policy CHR.1.3:** Establish review procedures for development projects that recognize the history of the area in conjunction with State and federal laws.

  - **Action CHR.1.3.1 –** Require historic resources and paleontological studies (e.g., archaeological and historical investigations) for all applicable discretionary projects, in accordance with CEQA regulations. The studies should identify paleontological, historic, or cultural resources in the project area, determine their eligibility for inclusion in the California Register of Historical Resources, and provide mitigation measures for any resources in the project area that cannot be avoided.

  - **Action CHR.1.3.2 –** Incorporate the following two conditions in applicable permits for all discretionary projects.

    The Planning Department shall be notified immediately if any cultural resources (e.g., prehistoric or historic artifacts) or paleontological resources (e.g., fossils) are uncovered during construction. All construction must stop in vicinity of the find and an archaeologist that meets the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology or a paleontologist shall be retained to evaluate the finds and recommend appropriate action.

    The Planning Department shall be notified immediately if any human remains are uncovered and all construction must stop in vicinity of the find. The Planning Division shall notify the County Coroner according to Section 7050.5 of California's Health and Safety Code. If the remains are determined to be Native American, the procedures outlined in CEQA Section 15064.5 (d) and (e) shall be followed.

3B.5.3 Environmental Consequences and Mitigation Measures

Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines and Section 106 of the NHPA. These thresholds also encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. For the purposes of this analysis, an impact to cultural and historical resources would be considered significant if the Off-site Water Facilities would:

- cause a substantial adverse change in the significance of a historical resource;

- cause a substantial adverse change in the significance of an archaeological resource;

- disturb any human remains, including those interred outside of formal cemeteries, or;

- cause an adverse effect to a historic property as defined in the implementing regulations to Section 106 of the NHPA as described above (36 CFR Part 800.5[a][1]).

ANALYSIS METHODOLOGY

This programmatic analysis presents an evaluation of potential, adverse changes to the significance of local cultural resources based on the implementation of the Off-site Water Facility Alternatives as described in Chapter 2, "Alternatives." Section 3B.5.3 provides the standards for determining what constitutes a "substantial adverse change" when considering whether an impact on archaeological or historic resources is significant. Based on the results of the records search and as outlined in the setting description, portions of Zone 4 of the "Water" Study Area contain previously recorded historical and archaeological resources.

For those facilities whose specific locations cannot be identified now, including the WTP and pump station site(s), this assessment identifies what mitigation requirements would be required once project-specific site plans become available.

IMPACT ANALYSIS

Impacts that would occur under each of the Off-site Water Facility Alternatives are identified as follows:

NCP (No USACE Permit Alternative)

PA (Proposed Off-site Water Facility Alternative)

1 (Off-site Water Facility Alternative 1 – Raw Water Conveyance – Gerber/Grant Line Road Alignment and White Rock WTP)

1A (Off-site Water Facility Alternative 1A Raw Water Conveyance – Gerber/Grant Line Road Alignment Variation and White Rock WTP)

2 (Off-site Water Facility Alternative 2 Treated Water Conveyance – Douglas Road Alignment and Vineyard SWTP)

2A (Off-site Water Facility Alternative 2A Treated Water Conveyance – Excelsior Road Alignment Variation and Vineyard SWTP)

2B (Off-site Water Facility Alternative 2B Treated Water Conveyance – North Douglas Tanks Variation and Vineyard SWTP)

3 (Off-site Water Facility Alternative 3 Raw Water Conveyance – Excelsior Road Alignment and White Rock WTP)

3A (Off-site Water Facility Alternative 3A Raw Water Conveyance – Excelsior Road Alignment Variation and White Rock WTP)

4 (Off-site Water Facility Alternative 4 Raw Water Conveyance – Easton Valley Parkway Alignment and Folsom Boulevard WTP)

4A (Off-site Water Facility Alternative 4A Raw Water Conveyance – Easton Valley Parkway Alignment Variation and Folsom Boulevard WTP).

The impacts for each alternative are compared relative to the PA at the end of each impact conclusion (i.e., similar, greater, lesser).

IMPACT 3B.5-1 Possible Destruction of or Damage to Known Prehistoric and Historic-Era Cultural Resources from Ground-Disturbance or Other Construction-Related Activities. *Construction activities associated with the Off-site Water Facility Alternatives could result in the destruction of or damage to known prehistoric and historic-era cultural resources that are potentially eligible for or listed on the CRHR or NRHP.*

NCP, PA, 1, 1A, 2, 2A, 2B, 3, and 3A

As provided in Table 3B.5-1, portions of the historic alignment of White Rock Road are listed as a historical resource and are located within or immediately adjacent to the conveyance alignment for these alternatives. This historical roadway is potentially subject to disturbance as a result of Off-site Water Facilities construction; especially if constructed within the roadway. However, the County is currently planning to realign and widen portions White Rock Road within Zone 4 of the "Water" Study Area, which is further described in the White Rock Road Widening EIR and incorporated by reference into this EIR/EIS. Based on this circumstance, it is possible that installation of the conveyance portion of these Off-site Water Facility Alternatives could occur concurrently with the widening project thereby minimizing potential impacts to this historical resource. However, in addition to White Rock Road, other historic-era resources have also been identified on portions of the White Rock WTP site and in close proximity to White Rock Road [see Appendix M–VI]. In addition, the On-Site WTP is located in an area potentially containing historical resources. As a result, construction-related direct impacts to these previously-documented resources could be **potentially significant**. **No indirect** impacts would result. ***[Similar]***

Construction-related excavation for the conveyance pipeline and other above-ground facilities under these alternatives carries to the potential to adversely affect previously recorded archaeological sites, as identified in Table 3B.5-1. As a result, potential construction-related impacts to these previously documented archaeological resources could be potentially significant if these resources qualify as unique archaeological resource or historical resources within the meaning of CEQA or historic properties within the meaning of Section 106 of the NHPA.

Mitigation Measure: Implement Mitigation Measures 3A.5-1a and 3A.5-1b.

Implementation: City of Folsom Utilities Department

Timing: Prior to completion of final design and start of construction

Enforcement:

1. For actions taken to satisfy the requirements of Section 106: the SHPO and USACE.
2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
3. For off-site improvements within unincorporated Sacramento County and the City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.

4 and 4A

These alternatives would involve physical ground disturbance during construction; but would avoid White Rock Road. Instead, the alignment for these alternatives traverses through the Alder Creek Corridor Mining District (CA-SAC-1008H) along the alignment of the planned Easton Valley Parkway. This district represents a lengthy period of mining from 1849 to 1945, and entails numerous loci of gold mining activity. In addition to the established mining district, numerous historic-era sites are identified along the planned Easton Valley Parkway. Although construction of this alignment could occur concurrent with the planned Easton Valley Parkway, there is a potential for encountering previously recorded historic-era historical resources during construction. If these

resources qualify as historical resources per CEQA criteria or historic properties per Section 106 and ground-disturbing construction disturbed or altered the characteristics of these resources that contribute to their significance, this impact would be significant. Thus, the construction of these alternatives could result in **potentially significant** direct impacts on cultural resources. **No indirect** impacts would result. ***[Similar]***

Mitigation Measure: Implement Mitigation Measures 3A.5-1a and 3A.5-1b.

Implementation of Mitigation Measures 3A.5-1a and 3A.5-1b would substantially reduce the level of direct impacts on identified cultural resources under the No USACE Permit, Proposed Off-site Water Facility Alternative, and Off-site Water Facility Alternatives 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A, but not to a less-than-significant level. Because this potential impact would not be fully reduced and because it would not be feasible to avoid all direct impacts to identified resources, ground-disturbing work could still result in direct impacts to historic and cultural resources. Additionally, portions of the off-site water facilities fall under the jurisdiction of Sacramento County and the City of Rancho Cordova; therefore, neither the City nor the project applicant(s) would have control over timing or implementation of mitigation measures. Even if the affected jurisdictions cooperate in allowing and enforcing the mitigation, the impacts would not be fully reduced to a less-than-significant level. Therefore, under all alternatives, impacts to identified cultural resources are considered **potentially significant and unavoidable**.

IMPACT 3B.5-2 Possible Destruction of or Damage to Previously Undiscovered Cultural Resources from Ground-Disturbance or Other Construction-Related Activities. *Construction activities during project implementation could result in the destruction of or damage to "significant" (under CEQA) undiscovered cultural resources.*

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A

Although the Off-site Water Facilities conveyance routes would generally be constructed within existing roadway right-of-way, this design feature would not completely avoid the potential for encountering previously unidentified archaeological resources. A similar situation could exist for the pump station and WTP sites. Given that traditional survey methods are constrained along roadways due to the presence of pavement, thick annual grasslands along roadway shoulders and WTP sites and the presence of fill materials, buried or previously unidentified resources can be easily obscured. As a result, construction could inadvertently unearth and damage previously unidentified archaeological resources that could qualify as unique archaeological resources or historical resources under CEQA or historic properties within the meaning of Section 106. For the above reasons, this direct impact could be **potentially significant**. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure: Implement Mitigation Measure 3A.5-2.

Implementation: City of Folsom Utilities Department

Timing: Prior to completion of final design and start of construction

Enforcement:

1. For actions taken to satisfy the requirements of Section 106: the SHPO and USACE.
2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
3. For off-site improvements within unincorporated Sacramento County and the City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.

Implementation of Mitigation Measure 3A.5-2 would substantially reduce the level of direct impacts on previously unknown cultural resources under the No USACE Permit, Proposed Off-site Water Facility Alternative, and Off-site Water Facility Alternatives 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A, but not to a less-than-significant level. Because this potential impact would not be fully reduced and because it would not be feasible to avoid all direct impacts to resources, ground-disturbing work could still result in direct impacts to historic and cultural resources. Additionally, portions of the off-site water facilities fall under the jurisdiction of Sacramento County and the City of Rancho Cordova; therefore, neither the City nor the project applicant(s) would have control over timing or implementation of mitigation measures. Even if the affected jurisdictions cooperate in allowing and enforcing the mitigation, the impacts would not be fully reduced to a less-than-significant level. Therefore, under all alternatives, impacts to identified cultural resources are considered **potentially significant and unavoidable**.

IMPACT 3B.5-3 Possible Destruction of or Damage to Interred Human Remains during Construction. *Ground-disturbing activities could inadvertently disinter and/or destroy buried human skeletal remains.*

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A

While no evidence exists to indicate that human burials occurred within the Off-site Water Facilities Study Area, the Off-site Water Facilities alignments may cross areas that could contain buried prehistoric or historic-era human remains that may not be identified in preconstruction inventories required above. Unidentified buried human remains that were not identified during field investigations could be inadvertently unearthed during construction-related activities, which could result in damage to these remains. Damage would be considered a **direct significant** impact. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure: Implement Mitigation Measure 3A.5-3.

Implementation: City of Folsom Utilities Department

Timing: Before issuance of building permits and ground-disturbing activities.

Enforcement:

1. For actions taken to satisfy the requirements of Section 106: the SHPO and USACE.
2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
3. For off-site improvements within unincorporated Sacramento County and the City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.

With the application of the proposed mitigation, disturbances to previously undocumented human interments would be minimized. In addition and specifically in the case of the discovery of Native American human remains, as long as the MLD and the property owner can reach an agreement as to the ultimate treatment and disposition of the remains, this impact would be reduced to a **less-than-significant** level.

3B.5.4 RESIDUAL SIGNIFICANT IMPACTS

With implementation of Mitigation Measure 3A.5-3, potential impacts to previously unknown human remains would be reduced to a less-than-significant level. Implementation of Mitigation Measures 3A.5-1a, 3A.5-1b, and 3A.5-2 would minimize significant and potentially significant impacts to cultural resources to the extent feasible. These mitigation measures require that cultural resources must be inventoried, evaluated, and avoided where feasible (Mitigation Measures 3A.5-1a, 3A.5-1b). When resources cannot be avoided, appropriate documentation

or data recovery excavation must be performed. Locations of known cultural resources must be monitored for the potential discovery of cultural resources under Mitigation Measure 3A.5-2. Beyond the inventory, evaluation, treatment, and monitoring required in this document, there are no other feasible mitigations measures that may be performed to minimize potentially significant impacts on cultural resources. Therefore, impacts on identified and previously undiscovered cultural resources would be potentially significant and unavoidable.

In addition, some of the off-site water facilities fall under the jurisdiction of Sacramento County or the City of Rancho Cordova; therefore, neither the City nor the project applicant(s) would have control over the timing or implementation of mitigation measures for these interchange improvements. Because the City does not control implementation of mitigation measures in areas under the jurisdiction of these other agencies, Impacts 3A.5-1 through 3A.5-3 are considered potentially significant and unavoidable for off-site improvements which would be located in the jurisdiction of Sacramento County or the City of Rancho Cordova.

3A.6 ENVIRONMENTAL JUSTICE – LAND

This section contains a program-level evaluation of environmental justice issues. However, environmental justice impacts would be the same under each individual development phase as under the program (entire SPA) analysis.

3A.6.1 AFFECTED ENVIRONMENT

RACIAL DISTRIBUTION

Table 3A.6-1 shows the racial and ethnic composition of the population in Folsom, Sacramento County, and El Dorado Hills, which is a census designated place (CDP) within unincorporated El Dorado County. El Dorado Hills data is included because, under the Proposed Project Alternative, there would be off-site roadway connections into El Dorado Hills to connect with existing roadways. It should be noted that the data presented in Table 3A.6-1 includes the racial and ethnic characteristics of Folsom Prison and California State Prison Sacramento population. In general, the population of Folsom Prison and California State Prison Sacramento affect the statistics for the City as a whole because the prison population is more racially and ethnically diverse (City of Folsom 2008:10).

The populations of the City of Folsom, Sacramento County, and El Dorado Hills are predominantly white. The white population in the City of Folsom accounted for 77.9% of the population in 2000 and 74.7% in 2007. Similarly, Sacramento County's white population accounted for 64.0% of the population in 2000, and 61.4% in 2007. El Dorado Hills' white population accounted for 90.1% in 2000 and 81.5% in 2007. The white population decreased in Folsom, Sacramento County, and El Dorado Hills between 2000 and 2007 while the Black/African American, Asian, and Latino populations increased during the same period. However, the populations of Folsom, Sacramento County, and El Dorado Hills remained predominantly white.

The Black/African American population in Folsom increased from 6.0% to 6.5% between 2000 and 2007. The Black/African American population in Sacramento County generally remained the same. The Black/African American population of El Dorado Hills increased approximately 1% from 0.8% in 2000 to 1.9% in 2007.

For Folsom, Sacramento County, and El Dorado Hills, the American Indian/Alaskan Native and Native Hawaiian/ Pacific Islander populations generally remained the same between 2000 and 2007, comprising approximately 1% or less of the total population in each location.

The Asian population in Folsom and El Dorado Hills grew substantially between 2000 and 2007, increasing from 7.2% to 10.5% in Folsom and from 4.1% to 12.3% in El Dorado Hills. Sacramento County's Asian population also increased from 11.0% to 13.4% between 2000 and 2007.

Folsom's Hispanic/Latino population increased slightly from 9.5% to 10.1% between 2000 and 2007. Sacramento County had a larger population of Hispanic/Latino residents than Folsom, and the Hispanic/Latino population increased from 16.0% to 19.2% during the same period. The Hispanic/Latino population also increased in El Dorado Hills from 5.0% in 2000 to 8.4% in 2007.

Table 3A.6-2 shows the racial composition of the population in Folsom excluding persons in Folsom Prison and California State Prison Sacramento. When compared to Table 3A.6-1 above, the racial composition of Folsom is less racially and ethnically diverse. The white population in the City increases from 77.9% to 81.0%. The largest decrease was shown in the Black/African American population, which decreased from 6% to 3.8%, followed by the Hispanic/Latino population, which decreased from 9.5% to 8.2%. The percentage of American Indian/Alaskan Native, Asian, and Native Hawaiian/other Pacific Islander populations generally remains the same. (City of Folsom 2008:11.)

Table 3A.6-1
Population Distribution by Race and Ethnicity for the City of Folsom, Sacramento County, and El Dorado Hills

Race/Ethnicity [1]	2000		2007[1]	
	Population	Percent of Total [2]	Population	Percent of Total [2]
City of Folsom				
White (non-Hispanic)	40,415	77.9	53,085	74.7
Black or African American	3,108	6.0	4,650	6.5
American Indian or Alaskan Native	302	0.6	300	0.4
Asian	3,731	7.2	7,475	10.5
Native Hawaiian or other Pacific Islander	100	0.2	33	0.0
Other [3]	4,227	8.1	5,551	7.8
Hispanic or Latino [4]	4,914	9.5	7,208	10.1
Sacramento County				
White (non-Hispanic)	783,240	64.0	842,858	61.4
Black or African American	121,804	10.0	138,501	10.1
American Indian or Alaskan Native	13,359	1.1	12,680	0.9
Asian	134,899	11.0	184,209	13.4
Native Hawaiian or other Pacific Islander	7,264	0.6	10,731	0.8
Other [3]	162,933	13.3	184,794	13.4
Hispanic or Latino [4]	195,890	16.0	263,610	19.2
El Dorado Hills				
White (non-Hispanic)	16,234	90.1	26,434	81.5
Black or African American	139	0.8	604	1.9
American Indian or Alaskan Native	83	0.5	126	0.4
Asian	740	4.1	3,992	12.3
Native Hawaiian or other Pacific Islander	30	0.2	0	0
Other [3]	247	1.4	852	2.6
Hispanic or Latino [4]	896	5.0	2,717	8.4

Notes:
The percent of total may add to more than 100% because individuals may report more than one race.

[1] The U.S. Census Bureau's 2007 data is based on data collected over a 3-year time period and represents the average characteristics of Folsom and Sacramento between 2005 and 2007.

[2] Includes the Folsom Prison population.

[3] Includes the "other" racial category and "two or more races."

[4] The U.S. Census Bureau considers Hispanic and Latino as an ethnicity, not a race. Consequently, a person of Hispanic or Latino descent could identify racially as White, Black/African American, Native American, Asian, or other.

Sources: U.S. Census Bureau 2000, 2007

Table 3A.6-2
2000 Population Distribution by Race and Ethnicity for the City of Folsom Excluding the Prison Population

Race/Ethnicity	Population	Percent of Population[1]
White (non-Hispanic)	39,533	81.0
Black or African American	1,832	3.8
American Indian or Alaskan Native	290	0.6
Asian	3,701	7.6
Native Hawaiian or other Pacific Islander	100	0.2
Other[2]	3,358	6.9
Hispanic or Latino (of any race)[3]	4,006	8.2

Notes:
[1] The percent of total may add to more than 100% because individuals may report more than one race.
[2] Includes the "other" racial category and "two or more races."
[3] The U.S. Census Bureau considers Hispanic and Latino as an ethnicity, not a race. Consequently, a person of Hispanic or Latino descent could identify racially as White, Black/African American, Native American, Asian, or other.
Source: City of Folsom 2008

INCOME CHARACTERISTICS

Median household income and per capita income represent widely used indicators of social well-being. Table 3A.6-3 shows the 1999 and 2007 median household income and per capita income in the City of Folsom, Sacramento County, and El Dorado Hills. In 1999, the City of Folsom's median income was $73,175 and its per capita income was $30,210, compared to a median income of $43,816 and a per capita income of $21,142 in Sacramento County. El Dorado Hills had the highest median income and per capita income, $93,483 and $40,239, respectively. Median income and per capita income increased in Folsom, Sacramento County, and El Dorado Hills between 1999 and 2007; however, Folsom's income remained greater than the county's income and El Dorado Hills remained the highest. In 2007, Folsom's median income was $89,865 and its per capita income was $36,207; the county's median income was $55,882 and its per capita income was $26,405; and El Dorado Hills' median income $113,927 and per capita $44,878.

Table 3A.6-3
Median Household Income and Per Capita Income for the City of Folsom, Sacramento County, and El Dorado Hills

Community	Median Household Income		Per Capita Income[1]	
	1999	2007[2]	1999	2007[2]
City of Folsom	$73,175	$89,865	$30,210	$36,207
Sacramento County	$43,816	$55,882	$21,142	$26,405
El Dorado Hills	$93,483	$113,927	$40,239	$44,878

Notes:
[1] Per capita income is the mean income computed for every man, woman, and child residing in Folsom, Sacramento County, and El Dorado Hills, respectively.
[2] The U.S. Census Bureau's 2007 data is based on data collected over a 3-year time period and represents the average characteristics of Folsom and Sacramento between 2005 and 2007.
Sources: U.S. Census Bureau 2000, 2007; Sacramento County 2008

The City of Folsom's and El Dorado Hills' median household income and per capita income are substantially greater than the county's median household income and per capita income. This difference can be accounted for in part because patterns of household income in Sacramento County vary by geography. The highest income communities, such as Folsom, Rancho Murieta, Gold River, and Wilton, had incomes that were twice or more than the lowest income communities, such as Parkway-South, Foothill Farms, and the City of Sacramento (Sacramento County 2008:5-8).

POVERTY LEVEL

Poverty rates represent the percentage of an area's total population living at or below the poverty threshold established by the U.S. Census Bureau. Table 3A.6-4 shows the 1999 and 2007 percent of persons below poverty level in Folsom, Sacramento County, and El Dorado Hill. In 1999, approximately 7.3% of Folsom's residents, 14.1% of Sacramento County's residents, and 1.7% of El Dorado Hills' residents were below poverty level. Poverty levels have declined in Folsom and Sacramento County between 1999 and 2007, to 3.3% and 12.5%, respectively. In El Dorado Hills, the percentage of residents below the poverty level increased to 3.5% in 2007. The poverty levels in El Dorado Hills and Folsom are substantially less than that of Sacramento County. This difference is a result of the variation in poverty rates among communities in Sacramento County. Poverty rates among higher income communities, such as such as Folsom, Rancho Murieta, Gold River, and Wilton, ranged from 2% or less while poverty rates among the lowest income communities, such as Parkway-South, Foothill Farms, and the City of Sacramento, ranged from 19% or more (Sacramento County 2008:5-9).

Table 3A.6-4
Poverty Level for the City of Folsom, Sacramento County, and El Dorado Hills

Community	Percent of Persons Below Poverty Level	
	1999	2007[1]
City of Folsom	7.3	3.3
Sacramento County	14.1	12.5
El Dorado Hills	1.7	3.5

Notes:
[1] The U.S. Census Bureau's 2007 data is based on data collected over a 3-year time period and represents the average characteristics of Folsom and Sacramento between 2005 and 2007.
Sources: U.S. Census Bureau 2000, 2007; Sacramento County 2008

3A.6.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

National Environmental Policy Act, Section 1502

Provisions in NEPA found in Section 1502.16(c) of the Code of Federal Regulations (CFR) (40 CFR 1502.16[c]) require Federal agencies to identify potential conflicts between a proposed action and the related plans and policies of Federal, State, and local agencies and Native American tribes. This requirement helps Federal agencies identify potential conflicts that may cause adverse effects on the social and economic environment of a study area because many agencies' and tribes' plans and policies are designed to protect the people residing within their jurisdictions and/or the local economy they depend upon for their economic livelihoods (NEPAnet 2008).

Council on Environmental Quality

The Council on Environmental Quality's (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 CFR 1500–1508) provide guidance related to social and economic impact assessments by noting that the "human environment" assessed under NEPA is to be "interpreted comprehensively" to include "the natural and physical environment and the relationship of people with that environment" (40 CFR 1508.14). Furthermore, these regulations require agencies to assess "aesthetic, historic, cultural, economic, social, or health" effects, whether direct, indirect, or cumulative (40 CFR 1508.8).

Executive Order 12898

In 1994, President Bill Clinton issued Executive Order 12898 regarding environmental justice. This order requires Federal agencies to identify and address disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States. Two documents provide some measure of guidance to agencies required to implement this executive order: *Environmental Justice: Guidance under the National Environmental Policy Act* (CEQ 1997) and *Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analysis* (U.S. Environmental Protection Agency [EPA] 1998). Both serve as guides for incorporating environmental justice goals into preparation of environmental impact statements under NEPA. These documents provide specific guidelines for determining whether there are any environmental justice issues associated with a proposed Federal project.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

California Environmental Protection Agency

The California Environmental Protection Agency (Cal/EPA) adopted an environmental justice policy in 2004 (Cal/EPA 2004). Pursuant to California Public Resources Code Sections 71110–71113, Cal/EPA developed this policy to provide guidance to its resource boards, departments, and offices. The policy is intended to support the state's goal of "achieving fair treatment of people of all races, cultures and incomes with respect to the development, adoption, implementation and enforcement of environmental laws and policies."

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

There are no regional or local plans, policies, regulations, or laws related to environmental justice that are applicable to the Proposed Project or alternatives under consideration.

3A.6.3 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Based on CEQ and EPA guidelines (CEQ 1997, EPA 1998), the Proposed Project or alternatives under consideration were determined to result in a violation of Federal environmental justice principles if the Proposed Project or alternatives under consideration would cause impacts that are disproportionately high and adverse, either directly, indirectly, or cumulatively. To make a finding that disproportionately high and adverse impacts would likely fall on a minority or low-income population, three conditions must be met simultaneously:

- a minority or low-income population must reside in the impact zone,
- a high and adverse impact must exist, and
- the impact on the minority or low-income population must be disproportionately high and adverse.

The CEQ guidance indicates that, when determining whether the effects are high and adverse, agencies are to consider whether the risks or rates of impact are "significant" (as defined by NEPA) or above generally accepted norms.

ANALYSIS METHODOLOGY

According to CEQ and EPA guidelines, a minority population is present in a study area if the minority population of the affected area exceeds 50%, or if the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis. Under the same guidelines, a low-income population exists if the project study area is composed of 50% or more people living below the poverty threshold, as defined by the U.S. Census Bureau, or if the percentage of people living below the poverty threshold in the study area is substantially greater than the poverty percentage of the general population or other appropriate unit of geographic analysis.

For the purposes of an environmental justice screening, race, ethnic origin, income characteristics, and poverty status were obtained from the City of Folsom Draft Housing Element Background Report (2008), the Housing Element of the Sacramento County General Plan (2008), and the U.S. Census Bureau (2000, 2007) for the City of Folsom, Sacramento County, and El Dorado Hills. The City of Folsom and Sacramento County boundaries represent the primary area that is appropriate for consideration of environmental justice issues pursuant to EPA guidelines. El Dorado Hills is included in the area of consideration for environmental justice issues only for the Proposed Project Alternative, because it is the only alternative that would include off-site facilities (two roadway connections) in El Dorado Hills. The residential portions of the City of Folsom which are most immediately adjacent to the SPA (north of U.S. Highway 50) do not include concentrations of racial or ethnic groups compared to the City as a whole; similarly, household incomes and poverty rates are comparable to the entire city. Census data for this smaller area are only available from 2000, not 2007 because Census data is collected every 10 years. For this reason, 2007 Citywide data were used in this analysis.

IMPACT ANALYSIS

Impacts that would occur under each alternative development scenario are identified as follows: NP (No Action/No Project), NCP (No USACE Permit), PP (Proposed Project/Action), RIM (Resource Impact Minimization), CD (Centralized Development), RHD (Reduced Hillside Development). The impacts for each alternative are compared relative to the PP at the end of each impact conclusion (i.e., similar, greater, lesser).

IMPACT 3A.6-1 Potential Effects on Minority Populations. *Project implementation would not create a disproportionate placement of adverse environmental impacts on minority communities.*

On-Site and Off-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80, and no off-site water facilities would be constructed. The small amount of scattered rural residences would have no impact on a minority population; thus, **no direct** or **indirect** impacts would occur. ***[Lesser]***

On-Site Elements

NCP, PP, RIM, CD, RHD

As discussed above and shown in Table 3A.6-1, no minority population exceeds 50% in Folsom, Sacramento County, or El Dorado Hills. In 2000, the white population in Folsom (including persons in Folsom Prison),

Sacramento County, and El Dorado Hills was approximately 77.9%, 64%, and 90.1%, respectively. Although the white population decreased in Folsom, Sacramento County, and El Dorado Hills between 2000 and 2007 and the Black/African American, Asian, and Latino populations increased during the same period, these minority populations did not exceed 50% and the populations of Folsom, Sacramento County, and El Dorado Hills remained predominantly white.

Because the minority populations of Folsom, Sacramento County, and El Dorado Hills are less than 50%, implementation of the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives would not cause a disproportionately high and adverse impact on minority populations. This would be a **less-than-significant**, **direct** impact. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

Off-Site Elements

Construction of the off-site freeway interchange improvements, roadway connections into El Dorado Hills, sewer force main, and the detention basin would occur within Folsom, Sacramento County, and El Dorado Hills. Because the minority populations of Folsom, Sacramento County, and El Dorado Hills are less than 50%, implementation of the off-site improvements would not cause a disproportionately high and adverse impact on minority populations. Therefore, this would be a **less-than-significant direct** impact. N**o direct** impacts would occur. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.6-2 Potential Effects on Low-Income Populations. *Project implementation would not create a disproportionate placement of adverse environmental impacts on low-income populations.*

On-Site and Off-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80. No off-site water facilities would be constructed under this alternative. No development would occur under the No Project Alternative that could have a potential impact on a low-income population; thus, **no direct** or **indirect** impacts would occur. ***[Lesser]***

On-Site Elements

NCP, PP, RIM, CD, RDH

When compared, the median household incomes and per capita incomes of the City of Folsom and El Dorado Hills are substantially greater than that of Sacramento County (Table 3A.6-3). In 1999, Folsom's median income was $73,175 and its per capita income was $30,210. In 1999, El Dorado Hills' median income was $93,483 and its per capita income was $40,239. However, in 1999, Sacramento County's median household income was $43,816 and its per capita income was $21,142. In 2007, Folsom's median household income was $89,865 and its per capita income was $36,207 and El Dorado Hills' median household income was $113,927 and its per capita income was $44,878. These are both greater than Sacramento County's 2007 median household income of $55,882 and its per capita income of $26,405.

Table 3A.6-4 shows the 1999 and 2007 percent of persons below poverty level in Folsom, Sacramento County, and El Dorado Hills. The percent of persons below poverty level in Folsom and El Dorado Hills was less than the

county's percentage in 1999 and 2007. In 1999, approximately 7.3% of Folsom's residents and 1.7% of El Dorado Hills' residents were below poverty level, while approximately 14.1% of Sacramento County's residents were below poverty level. In 2007, approximately 3.3% of Folsom's residents and 3.5% of El Dorado Hills' residents were below poverty level, compared to approximately 12.5% of Sacramento County's residents below poverty level.

Because the median household and per capita income and the poverty rate in Folsom and El Dorado Hills is less than that of Sacramento County, the Folsom and El Dorado Hills median household and per capita income and poverty rate is not meaningfully greater than the county's rate. Therefore, project implementation would not cause a disproportionately high and adverse impact on low-income populations. This would be a **less-than-significant**, **direct** impact. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

Off-Site Elements

Construction of the off-site freeway interchange improvements, roadway connections into El Dorado Hills, the sewer force main, and the drainage basin would occur within Folsom, Sacramento County, and El Dorado Hills. Because the median household and per capita income and the poverty rate in Folsom and El Dorado Hills is less than that of Sacramento County, the Folsom and El Dorado Hills median household and per capita income and poverty rate is not meaningfully greater than the county's rate. Therefore, implementation of off-site improvements would not cause a disproportionately high and adverse impact on low-income populations. This would be a **less-than-significant**, **direct** impact. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

3A.6.4 RESIDUAL SIGNIFICANT IMPACTS

Impacts associated with environmental justice are considered less than significant. Therefore, there would be no residual significant impacts.

This section was prepared by RMC Water and Environment.

3B.6 ENVIRONMENTAL JUSTICE – WATER

3B.6.1 AFFECTED ENVIRONMENT

The U.S. Environmental Protection Agency (EPA) defines environmental justice as: "The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means no group of people, including racial, ethnic, or economic groups should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of Federal, state, local, and tribal programs and policies.

The description of the affected environment as provided in Section 3A.6 "Environmental Justice – Land," for racial distribution, income characteristics, and poverty levels within Sacramento County would be applicable to Zone 4 of the "Water" Study Area. A review of minority and low-income housing data for Sacramento County produced as part of the 2035 Sacramento Metropolitan Transportation Plan (MTP), indicates that the conveyance alignments for Off-site Water Facility Alternatives 2, 2A, 3, 3A, 4, and 4A cross through an area identified as a low-income community; south of Mather Airport (SACOG 2008). This area includes census blocks: 1075, 1078–1080, 1083–1085, 1087, 1091–1097, and 1110–1115. No other low-income or minority communities are located within a half mile of Zone 4 of the "Water" Study Area.

3B.6.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

The following Federal plans, policies, regulations, and laws related to environmental justice are relevant to the Off-site Water Facility Alternatives, and are described in detail in 3A.6, "Environmental Justice – Land:"

- National Environmental Policy Act, Section 1502
- The Council on Environmental Quality's (CEQ) Regulations for Implementing the Procedural Provisions of NEPA
- Executive Order 12898

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

The following State plans, policies, regulations, and laws related to environmental justice are relevant to the Off-site Water Facility Alternatives, and are described in detail in Section 3A.6, "Environmental Justice – Land:"

- California Environmental Protection Agency – California Public Resources Code Sections 71110–71113

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

There are no regional or local plans, policies, regulations, or laws related to environmental justice that are applicable to the Off-site Water Facility Alternatives under consideration.

3B.6.3 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Based on CEQ and EPA guidelines (CEQ 1997, EPA 1998), the Off-site Water Facility Alternatives under consideration were determined to result in a violation of Federal environmental justice principles if the alternatives under consideration would cause impacts that are disproportionately high and adverse, either directly, indirectly, or cumulatively. To make a finding that disproportionately high and adverse impacts would likely fall on a minority or low-income population, three conditions must be met simultaneously:

- a minority or low-income population must reside in the impact zone,
- a high and adverse impact must exist, and
- the impact on the minority or low-income population must be disproportionately high and adverse.

The CEQ guidance indicates that, when determining whether the effects are high and adverse, agencies are to consider whether the risks or rates of impact are "significant" (as defined by NEPA) or above generally accepted norms.

ANALYSIS METHODOLOGY

To determine if a project could disproportionately affect a high-minority or low-income population, it must also be determined how the project would affect other segments of the population. For example, if there are more high-income populations affected by a project than low-income populations, then the potential for disproportionate impacts to the low-income population, and thus the potential for environmental justice impacts, is low. If the proportion of low-income and high-minority populations impacted by a project is greater than either the middle or high-income populations or the middle- or low-minority populations, then there is more of a potential for an environmental justice impact.

IMPACT ANALYSIS

Impacts that would occur under each of the Off-site Water Facility Alternatives are identified as follows:

NCP (No USACE Permit Alternative)

PA (Proposed Off-site Water Facility Alternative)

1 (Off-site Water Facility Alternative 1 – Raw Water Conveyance – Gerber/Grant Line Road Alignment and White Rock WTP)

1A (Off-site Water Facility Alternative 1A Raw Water Conveyance – Gerber/Grant Line Road Alignment Variation and White Rock WTP)

2 (Off-site Water Facility Alternative 2 Treated Water Conveyance – Douglas Road Alignment and Vineyard SWTP)

2A (Off-site Water Facility Alternative 2A Treated Water Conveyance – Excelsior Road Alignment Variation and Vineyard SWTP)

2B (Off-site Water Facility Alternative 2B Treated Water Conveyance – North Douglas Tanks Variation and Vineyard SWTP)

3 (Off-site Water Facility Alternative 3 Raw Water Conveyance – Excelsior Road Alignment and White Rock WTP)

3A (Off-site Water Facility Alternative 3A Raw Water Conveyance – Excelsior Road Alignment Variation and White Rock WTP)

4 (Off-site Water Facility Alternative 4 Raw Water Conveyance – Easton Valley Parkway Alignment and Folsom Boulevard WTP)

4A (Off-site Water Facility Alternative 4A Raw Water Conveyance – Easton Valley Parkway Alignment Variation and Folsom Boulevard WTP).

The impacts for each alternative are compared relative to the PA at the end of each impact conclusion (i.e., similar, greater, lesser).

IMPACT 3B.6-1 Potential Effects on Minority Populations. *Implementation of the Off-site Water Facility Alternatives would not create a disproportionate placement of adverse environmental impacts on minority communities.*

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A

Construction of the Off-site Water Facility Alternatives would occur within unincorporated portions of Sacramento County and the City of Rancho Cordova. Because the minority populations of portions of unincorporated Sacramento County and the City of Rancho Cordova are less than 50%, implementation of the off-site Water Facility Alternatives would not cause a disproportionately high and adverse impact on minority populations. Therefore, this would be a **less-than-significant direct** impact. **No direct** impacts would occur. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.6-2 Potential Effects on Low-Income Populations. *Project implementation would not create a disproportionate placement of adverse environmental impacts on low-income populations.*

NCP, PA, 1, 1A, and 2B

These alternatives would not involve the placement of any of the Off-site Water Facilities within or in close proximity to low-income populations. Based on the absence of low-income pollutions (> 50%) within portions of Zone 4 of the "Water" Study Area traversed by these alternatives, no **direct** or indirect disproportionate construction or operational impacts to low-income populations would occur under these Off-site Water Facility Alternatives. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

2, 2A, 3, 3A, 4, and 4A

Implementing these above alternatives would involve the construction and operation of a new water conveyance facility that crosses communities south of Mather Airport identified as a low-income (>50%). Normal operation of the pipeline would not generate significant air quality, traffic, noise, or aesthetic impacts once in place because it would be buried. The incremental long-term impact on adjacent land uses would be the low-level risk of an accidental pipe breakage with minor flooding and traffic disruption and routine maintenance activities. Because operation itself would not result in significant impacts, there is no reason to expect that high-minority and/or low-income populations would be affected disproportionately by operation of the Off-site Water Facilities. This **direct** impact would be **less than significant**. There would be **no indirect** impacts. ***[Greater]***

An analysis of construction impacts in all other disciplines analyzed in this EIR/EIS is presented in other applicable "Water" sections of Chapter 3, and mitigation measures are presented in each section to reduce construction-related impacts to less-than-significant levels. The only construction-related impacts identified that cannot be fully reduced to a less-than-significant level are construction-related emissions and noise (see Impact

3B.11-1 in Section 3B.11, "Noise – Water"). Construction-related emissions would exceed emission standards set by the Sacramento Metropolitan Air Quality Management District (SMAQMD) and contribute to the SMAQMD's emissions inventory within the SVAB (see Impact 3B.2-1 in Section 3B.2, "Air Quality - Water"). However, these short-term effects would be dispersed throughout the conveyance alignment and not focused to any one location with the exception of the WTPs for the applicable alternatives. Because no low-income populations are located in close proximity to the WTP sites and the impacts would be distributed along the entirety of the pipeline route, impacts to low-income populations along the route would be similar to other affected census block groups. Therefore, identified areas of low-income populations, would not be, overall, disproportionately affected by construction or operation of the Off-site Water Facility Alternatives. **Direct** and **indirect** environmental justice-related impacts would therefore be **less than significant**. ***[Greater]***

Mitigation Measure: No mitigation measures are required.

3B.6.4 RESIDUAL SIGNIFICANT IMPACTS

The implementation of Off-site Water Facility Alternatives would not cause a disproportionately high and adverse impact on low-income or minority populations. Potential impacts to existing low-income and minority populations would be less than significant and, therefore, no residual significant impact would occur.

3A.7 GEOLOGY, SOILS, MINERALS, AND PALEONTOLOGICAL RESOURCES – LAND

This section contains a program-level evaluation of geology, soils, minerals, and paleontological resources. However, impacts to these resources would be the same under each individual development phase as under the program (entire SPA) analysis.

3A.7.1 AFFECTED ENVIRONMENT

GEOLOGY

Regional Geology

The SPA is located along the western margin of the Sierra Nevada Mountain Range (in the Sierra Nevada geomorphic province). The Sierra Nevada trends north-northwest from Bakersfield to Lassen Peak, and includes the Sierra Nevada mountain range and a broad belt of western foothills. The Sierra Nevada block is composed of northwest-trending belts of metamorphic, volcanic, and igneous rocks that have undergone intense deformation, faulting, and intrusion. Active faults that mark the eastern edge of the Sierra Nevada have resulted in upthrusting and tilting of the entire Sierra Nevada block in the last 5 million years—steeply on the eastern edge (adjacent to the Mono Basin), and gently along the western edge (where the SPA is located). The gently rolling Sierra Nevada foothills are comprised of metamorphosed sedimentary rocks that have been intruded by igneous rocks. The rock formations that make up the western edge of the Sierra Nevada block likely originally formed as a volcanic arc that was later accreted (added) to the western margin of the continent during the Jurassic period (Day 1992).

Local Geology

The SPA is located within the following U.S. Geological Survey (USGS) 7.5-Minute Quadrangles: Folsom SE, Clarksville, Folsom, and Buffalo Creek. The topography is gently rolling over most of the SPA, varying from approximately 245 feet above mean sea level (msl) in the northwestern portion of the SPA to approximately 400 feet above msl in the central portion of the SPA. However, the eastern portion of the SPA, located in the low foothills of the Sierra Nevada, contains steeper terrain that ranges from 500 feet to 810 feet above msl.

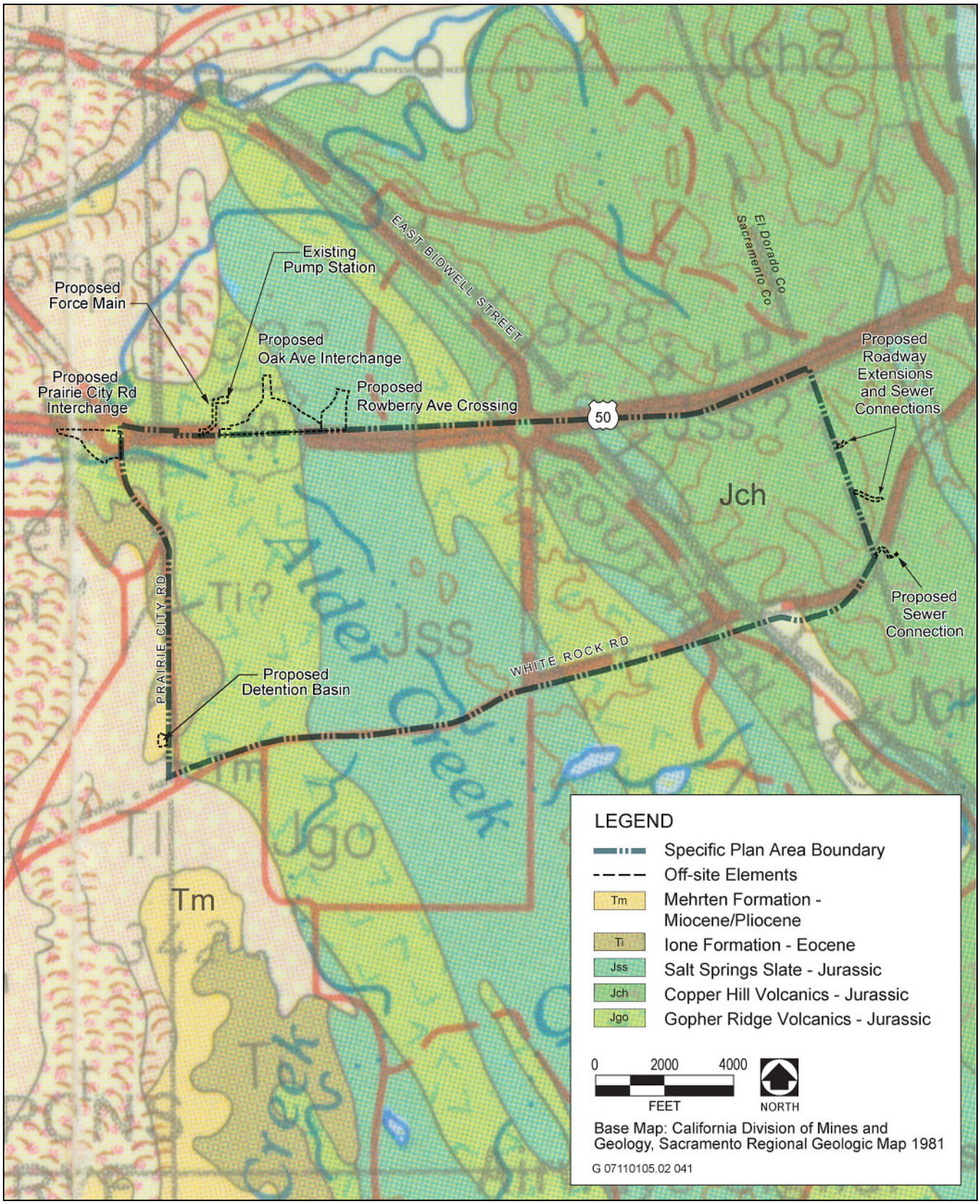
The SPA lies within the Western Sierra Metamorphic Belt, which contains primarily volcanic and sedimentary rocks that were added to the continental margin during the Jurassic period. These rocks are overlain by younger upper Cretaceous and Tertiary sedimentary rocks of the Central Valley. Exhibit 3A.7-1 shows the geologic formations in the SPA, discussed in detail below, based on the *Geologic Map of the Sacramento Quadrangle* (Wagner et al. 1987).

Mehrten Formation

The Mehrten Formation is of Pliocene-Miocene age (approximately 9 million year ago). It consists of sandstone, siltstone, and conglomerate that are interbedded with andesitic breccia from volcanic lava flows that occurred in the Sierra Nevada mountains and foothills.

Ione Formation

The Ione Formation occurs as a 200-mile-long series of isolated exposures along the western foothills of the Sierra Nevada, from Oroville south to Friant in Fresno County. The Ione was formed from fluvial, estuarine, and shallow marine deposits of Eocene age (approximately 35 to 55 million years ago). It consists of quartzose sandstone, conglomerate, and claystone. This formation is generally soft and deeply eroded. It occurs only in a small area of southwestern portion of the SPA.



Source: Wagner et al. 1987

Geologic Formations in the SPA and Vicinity **Exhibit 3A.7-1**

Salt Springs Slate, Copper Hill Volcanics, Gopher Ridge Volcanics

These formations are believed to have originated near an oceanic island volcanic arc that was later accreted (added) to the continental margin during the Jurassic period (approximately 150-200 million years ago) and subsequently deformed. Springer and Day (2005) believe that the Copper Hill and Gopher Ridge Volcanics are the same formations, and have also postulated a sequence of deposition, erosion, and burial of the volcanic arc.

Salt Springs Slate—This sedimentary/metasedimentary formation consists mainly dark gray slate, with some mica schist. The rocks originally consisted of shale, which was metamorphosed into slate approximately 159–151 million years ago.

Copper Hill Volcanics/Gopher Ridge Volcanics—These formations consist of metamorphosed pyroclastic rocks, pillow lava, and minor felsic porphyrite that may be 162 million years or older.

REGIONAL SEISMICITY AND FAULT ZONES

Potential seismic hazards resulting from a nearby moderate to major earthquake can generally be classified as primary and secondary. The primary effect is fault ground rupture, also called surface faulting. Common secondary seismic hazards include ground shaking, liquefaction, and subsidence. Each of these potential hazards is discussed below.

Fault Ground Rupture

Surface rupture is an actual cracking or breaking of the ground along a fault during an earthquake. Structures built over an active fault can be torn apart if the ground ruptures. Surface ground rupture along faults is generally limited to a linear zone a few yards wide. The Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) (see Section 3A.7.3, "Regulatory Framework," below) was created to prohibit the location of structures designed for human occupancy across the traces of active faults, thereby reducing the loss of life and property from an earthquake. The SPA is not located in an Alquist-Priolo Earthquake Fault Zone (California Geological Survey [CGS] 2007, Hart and Bryant 1999). The nearest fault zoned under the Alquist-Priolo Act is the northern segment of the Cleveland Hills Fault, located near Lake Oroville, approximately 50 miles north of the SPA. Research conducted by the California Department of Water Resources (DWR) indicates that the magnitude 5.7 earthquake that occurred on August 1, 1975 along the Cleveland Hills Fault mostly likely resulted from reservoir-induced stress (DWR 1979).

Seismic Ground Shaking

Ground shaking, motion that occurs as a result of energy released during faulting, could potentially result in the damage or collapse of buildings and other structures, depending on the magnitude of the earthquake, the location of the epicenter, and the character and duration of the ground motion. Other important factors to be considered are the characteristics of the underlying soil and rock and, where structures exist, the building materials used and the workmanship of the structures.

Faults in the Project Region

The West Branch of the Bear Mountains fault, within the Foothills fault system, is located approximately 5 miles east of the eastern property boundary; however, Jennings (1994) does not indicate that fault activity has occurred within the last 11,000 years, and the slip rate of the Foothills fault system is extremely low (0.05 millimeters per year), which is well below the planning threshold for major earthquakes (USGS 2000). With the exception of the Dunnigan Hills fault, located in the Woodland area, the Sacramento Valley has generally not been seismically active in the last 11,000 years (Holocene time). Faults with known or estimated activity during the Holocene are generally located in the San Francisco Bay Area to the west, or in the Lake Tahoe area to the east, as shown in

Table 3A.7-1. In addition, Table 3A.7-1 identifies the faults' approximate distance from the SPA, fault type, and maximum moment magnitude.

Table 3A.7-1
Faults with Evidence of Activity During Holocene Time in the Project Region

Fault Name	Approximate Distance from SPA (miles)	Fault Type[1]	Maximum Moment Magnitude[2]	Regional Location
Dunnigan Hills	40	NA	NA	Western Sacramento Valley
Cleveland Hills/Swain Ravine	50	N/A	6.5	Sierra Nevada Foothills
Great Valley Fault Zone Segment 4	60	B	6.6	Margin between Sacramento Valley and Coast Range
Great Valley Fault Zone Segment 5	65	B	6.5	Margin between Sacramento Valley and Coast Range
Green Valley	65	B	6.2	Coast Range
Greenville Fault Zone (includes Clayton and Marsh Creek sections)	65	B	6.6	Coast Range
Concord	70	B	6.2	Coast Range
West Tahoe/Dollar Point Fault Zone	60	NA	7.2	Lake Tahoe
North Tahoe/Incline Village Fault Zone	60	B	7.0	Lake Tahoe

Notes:
NA = not available or not known

[1] Faults with an "A" classification are capable of producing large magnitude (M) events (M greater than 7.0), have a high rate of seismic activity (e.g., slip rates greater than 5 millimeters per year), and have well-constrained paleoseismic data (e.g., evidence of displacement within the last 700,000 years). Class "B" faults are those that lack paleoseismic data necessary to constrain the recurrence intervals of large-scale events. Faults with a "B" classification are capable of producing an event of M 6.5 or greater.

[2] The moment magnitude scale is used by seismologists to compare the energy released by earthquakes. Unlike other magnitude scales, it does not saturate at the upper end, meaning that there is no particular value beyond which all earthquakes have about the same magnitude, which makes this scale a particularly valuable tool for assessing large earthquakes.

Source: Cao 2002, Jennings 1994, Mualchin 1996, Petersen et al. 1996, Ichinose et al. 1999, data compiled by AECOM in 2009

The intensity of ground shaking depends on the distance from the earthquake epicenter to the site, the magnitude of the earthquake, site soil conditions, and the characteristics of the source. Ground motions from seismic activity can be estimated by probabilistic method at specified hazard levels and by site-specific design calculations using a computer model. The CGS Probabilistic Seismic Hazards Assessment Model indicates a minimum horizontal acceleration of 0.109 g for soft rock and 0.1 g for firm rock conditions (where g is the percentage of gravity) in the SPA with a 10% probability of earthquake occurrence in a 50-year timeframe (also known as the "Design Basis Earthquake" [DBE]) for use in earthquake-resistant design (CGS 2008). Stated another way, these calculations indicated there is a 1-in-10 probability that an earthquake will occur within 50 years that would result in a peak horizontal ground acceleration exceeding 0.109 or 0.1*g*.

The California Building Standards Code (CBC) specifies more stringent design guidelines where a project would be located adjacent to a Class A or B fault as designated by the California Probabilistic Seismic Hazard Maps. As shown in Table 3A.7-1, the SPA is located approximately 60 miles from the nearest Class A or B fault.

Seismic Seiches

Earthquakes may affect open bodies of water by creating seismic sea waves and seiches. Seismic sea waves (often called "tidal waves") are caused by abrupt ground movements (usually vertical) on the ocean floor in connection with a major earthquake. Because of the long distance of the SPA from the Pacific Ocean, seismic sea waves would not be a factor in the SPA. A seiche is a sloshing of water in an enclosed or restricted water body, such as a basin, river, or lake, which is caused by earthquake motion; the sloshing can occur for a few minutes or several hours. Although an 1868 earthquake along the Hayward fault in the San Francisco Bay Area is known to have generated a seiche along the Sacramento River, the affected area was located in the Sacramento–San Joaquin River Delta. Seiches are not likely to occur in the vicinity of the SPA.

Ground Failure/Liquefaction

Soil liquefaction occurs when ground shaking from an earthquake causes a sediment layer saturated with groundwater to lose strength and take on the characteristics of a fluid, thus becoming similar to quicksand. Factors determining the liquefaction potential are soil type, the level and duration of seismic ground motions, the type and consistency of soils, and the depth to groundwater. Loose sands and peat deposits are susceptible to liquefaction, while clayey silts, silty clays, and clays deposited in freshwater environments are generally stable under the influence of seismic ground shaking.

Liquefaction poses a hazard to engineered structures. The loss of soil strength can result in bearing capacity insufficient to support foundation loads, increased lateral pressure on retaining or basement walls, and slope instability.

Based on a review of information contained in (1) the Preliminary Geotechnical Engineering Reports prepared by Wallace Kuhl & Associates (2004, 2005, 2008) and Youngdahl Consulting Group (2003), (2) published geological maps and literature, and (3) a telephone conference with Wallace Kuhl & Associates (French, pers. comm., 2009), it unlikely that on- or off-site soils would be subject to liquefaction in the event of an earthquake because the SPA located in stable soil underlain at shall depths by bedrock, the potential seismic sources are a relatively long distance away, and the groundwater table is at least 100 feet below the ground surface.

Subsidence, Settlement, and Soil Bearing Capacity

Subsidence of the land surface can be induced by both natural and human phenomena. Natural phenomena that can cause subsidence can result from tectonic deformations and seismically induced settlements; from consolidation, hydrocompaction, or rapid sedimentation; from oxidation or dewatering of organic-rich soils; and from subsurface cavities. Subsidence related to human activity can result from withdrawal of subsurface fluids or sediment. Pumping of water for residential, commercial, and agricultural uses from subsurface water tables causes more than 80% of the identified subsidence in the United States (Galloway et al. 1999). Lateral spreading is the horizontal movement or spreading of soil toward an open face, such as a streambank, the open side of fill embankments, or the sides of levees. The potential for failure from subsidence and lateral spreading is highest in areas where the groundwater table is high, where relatively soft and recent alluvial deposits exist, and where creek banks are relatively high. Soil bearing capacity is the ability of soil to support the loads applied to the ground; where the bearing capacity is too low to support proposed structures, subsidence and settlement may occur.

Based on a review of Natural Resource Conservation Service (NRCS) (2009) soil survey data and the Preliminary Geotechnical Engineering Reports prepared by Wallace Kuhl & Associates (2004, 2005, 2008) and Youngdahl Consulting Group (2003), SPA soils would not be subject to hazards from subsidence or settlement, because the groundwater table is at least 100 feet below the SPA and because the SPA soils generally consist of older bedrock materials of adequate bearing strength.

SLOPE STABILITY

A landslide is the downhill movement of masses of earth material under the force of gravity. The factors contributing to landslide potential are steep slopes, unstable terrain, and proximity to earthquake faults. This process typically involves the surface soil and an upper portion of the underlying bedrock. Movement may be very rapid, or so slow that a change of position can be noted only over a period of weeks or years (creep). The size of a landslide can range from several square feet to several square miles.

The eastern portion of the SPA contains steep slopes; however, no landslides have been recorded in the SPA and vicinity. Preliminary grading plans (MacKay & Somps 2008) indicate that steep cuts and fills would be necessary in the eastern foothills, necessitating the construction of slopes that would vary from 16–32%. Without proper engineering controls, SPA soils could be subject to landslide potential during or after construction activities.

SOILS

Table 3A.7-2 summarizes the generalized characteristics and Exhibit 3A.7-2 shows the locations of the soil types of the on- and off-site facilities.

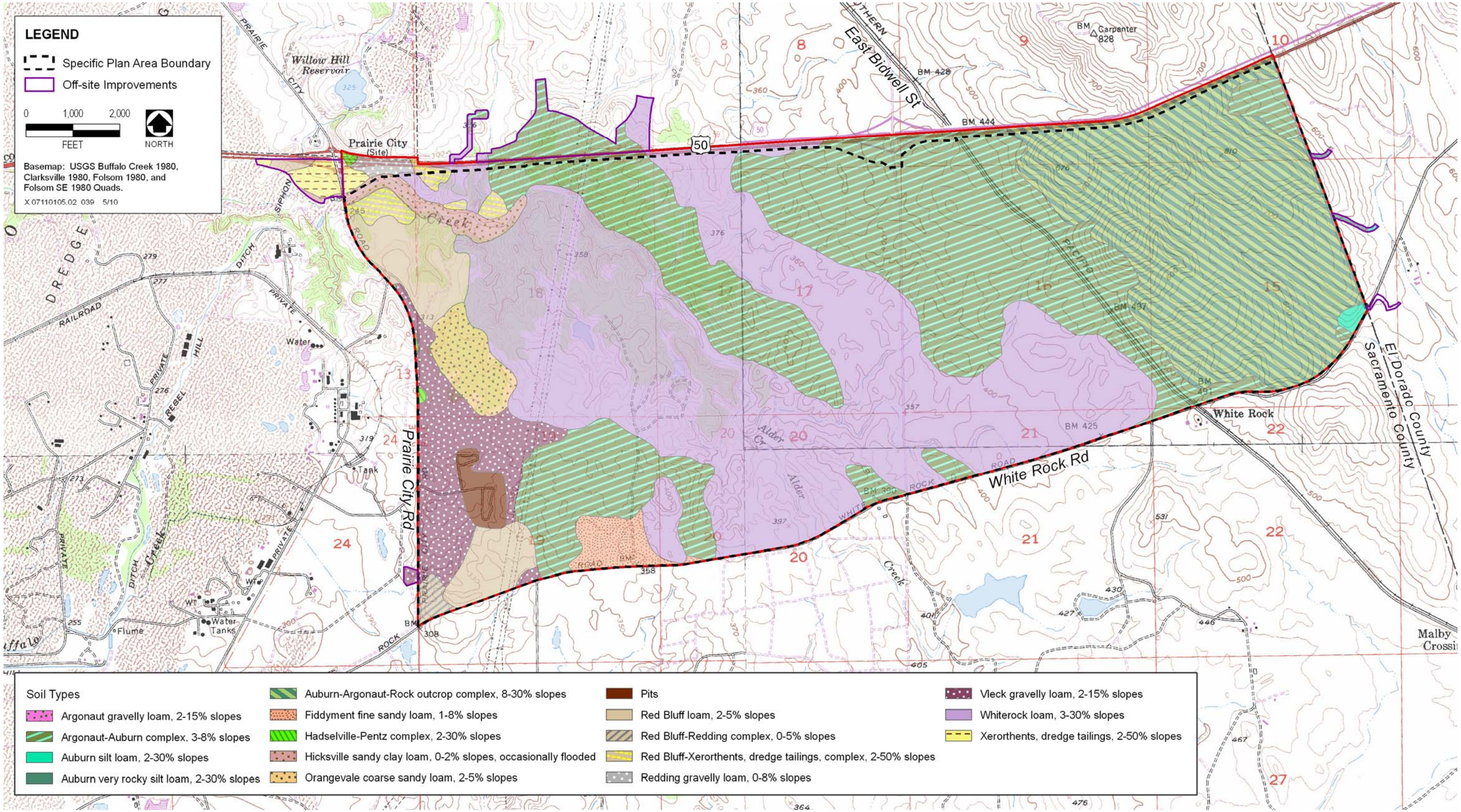
Subsurface Conditions

Based on data contained in the Preliminary Geotechnical Engineering Reports prepared by Wallace Kuhl & Associates (2004, 2005, and 2008) and Youngdahl Consulting Group (2003), the SPA is generally underlain by near surface soils that consist of sandy silts, silty clays, and sandy clays, and underlain at shallow depths by soft or firm bedrock. The groundwater table is at least 100 feet below the ground surface. Perched shallow water and seepage conditions are expected in the SPA, particularly during the winter months.

Naturally Occurring Asbestos

Asbestos is a term applied to several types of naturally occurring fibrous materials found in rock formations throughout California. Exposure and disturbance of rock and soil that contains asbestos can result in the release of fibers to the air and consequent exposure to the public. All types of asbestos are now considered hazardous and pose public health risks. Asbestos is commonly found in ultramafic rock, including serpentine. Two forms of asbestos are associated with serpentinite: chrysotile asbestos and tremolite/actinolite asbestos. In 2000, CGS published a report entitled *Areas more Likely to contain Natural Occurrences of Asbestos in Western El Dorado County, California* (Open-File Report 2000-002), following environmental concerns raised about potential exposures to airborne asbestos near areas where serpentinite was being disturbed in El Dorado County. The map contained in Open-File Report 2000-002 indicates that the proposed off-site roadways into El Dorado Hills from the Folsom Heights Property are located within an area called “Undesignated Map Areas that Probably Do Not Contain Asbestos.”

In 2004, after the Sacramento Metropolitan Air Quality Management District (SMAQMD) determined that naturally occurring asbestos (NOA) was present in the Folsom area, SMAQMD issued Advisory 04-05(2) and commissioned the CGS to perform a study published in 2006 entitled *Relative Likelihood for the Presence of Naturally Occurring Asbestos in Eastern Sacramento County, California* (Special Report 192). The map contained in Special Report 192 indicates that most of the SPA, as well as the proposed off-site Oak Avenue Interchange, Rowberry Drive Overcrossing, East Bidwell/Scott Road Interchange, and Empire Ranch Interchange, are designated “Areas Moderately Likely to Contain NOA.” These areas include metamorphic and igneous rocks. Therefore, the potential exists for NOA to be encountered in rocks of the Copper Hill Volcanics and the Gopher Ridge Volcanics geologic formations, which are present in the SPA.



Source: NRCS Soil Survey Geographic Database (SSURGO) 2007

Soil Types of On- and Off-Site Project Elements **Exhibit 3A.7-2**

Table 3A.7-2
On- and Off-Site Soil Characteristics

Soil Map Unit Name	Shrink-Swell Potential[1]	Permeability[2]	Water Erosion Hazard[3]	Wind Erosion Hazard[4]	Drainage	Concrete Corrosivity	Steel Corrosivity	Limitations
Argonaut gravelly loam, 2–15% slopes	Moderate	Moderately high	Moderate	6	Well drained	Moderate	High	**Buildings:** severe due to shrink-swell and steep slopes **Roads:** severe due to low soil strength, high shrink swell, and steep slopes **Septic Systems:** severe due to slow permeability, shallow depth to bedrock, slopes
Argonaut-Auburn complex, 3–8% slopes	Moderate	Moderately high	Moderate	5	Well drained	Moderate	High	**Buildings:** severe due to shallow bedrock, shrink-swell, and steep slopes **Roads:** severe due to shrink-swell and shallow, hard bedrock **Septic Systems:** severe due to restricted permeability, shallow depth to bedrock
Auburn silt loam, 2–30% slopes	Low	Moderately high	Moderate	5	Well drained	Moderate	Moderate	**Buildings and Roads:** severe due to steep slopes and shallow, hard bedrock **Septic Systems:** severe due to restricted permeability, shallow depth to bedrock, steep slopes
Auburn very rocky silt loam, 2–30% slopes	Low	Moderately high	Moderate	5	Well drained	Moderate	Moderate	**Buildings and Roads:** severe due to steep slopes and shallow, hard bedrock **Septic Systems:** severe due to restricted permeability, shallow depth to bedrock, steep slopes
Auburn-Argonaut-Rock outcrop complex, 8–30% slopes	Low	High	Moderate	5	Well drained	Moderate	Moderate	**Buildings and Roads:** severe due to shallow bedrock, shrink-swell (in the Argonaut soils), and steep slopes **Septic Systems:** severe due to restricted permeability, shallow depth to bedrock, steep slopes
Fiddyment fine sandy loam, 1–8% slopes	Low	Moderately high	Moderate	3	Well drained	Moderate	High	**Buildings:** moderate due to slopes **Roads:** severe due to low soil strength **Septic Systems:** severe due to slow permeability, shallow depth to hardpan, shallow depth to bedrock
Hadselville-Pentz complex, 2–30% slopes	Low	Moderately high	Moderately low	3	Moderately well drained	Moderate	Moderate	**Buildings and Roads:** severe due to steep slopes and shallow, soft bedrock **Septic Systems:** severe due to restricted permeability, shallow depth to bedrock, steep slopes, seepage in bottom layer
Hicksville sandy clay loam, 0–2% slopes	Moderate	Moderately high	Moderately low	5	Moderately well drained	Moderately well drained	Moderate	**Buildings:** severe due to water saturation and moderate shrink-swell **Roads:** severe due to saturation, flooding **Septic Systems:** severe due to flooding, low permeability, shallow depth to bedrock, saturation at shallow depths
Orangevale coarse sandy loam, 2-5% slopes	Moderate	High	Moderately low	3	Well drained	Low	Moderate	**Buildings and Roads:** moderate due to shrink-swell and slopes **Septic Systems:** severe due to low permeability, seepage in bottom layer
Pits	--	--	--	--	--	--	--	**Buildings and Roads:** no limitations **Septic Systems:** no limitations
Red Bluff loam, 2–5% slopes	Moderate	Moderately high	Moderate	5	Well drained	High	High	**Buildings and Roads:** moderate due to shrink-swell and slopes
Red Bluff-Redding complex, 0–5% slopes	Moderate	Moderately high	Moderate	5-6	Well drained	High	High	**Buildings and Roads:** moderate due to shrink-swell and slopes **Septic Systems:** severe due to low permeability
Red Bluff-Xerorthents complex dredge tailings, 2–50% slope	Moderate	Moderately high	--	--	Well drained	--	--	**Buildings and Roads:** severe due to high shrink-swell, steep slopes **Septic Systems:** severe due to low permeability (in the Red Bluff soils), steep slopes (in the Xerorthents soils
Redding gravelly loam, 0–8% slopes	Moderate	Moderately high	Moderately low	6	Moderately well drained	Moderate	High	**Buildings and Roads:** moderate due to shrink-swell and slopes **Septic Systems:** severe due to low permeability, shallow depth to hardpan
Vleck gravelly loam, 2–15% slopes	Moderate	Moderately high	Moderate	6	Moderately well drained	Moderate	High	**Buildings:** severe due to shallow bedrock, shrink-swell, and steep slopes **Roads:** severe due to low soil strength and shrink-swell **Septic Systems:** severe due to low permeability, shallow depth to hardpan, shallow depth to bedrock, slopes
Whiterock loam, 3–30% slopes	Low	High	Moderate	5	Somewhat excessively drained	High	High	**Buildings and Roads:** severe due to shallow bedrock and steep slopes **Septic Systems:** severe due to restricted permeability, shallow depth to bedrock, steep slopes
Xerorthents dredge tailings, 2–50% slopes	Low	Very high	--	--	Somewhat excessively drained	--	--	**Septic Systems:** severe due to extremely high permeability and poor filter, steep slopes, seepage in bottom layer

Notes: Because the dredge tailings are disturbed and reworked, representative characteristics are not available.

[1] Based on percentage of linear extensibility. Shrink-swell potential ratings of “moderate” to “very high” can result in damage to buildings, roads, and other structures.

[2] Based on standard U.S. Department of Agriculture (USDA) saturated hydraulic conductivity (Ksat) class limits; Ksat refers to the ease with which pores in a saturated soil transmit water.

[3] Based on the erosion factor “Kw whole soil,” which is a measurement of relative soil susceptibility to sheet and rill erosion by water.

[4] The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible.

Source: NRCS 2009

Based on Special Report 192, SMAQMD issued Advisory 06-03 declaring that "Areas Moderately Likely to Contain NOA" are subject to the requirements of California Code of Regulations (CCR) Section 93105 (Asbestos Airborne Toxic Control Measure [ATCM] for Construction, Grading, Quarrying, and Surface Mining Operations.) NOA is regulated by the California Air Resources Board (ARB), and concentrations of NOA above 0.25% are considered by ARB as hazardous levels for residential development. The ATCM contains specific requirements for projects where NOA is located, including a Dust Mitigation Plan that must be approved by SMAQMD prior to the start of construction activities. If a registered geologist establishes that asbestos is not present in concentrations above 0.25%, a request for waiver from the ATCM requirements may be submitted to SMAQMD.

Six soil samples from the Sacramento Country Day School property were analyzed for the presence of NOA by Youngdahl Consulting (2003). The Sacramento Country Day School property lies within the Salt Springs Slate geologic formation, and is within an "Area Moderately Likely to Contain NOA" based on Special Report 192. Asbestos was not detected in any of those six samples. However, the remainder of the SPA (approximately 3,420 acres) and the off-site elements have not been sampled for NOA. Therefore, NOA in the SPA could pose a health hazard to construction workers and future residents if present in concentrations above 0.25%, when fragments could become airborne and inhaled. (See also Section 3A.2, "Air Quality – Land," for additional discussion and mitigation measures regarding NOA.)

Expansive Soils

Expansive soils are composed largely of clays, which greatly increase in volume when saturated with water and shrink when dried. Because of this effect, building foundations may rise during the rainy season and fall during the dry season. If this expansive movement varies underneath different parts of a single building, foundations may crack, structural portions of the building may be distorted, and doors and windows may become warped so that they no longer function properly. The potential for soil to undergo shrink and swell is greatly enhanced by the presence of a fluctuating, shallow groundwater table. Changes in the volume of expansive soils can result in the consolidation of soft clays after the lowering of the water table or the placement of fill.

Based on a review of NRCS (2009) soil survey data and the Preliminary Geotechnical Engineering Reports prepared by Wallace Kuhl & Associates (2004, 2005, 2008) and Youngdahl Consulting Group (2003), near-surface soils in the SPA have a moderate to high shrink-swell potential, meaning that they have a high clay content and therefore would be capable of exerting substantial expansion pressures on structural foundations and exterior flatwork. These soils would be expected to undergo volume changes with increasing or decreasing soil moisture content.

Soil Limitations for Septic Systems

For a septic system to function properly, soils must "perc" – that is, a certain volume of water must flow through the soil in a certain time period, as determined by a licensed soils or geotechnical engineer. Wastewater is "treated" as soil bacteria feed on the waste material and in the process, break down the material into more basic elements that are dispersed into the lower layers of the soil horizon. If wastewater percolates through the soil too quickly, the bacteria do not have enough time to digest the material. On the other hand, if wastewater percolates through the soil too slowly, the bacteria are killed by the lack of oxygen. Most of the SPA soils consist of a shallow layer of silt, sand, or clay, underlain by bedrock. Most of the shallow soils have a low permeability and are subject to water seepage (a high water holding capacity) and thus tend to "perc" too slowly, rendering them unsuitable for septic systems. Most of the bedrock soils have extremely high permeability (a low water holding capacity) and thus tend to "perc" too quickly, rendering them unsuitable for septic systems. Based on a review of NRCS soil data (see Table 3A.7-2), the entire SPA rated with a severe limitation because the soils are unsuitable for conventional septic systems. Neither the Proposed Project nor any of the action alternatives would require the use of septic systems. However, continued development under the existing Sacramento County Ag-80 zoning would require the use of septic systems under the No Project Alternative.

MINERAL RESOURCES

Under the Surface Mining and Reclamation Act (SMARA), the State Mining and Geology Board may designate certain mineral deposits as being regionally significant to satisfy future needs. The Board's decision to designate an area is based on a classification report prepared by CGS and on input from agencies and the public. The SPA lies within the designated Sacramento-Fairfield Production-Consumption Region for Portland cement concrete aggregate, which includes all designated lands within the marketing area of the active aggregate operations supplying the Sacramento-Fairfield urban center.

In compliance with SMARA, the California Division of Mines and Geology (CDMG) has established the classification system shown in Table 3A.7-3 to denote both the location and significance of key extractive resources.

Table 3A.7-3
California Division of Mines and Geology Mineral Land Classification System

Classification	Description
MRZ-1	Areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence
MRZ-2	Areas where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists
MRZ-3	Areas containing mineral deposits, the significance of which cannot be evaluated from existing data
MRZ-4	Areas where available data are inadequate for placement in any other mineral resource zone

Note: MRZ = Mineral Resource Zone
Source: Dupras 1999

The northwestern portion of the SPA is located in the Alder Creek watershed, adjacent to an ancient channel of the American River. Over many thousands of years, weathering eroded various auriferous (gold-bearing) formations in the Sierra Nevada, thus allowing gold flakes, nuggets, and gold-bearing rocks to be carried along in glacial meltwater and in river channels. Depending on the volume of water and the rate of flow, the gold was eventually deposited on the surfaces of ancient river channels. Auriferous rocks eventually became deposited at the mouths of rivers as alluvial fans. Areas around Folsom, Prairie City, and Rancho Cordova, where the American River emptied into the Sacramento Valley, eventually became well known locations for gold miners.

Within weeks after gold was found at Sutter's Mill on the South Fork of the American River in 1848, Mormon Island (now buried underneath Folsom Lake) was being mined. Subsequent gold discoveries and mining operations developed at Beal's Bar, Rattlesnake Bar, Negro Bar, Whiskey Bar, and Prairie City. When the Natomas Water and Mining Company began supplying water to the area around Prairie City in 1853, miners began staking claims along the company's canal. When those claims were exhausted, the Natomas Company (as it was later called) began dredging the nearby ancient American River deposits. Dredging operations in the SPA occurred between 1915 and 1962. Today, as mentioned above, dredge tailings are located along Alder Creek. (See Section 3A.5, "Cultural Resources – Land," for a more detailed discussion of historical mining operations.)

The piles of cobbles deposited during dredging operations in the Rancho Cordova area have proved to be a valuable source of sand and gravel. Nearby aggregate deposits in Rancho Cordova were addressed in the Sacramento County General Plan as the county's "primary remaining aggregate deposits."

Sand and gravel mined in Sacramento County and in Rancho Cordova is used for construction. Construction aggregates are an important building material used in Portland cement concrete, asphalt concrete, plaster, and stucco, and as a road base material. In terms of volume and price, there is no economically feasible substitute for

aggregate products in the construction industry. However, the City and County General Plans also recognize that aggregate mining is an interim land use rather than a final use, and recognize the importance of balancing aggregate-mining needs with those of urban development.

As shown in Exhibit 3A.7-3, a small portion of the extreme western edge of the SPA is classified by CDMG as MRZ-1, areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence. However, the majority of the SPA is classified by CDMG as MRZ-3, "areas containing mineral deposits, the significance of which cannot be evaluated from existing data." Based on a site visit performed by EDAW/AECOM (now AECOM) in 2007, information contained in the preliminary geotechnical engineering reports, and conversation with the project engineer (MacKay & Somps), the only area of the SPA that contains any substantial amount of aggregate resources (cobbles from dredger mining operations) is located in and around the Alder Creek drainage.

Land immediately east of the SPA (in El Dorado County), which is also within the Sacramento-Fairfield Production-Consumption Region, is zoned MRZ-3 and has already been developed with residential housing. Land north of the SPA consists of U.S. Highway 50 (U.S. 50) and the urbanized City of Folsom.

Land immediately west of the SPA, adjacent to Prairie City Road, is owned by Aerojet General Corporation. The northern portion of this land, near U.S. 50, is part of the Easton Project and is planned for residential/commercial development. As shown in Exhibit 3A.7-3, the land on the west side of Prairie City Road is classified by CDMG with the same mineral resource zones as the SPA: MRZ-1 and MRZ-3.

Land south of the SPA, south of White Rock Road, is currently undeveloped and is outside of the Sacramento County Urban Services Boundary. As shown on Exhibit 3A.7-3, land south of the SPA is zoned MRZ-3. The Teichert and Walltown hard rock quarries have been proposed in this area at two locations approximately 2.3 miles south of the SPA. Those quarry proposals are currently undergoing environmental review. There is an existing Granite Construction Company aggregate operation approximately 0.5 southwest of the SPA, immediately south of White Rock Road. Both Teichert and Granite own and operate several aggregate mining and processing facilities in the Rancho Cordova area.

As also shown in Exhibit 3A.7-3, the western edge of the SPA is zoned MRZ-3 for kaolin clay. This zoning was assigned by CDMG because of the presence of the Ione Formation, which does contain kaolin clay in other locations in the state. Kaolin clay is formed from weathering of aluminous minerals such as feldspar with kaolinite as its principal constituent. Kaolin is used as an anti-caking agent in processed foods and an additive to cosmetics, toiletries, and health products. It is also used as an "inert" carrier in some pesticides, and enhances the performance of some microbial products. The geotechnical reports prepared for the project to date do not cover the area of the SPA that is designated MRZ-3 for kaolin clay. Therefore, it cannot be ascertained at this time whether or not a valuable deposit of kaolin clay is present in the SPA.

PALEONTOLOGICAL RESOURCES

Paleontological Resource Inventory Methods

A stratigraphic inventory was completed to develop a baseline paleontological resource inventory of the SPA and surrounding area by rock unit and to assess the potential paleontological productivity of each rock unit. Research methods included a review of published and unpublished literature and a search for recorded fossil sites at the University of California Museum of Paleontology (UCMP). These tasks complied with Society of Vertebrate Paleontology guidelines (1995).

Stratigraphic Inventory

Geologic maps and reports covering the geology of the SPA and surrounding area were reviewed to determine the exposed rock units and to delineate their respective aerial distributions in the project area.

Paleontological Resource Inventory

Published and unpublished geological and paleontological literature were reviewed to document the number and locations and previously recorded fossil sites from rock units exposed in and near the SPA and vicinity, as well as the types of fossil remains each rock unit has produced. The literature review was supplemented by an archival search conducted at the UCMP in Berkeley, California, on August 12, 2009.

Paleontological Resource Field Survey

Portions of the ground surface were completely obscured by vegetation; in those areas where the ground surface was visible, no evidence of paleontological resources was present during a reconnaissance-level field survey conducted by EDAW/AECOM (now AECOM) in June 2007.

Paleontological Resource Assessment Criteria

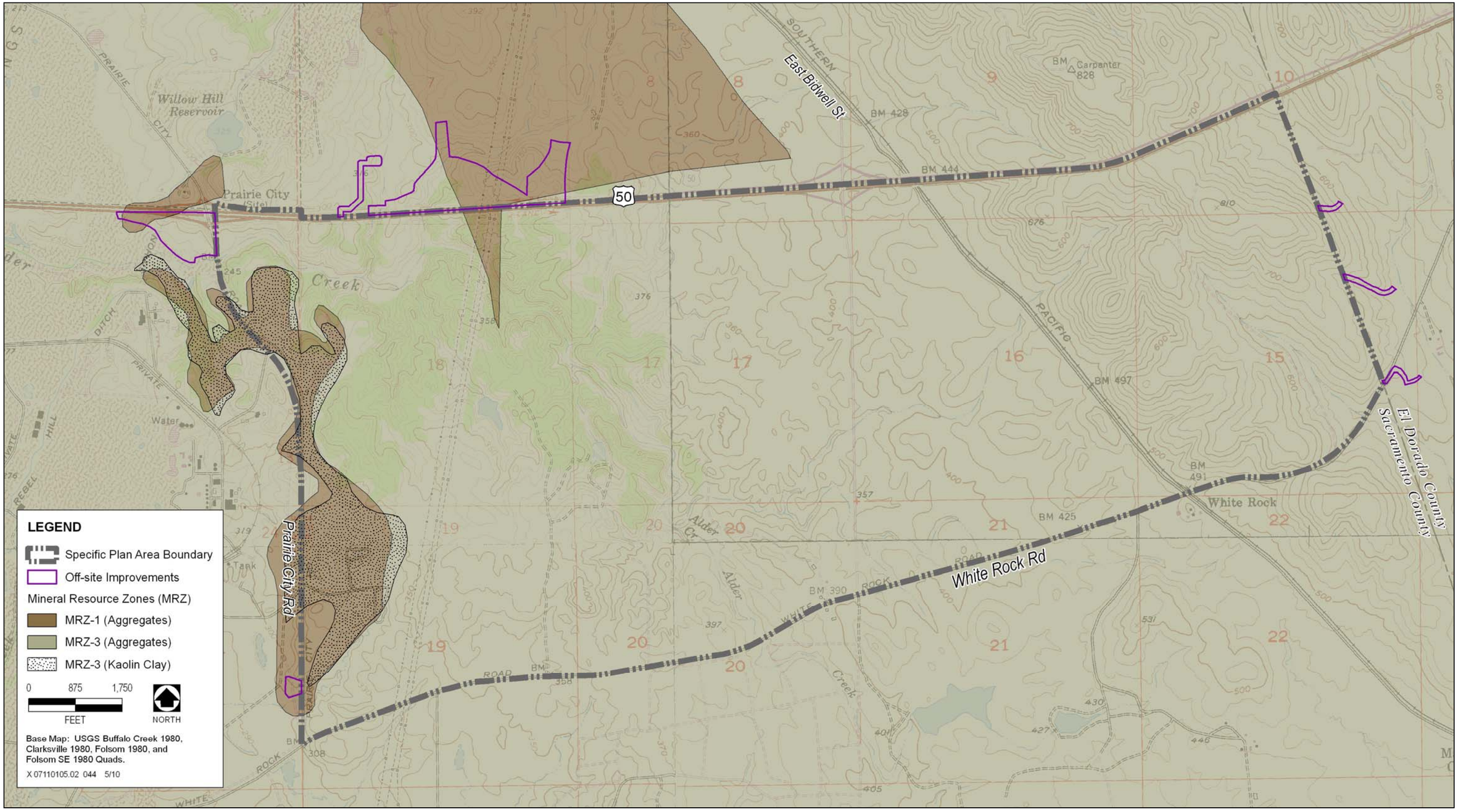
The potential paleontological importance of the SPA can be assessed by identifying the paleontological importance of exposed rock units within the SPA. Because the areal distribution of a rock unit can be easily delineated on a topographic map, this method is conducive to delineating parts of the SPA that are of higher and lower sensitivity for paleontological resources and to delineating parts of the SPA that may require monitoring during construction.

A paleontologically important rock unit is one that has a high potential paleontological productivity rating and is known to have produced unique, scientifically important fossils. The potential paleontological productivity rating of a rock unit exposed in the SPA refers to the abundance/densities of fossil specimens and/or previously recorded fossil sites in exposures of the unit in and near the SPA. Exposures of a specific rock unit in the SPA are most likely to yield fossil remains representing particular species in quantities or densities similar to those previously recorded from the unit in and near the SPA.

An individual vertebrate fossil specimen may be considered unique or significant if it is identifiable and well preserved and it meets one of the following criteria:

- a type specimen (i.e., the individual from which a species or subspecies has been described);
- a member of a rare species;
- a species that is part of a diverse assemblage (i.e., a site where more than one fossil has been discovered) wherein other species are also identifiable, and important information regarding life history of individuals can be drawn;
- a skeletal element different from, or a specimen more complete than, those now available for its species; or
- a complete specimen (i.e., all or substantially all of the entire skeleton is present).

For example, identifiable vertebrate marine and terrestrial fossils are generally considered scientifically important because they are relatively rare. The value or importance of different fossil groups varies, depending on the age and depositional environment of the rock unit that contains the fossils, their rarity, the extent to which they have already been identified and documented, and the ability to recover similar materials under more controlled conditions, such as part of a research project. Marine invertebrate fossil specimens are generally common, well developed, and well documented. They would generally not be considered a unique paleontological resource.



Source: Dupras 1999

Mineral Resource Zones of On- and Off-Site Project Components **Exhibit 3A.7-3**

The tasks listed below were completed to establish the paleontological importance of each rock unit exposed at or near the SPA.

- The potential paleontological productivity of each rock unit was assessed, based on the density of fossil remains previously documented within the rock unit.
- The potential for a rock unit exposed in the SPA to contain a unique paleontological resource was considered.

Paleontologic Resource Inventory Results

Stratigraphic Inventory

Regional and local surficial geologic mapping and correlation of the various geologic units in the SPA and vicinity have been provided at a scale of 1:48,000 by Loyd (1984) and 1:250,000 by Wagner et al. (1987).

Paleontological Resource Inventory and Assessment by Rock Unit

Based on a record search conducted at UCMP (UCMP 2009), there are no previously recorded fossil localities within the SPA or the off-site elements.

Mehrten Formation

Vertebrate mammal and plant fossils have been reported from the Mehrten Formation throughout the Sierra Nevada foothills and the eastern margin of the Central Valley. The closest recorded vertebrate fossil locality within the Mehrten Formation to the SPA (V-76050) is near Camanche Reservoir, approximately 25 miles south of the SPA, where a specimen of Pliohippus (horse) was recovered. Other vertebrate fossils have been recovered from the Mehrten Formation from over 40 locations in Calaveras, San Joaquin, Stanislaus, Tuolumne, and Merced Counties (UCMP 2009). In addition, several specimens of plant fossils have been recovered locally from the Mehrten Formation in Granite Bay, Roseville, and Rocklin (Sierra College Natural History Museum 2009). Because of the large number of fossils that have been recovered from the Mehrten Formation, it is considered a paleontologically sensitive rock unit under the Society of Vertebrate Paleontology guidelines (1995).

Ione Formation

Vertebrate mammal, plant, and invertebrate fossils have been reported from the Ione Formation throughout the Central Valley. The closest recorded vertebrate fossil locality within the Ione Formation to the SPA (V-6823 through 6833) is located in Pittsburg, approximately 48 miles southwest of the SPA. This locality yielded over 20 specimens of cartilaginous fish (such as skates and rays), bony fish, birds, and cetacea (dolpins, porpoises, and whales). However, numerous plant fossils have been recovered from the Ione Formation at locations closer to the SPA, including Ione (P-43,), Iowa hill (P-43, PA-84, PA-289, and PA-523), and Camanche Reservoir (P-332). Other vertebrate mammal, plant, and invertebrate fossils have been recovered from the Ione Formation from over 300 locations in Nevada, Contra Costa, Placer, Amador, Butte, Alameda, Merced, Tuolumne, Sutter, Sierra, Plumas, Calaveras, Kern, and Stanislaus Counties (UCMP 2009). Because of the large number of fossils that have been recovered from the Ione Formation, it is considered a paleontologically sensitive rock unit under the Society of Vertebrate Paleontology guidelines (1995).

Salt Springs Slate, Copper Hill Volcanics, Gopher Ridge Volcanics

These formations consist of Jurassic-age rocks that formed at depth beneath the earth's surface and have since been deformed and metamorphosed. The UCMP database does not contain any records of vertebrate or plant fossils within these formations. Because of the nature of these rock formations and the lack of previously recorded vertebrate or plant fossil localities, these formations are not considered to be paleontologically sensitive rock units under the Society of Vertebrate Paleontology guidelines (1995).

3A.7.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Earthquake Hazards Reduction Act

In October 1977, the U.S. Congress passed the Earthquake Hazards Reduction Act to reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards reduction program. To accomplish this goal, the act established the National Earthquake Hazards Reduction Program (NEHRP). This program was substantially amended in November 1990 by the National Earthquake Hazards Reduction Program Act (NEHRPA), which refined the description of agency responsibilities, program goals, and objectives.

The mission of NEHRP includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improved building codes and land use practices; risk reduction through post earthquake investigations and education; development and improvement of design and construction techniques; improved mitigation capacity; and accelerated application of research results. The NEHRPA designates the Federal Emergency Management Agency as the lead agency of the program and assigns several planning, coordinating, and reporting responsibilities. Other NEHRPA agencies include the National Institute of Standards and Technology, National Science Foundation, and USGS.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) (California Public Resources Code [PRC] Sections 2621–2630) was passed in 1972 to mitigate the hazard of surface faulting to structures designed for human occupancy. The main purpose of the law is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The law addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards. The Alquist-Priolo Act requires the State Geologist to establish regulatory zones known as Earthquake Fault Zones around the surface traces of active faults and to issue appropriate maps. The maps are distributed to all affected cities, counties, and state agencies for their use in planning efforts. Before a project can be permitted in a designated Alquist-Priolo Earthquake Fault Zone, cities and counties must require a geologic investigation to demonstrate that proposed buildings would not be constructed across active faults.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 (California PRC Sections 2690–2699.6) addresses earthquake hazards from nonsurface fault rupture, including liquefaction and seismically induced landslides. The act established a mapping program for areas that have the potential for liquefaction, landslide, strong ground shaking, or other earthquake and geologic hazards. The act also specifies that the lead agency for a project may withhold development permits until geologic or soils investigations are conducted for specific sites and mitigation measures are incorporated into plans to reduce hazards associated with seismicity and unstable soils.

National Pollutant Discharge Elimination System Permit

In California, the State Water Resources Control Board (SWRCB) administers regulations promulgated by the U.S. Environmental Protection Agency (55 Code of Federal Regulations [CFR] 47990) requiring the permitting of stormwater-generated pollution under the National Pollutant Discharge Elimination System (NPDES). In turn, the SWRCB's jurisdiction is administered through nine regional water quality control boards. Under these Federal regulations, an operator must obtain a general permit through the NPDES Stormwater Program for all construction activities with ground disturbance of 1 acre or more. The general permit requires the implementation

of best management practices (BMPs) to reduce sedimentation into surface waters and to control erosion. One element of compliance with the NPDES permit is preparation of a storm water pollution prevention plan (SWPPP) that addresses control of water pollution, including sediment, in runoff during construction. (See Section 3A.9, "Hydrology and Water Quality – Land," for more information about the NPDES and SWPPPs.)

California Building Standards Code

The California Building Standards Commission (BSC) is responsible for coordinating, managing, adopting, and approving building codes in California. In July 2007, the BSC adopted and published the 2006 International Building Code as the 2007 CBC. This new code became effective on January 1, 2008, and updated all the subsequent codes under the California Code of Regulations (CCR) Title 24. Sutter County has adopted the 2007 CBC. The State of California provides minimum standards for building design through the 2007 CBC (CCR, Title 24). Where no other building codes apply, Chapter 29 of the 2007 CBC regulates excavation, foundations, and retaining walls. The CBC applies to building design and construction in the state and is based on the Federal Uniform Building Code (UBC) used widely throughout the country (generally adopted on a state-by-state or district-by-district basis). The CBC has been modified for California conditions with numerous more detailed or more stringent regulations.

The state earthquake protection law (California Health and Safety Code Section 19100 et seq.) requires that structures be designed to resist stresses produced by lateral forces caused by wind and earthquakes. The 2007 CBC replaces the previous "seismic zones" (assigned a number from 1 to 4, where 4 required the most earthquake-resistant design) with new Seismic Design Categories A through F (where F requires the most earthquake-resistant design) for structures designed for a project site. With the shift from seismic zones to seismic design, the CBC philosophy has shifted from "life safety design" to "collapse prevention," meaning that structures are designed for prevention of collapse for the maximum level of ground shaking that could reasonably be expected to occur at a site. Chapter 16 of the CBC specifies exactly how each seismic design category is to be determined on a site-specific basis through the site-specific soil characteristics and proximity to potential seismic hazards.

Chapter 18 of the CBC regulates the excavation of foundations and retaining walls. This chapter regulates the preparation of a preliminary soil report, engineering geologic report, geotechnical report, and supplemental ground-response report. Chapter 18 also regulates analysis of expansive soils and the determination of the depth to groundwater table. For Seismic Design Category C, Chapter 18 requires analysis of slope instability, liquefaction, and surface rupture attributable to faulting or lateral spreading. For Seismic Design Categories D, E, and F, Chapter 18 requires these same analyses plus an evaluation of lateral pressures on basement and retaining walls, liquefaction and soil strength loss, and lateral movement or reduction in foundation soil-bearing capacity. It also requires addressing mitigation measures to be considered in structural design. Mitigation measures may include ground stabilization, selection of appropriate foundation type and depths, selection of appropriate structural systems to accommodate anticipated displacements, or any combination of these measures. The potential for liquefaction and soil strength loss must be evaluated for site-specific peak ground acceleration magnitudes and source characteristics consistent with the design earthquake ground motions. Peak ground acceleration must be determined from a site-specific study, the contents of which are specified in CBC Chapter 18.

Finally, Appendix Chapter J of the 2007 CBC regulates grading activities, including drainage and erosion control and construction on unstable soils, such as expansive soils and areas subject to liquefaction.

California Surface Mining and Reclamation Act

SMARA (California PRC Section 2710 et seq.) was enacted by the California Legislature in 1975 to regulate activities related to mineral resource extraction. The act requires the prevention of adverse environmental effects caused by mining, the reclamation of mined lands for alternative land uses, and the elimination of hazards to public health and safety from the effects of mining activities. At the same time, SMARA encourages both the

conservation and the production of extractive mineral resources, requiring the State Geologist to identify and attach levels of significance to the state's varied extractive resource deposits. Under SMARA, the mining industry in California must plan adequately for the reclamation of mined sites for beneficial uses and provide financial assurances to guarantee that the approved reclamation will actually be implemented. The requirements of SMARA must be implemented by the local lead agency with permitting responsibility for the proposed mining project.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

Sacramento County General Plan

The following goals and policies of the Sacramento County General Plan (1998) are applicable to the No Project Alternative, and only to the proposed off-site detention basin east of Prairie City Road under all five action alternatives.

Safety Element

GOAL: Minimize the loss of life, injury, and property damage due to seismic and geological hazards.

- **Policy SA-1:** The County shall require geotechnical reports and impose the appropriate mitigation measures for new development located in seismic and geologically sensitive areas.

Conservation Element

Objective: Orderly extraction of minerals and subsequent reclamation of mined areas with minimal adverse impacts on aquifers, streams, scenic values, and surrounding residential uses.

- **Policy CO-43:** Surface mining operations shall be subject to appropriate mitigation measures and shall avoid creating any significant nuisances, hazards, and adverse environmental impacts unless the Board of Supervisors makes the findings to override as required by CEQA Guidelines Section 15091.

Objective: Sequential timing for mining of aggregate areas linked to the timing of urban development.

- **Policy CO-48:** Due to predicted shortages of aggregates in Sacramento County, mining of mineral resources within the Urban Services Boundary (USB) is encouraged, where consistent with Habitat Conservation Plans or other County initiated conservation programs and where such mining does not preclude successful completion of these plans, to avoid the potential loss of these mineral resources as a result of potential urban development. This policy is not intended to preclude mining outside of the USB.

Objective: Appropriate soil conservation practices regularly used by farmers and ranchers.

Objective: Widespread farmer participation in Resource Conservation District programs.

- **CO-58:** Work with rural landowners and existing Resource Conservation Districts to promote soil conservation practices.

Sacramento County Zoning Code Title II, Article 4, Surface Mining

The County has adopted its own SMARA ordinance, which is modeled after the state's SMARA guidelines (see above). The County's SMARA ordinance is designed to protect mineral resources from incompatible land uses, to manage the mineral resources, to assure the County of an adequate supply of these resources with due consideration for the environment, and to provide for the restoration of mined lands for future use. A Conditional Use Permit is required for surface-mining operations in Sacramento County.

Sacramento County Grading Ordinance

The County's Land Grading and Erosion Control Ordinance (County Code, Title 16, Chapter 16.44) was enacted for the purpose of minimizing damage to surrounding properties and public rights-of-way; limiting degradation of the water quality of watercourses; and curbing the disruption of drainage system flow caused by the activities of clearing, grubbing, grading, filing, and excavating land. The ordinance includes administrative procedures, minimum standards of review, and implementation and enforcement procedures for the control of erosion and sedimentation that are directly related to land-grading activities.

El Dorado County General Plan

The following goals and policies of the El Dorado County General Plan (2004) are applicable only to the two local roadway connections from the Folsom Heights property off-site into El Dorado Hills under the Proposed Project Alternative. There are no El Dorado County goals and policies that are applicable to the No Project Alternative or the other four action alternatives.

Public Health, Safety, and Noise Element

GOAL 6.3: Geologic and Seismic Hazards. Minimize the threat to life and property from seismic and geologic hazards.

- **Policy 6.3.1.1:** The County shall require that all discretionary projects and all projects requiring a grading permit, or a building permit that would result in earth disturbance, that are located in areas likely to contain naturally occurring asbestos (based on mapping developed by the California Department of Conservation [DOC]) have a California-registered geologist knowledgeable about asbestos-containing formations inspect the project area for the presence of asbestos using appropriate test methods. The County shall amend the Erosion and Sediment Control Ordinance to include a section that addresses the reduction of thresholds to an appropriate level for grading permits in areas likely to contain naturally occurring asbestos (based on mapping developed by the DOC). The Department of Transportation and the County Air Quality Management District shall consider the requirement of posting a warning sign at the work site in areas likely to contain naturally occurring asbestos based on the mapping developed by the DOC.

- **Policy 6.3.1.2:** The County shall establish a mandatory disclosure program, where potential buyers and sellers of real property in all areas likely to contain naturally occurring asbestos (based on mapping developed by the California Department of Conservation [DOC]) are provided information regarding the potential presence of asbestos subject to sale. Information shall include potential for exposure from access roads and from disturbance activities (e.g., landscaping).

Conservation and Open Space Element

GOAL 7.1: Soil Conservation. Conserve and protect the County's soil resources.

- **Policy 7.1.2.2:** Discretionary and ministerial projects that require earthwork and grading, including cut and fill for roads, shall be required to minimize erosion and sedimentation, conform to natural contours, maintain natural drainage patterns, minimize impervious surfaces, and maximize the retention of natural vegetation. Specific standards for minimizing erosion and sedimentation shall be incorporated into the Zoning Ordinance.

- **Policy 7.1.2.3:** Enforce Grading Ordinance provisions for erosion control on all development projects and adopt provisions for ongoing, applicant-funded monitoring of project grading.

El Dorado County Grading Ordinance

This ordinance was enacted for the purpose of regulating grading within the unincorporated area of El Dorado County to safeguard life, limb, health, property, and public welfare; to avoid pollution of watercourses; and to ensure that the intended use of a graded site is consistent with the El Dorado County General Plan, any specific plans adopted thereto, the adopted Storm Water Management Plan, California Fire Safe Standards and applicable El Dorado County ordinances including the Zoning Ordinance and the CBC. A project applicant must submit grading plans and other pieces of information required by Grading, Erosion and Sediment Control Chapter of the Design and El Dorado County Improvement Standards Manual.

City of Folsom General Plan

There are no goals or policies of the City of Folsom General Plan (1993) that are applicable to the Proposed Project or any of the alternatives under consideration.

City of Folsom Hillside Development Guidelines

On February 14, 1995, the City of Folsom Planning Department adopted Resolution No. 4604—Hillside Development Guidelines—the purpose of which is to illustrate key design principles and issues that City staff will use in evaluating applications for development of any site within hillside areas of the City. The guidelines address street design, grading, site design, parking, drainage, architecture, landscaping, visual impact, and preservation of natural features, and are based on the City's Hillside Development Procedures and Standards Ordinance (Ordinance No. 798).

Professional Paleontological Standards

The Society of Vertebrate Paleontology (1995, 1996), a national scientific organization of professional vertebrate paleontologists, has established standard guidelines that outline acceptable professional practices in the conduct of paleontological resource assessments and surveys, monitoring and mitigation, data and fossil recovery, sampling procedures, specimen preparation, analysis, and curation. Most practicing professional paleontologists in the nation adhere to the Society of Vertebrate Paleontology assessment, mitigation, and monitoring requirements, as specifically spelled out in its standard guidelines.

3A.7.3 Environmental Consequences and Mitigation Measures

Thresholds of Significance

Geology, Soils, and Minerals

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. These thresholds also encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. The Proposed Project or alternatives under consideration were determined to result in a significant impact related to geology, soils, or mineral resources if they would do any of the following:

- expose people, property, or structures to potential substantial adverse impacts, including the risk of loss, injury, or death involving:

    - rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault;

- strong seismic ground shaking;
- seismic-related ground failure, including liquefaction; or
- landslides.

- result in substantial soil erosion or the loss of topsoil.
- be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.
- be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.
- have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.
- result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state or a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

Paleontological Resources

Based on the environmental checklist in Appendix G of the State CEQA Guidelines, a project would have a significant impact on paleontological resources if it would directly or indirectly destroy a unique paleontological resource or site. For the purposes of this EIR/EIS, this threshold also encompasses the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts and applies to the Proposed Project and alternatives under consideration. A "unique paleontological resource or site" is one that is considered significant under the professional paleontological standards described below.

An individual vertebrate fossil specimen may be considered unique or significant if it is identifiable and well preserved, and it meets one of the following criteria:

- a type specimen (i.e., the individual from which a species or subspecies has been described);
- a member of a rare species;
- a species that is part of a diverse assemblage (i.e., a site where more than one fossil has been discovered) wherein other species are also identifiable, and important information regarding life history of individuals can be drawn;
- a skeletal element different from, or a specimen more complete than, those now available for its species; or
- a complete specimen (i.e., all or substantially all of the entire skeleton is present).

The value or importance of different fossil groups varies depending on the age and depositional environment of the rock unit that contains the fossils, their rarity, the extent to which they have already been identified and documented, and the ability to recover similar materials under more controlled conditions (such as for a research project). Marine invertebrates are generally common; the fossil record is well developed and well documented, and they would generally not be considered a unique paleontological resource. Identifiable vertebrate marine and terrestrial fossils are generally considered scientifically important because they are relatively rare.

ANALYSIS METHODOLOGY

Evaluation of potential geology, soils, and minerals impacts for the Proposed Project and alternatives under consideration relied in part on the following five reports:

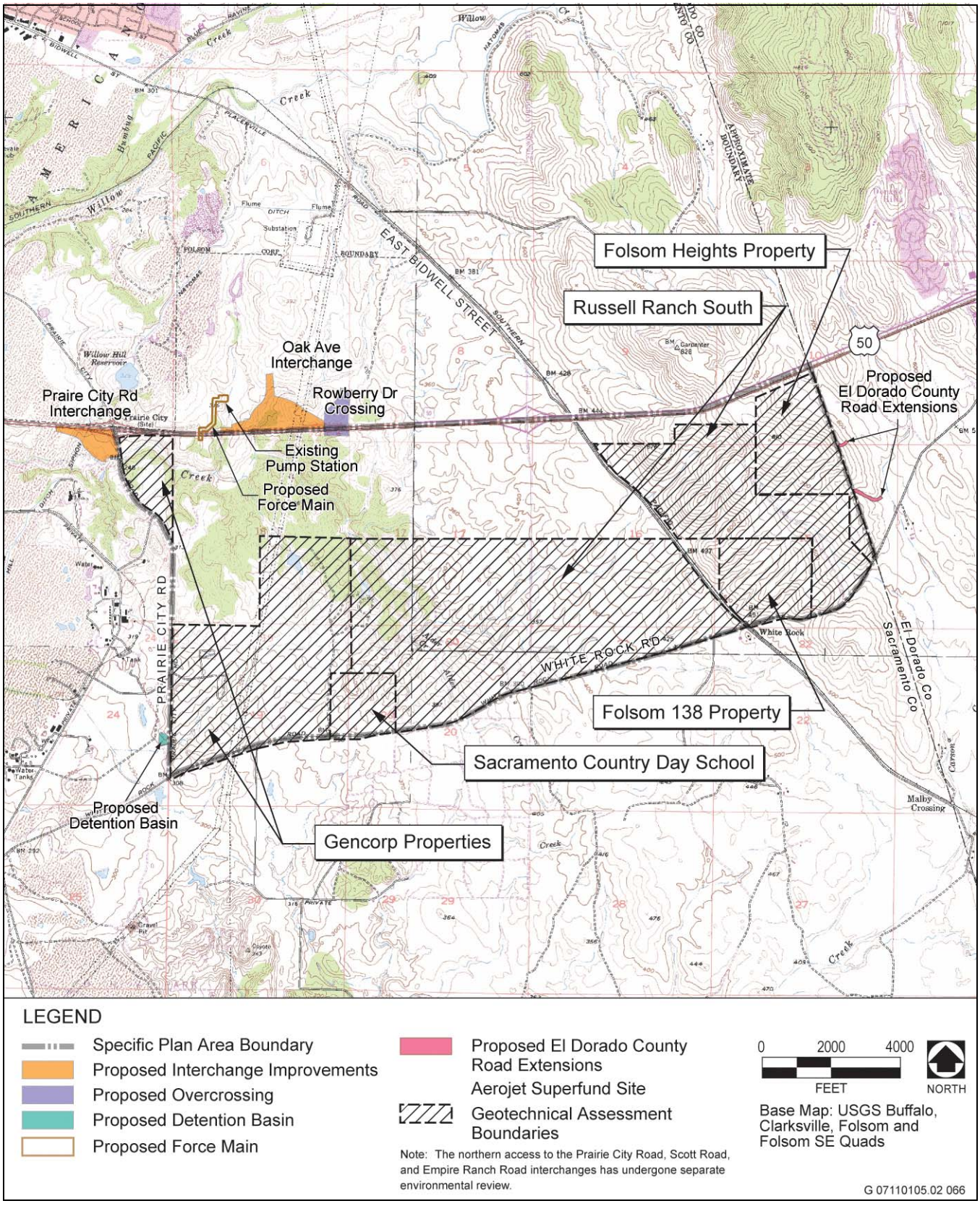
- Youngdahl Consulting Group, Inc. 2003 (August). *Preliminary Geotechnical Engineering Study, Sacramento Country Day School.*
- Youngdahl Consulting Group, Inc. 2007 (May). *Preliminary Geotechnical Engineering Study, White Rock Road/Scott Road 1,440 Acres.*
- Wallace Kuhl & Associates, Inc. 2004 (August). *Preliminary Geotechnical Engineering Report, Folsom 138 Property.*
- Wallace Kuhl & Associates, Inc. 2005 (August). Preliminary Geotechnical Engineering Report, *Folsom Heights.*
- Wallace Kuhl & Associates, Inc. 2008 (January). *Preliminary Geotechnical Engineering Report, Gencorp South Folsom Sphere of Influence Property.*

Approximately 65% of the SPA is covered by these five reports (see Exhibit 3A.7-4), which are included as Appendix F1 through Appendix F5 of this EIR/EIS. The remainder of the SPA, and the off-site elements, have not been evaluated by a geotechincal engineer. The analysis prepared for this EIR/EIS also relied on NRCS soil survey data ("Web Soil Survey"), and published geologic literature and maps. The information obtained from these sources was reviewed and summarized to present the existing conditions and to identify potential environmental impacts, based on the thresholds of significance presented in this section. Impacts associated with geology, soils, and mineral resources that could result from project construction and operational activities were evaluated qualitatively based on site conditions; expected construction practices; materials, locations, and duration of project construction and related activities; and a field visit. Conceptual grading exhibits for the SPA (MacKay and Somps 2008) were also used to evaluate potential impacts. These conceptual exhibits are provided in Appendix F6.

In its standard guidelines for assessment and mitigation of adverse impacts on paleontological resources, the Society of Vertebrate Paleontology (1995) established three categories of sensitivity for paleontological resources: high, low, and undetermined. Areas where fossils have been previously found are considered to have a high sensitivity and a high potential to produce fossils. Areas that are not sedimentary in origin and that have not been known to produce fossils in the past typically are considered to have low sensitivity. Areas that have not had any previous paleontological resource surveys or fossil finds are considered to be of undetermined sensitivity until surveys and mapping are performed to determine their sensitivity. After reconnaissance surveys, observation of exposed cuts, and possibly subsurface testing, a qualified paleontologist can determine whether the area should be categorized as having high or low sensitivity. In keeping with the significance criteria of the Society of Vertebrate Paleontology (1995), all vertebrate fossils are generally categorized as being of potentially significant scientific value.

ISSUES NOT DISCUSSED FURTHER IN THIS EIR/EIS

Risks to people or structures caused by surface fault rupture—The SPA is located approximately 50 miles from the nearest Alquist-Priolo Earthquake Fault Zone, and the SPA is not underlain by or adjacent to any known faults. Because the damage from surface fault rupture is generally limited to a linear zone a few yards wide, the potential for surface fault rupture to cause damage to proposed structures is negligible and this impact is not evaluated further in this EIR/EIS.



Source: Wallace, Kuhl & Associates 2004, 2005, 2008; Youngdahl & Associates 2003, 2007; Adapted by AECOM 2009

Site Coverage under Existing Geotechnical Reports **Exhibit 3A.7-4**

IMPACT ANALYSIS

Impacts that would occur under each alternative development scenario are identified as follows: NP (No Action/No Project), NCP (No USACE Permit), PP (Proposed Project/Action), RIM (Resource Impact Minimization), CD (Centralized Development), and RHD (Reduced Hillside Development). The impacts for each alternative are compared relative to the PP at the end of each impact conclusion (i.e., similar, greater, lesser).

IMPACT 3A.7-1 Possible Risks to People and Structures Caused by Strong Seismic Ground Shaking. *The SPA is located in an area of generally low seismic activity; however, structures in the SPA could be subject to seismic ground shaking from an earthquake along active faults in Lake Tahoe.*

On-Site and Off-Site Elements

NP

Under the No Project Alternative, up to 44 rural residences could be developed and agricultural activities could continue under the existing AG-80 land use and zoning designation, and no off-site water facilities would be constructed. The SPA is not located within a known fault zone, or within any faults known to be active during Holocene time. The West Branch of the Bear Mountains Fault is located approximately 5 miles east of the eastern property boundary (Wallace Kuhl & Associates 2005); however, Jennings (1994) does not indicate that fault activity has occurred within the last 11,000 years, and the slip rate of the Foothills fault system is extremely low (0.05 millimeters per year), which is well below the planning threshold for major earthquakes (USGS 2000). As shown in Table 3A.7-1, the Dunnigan Hills fault in Woodland, approximately 40 miles west of the SPA, is the nearest fault that is known to have been active within the last 11,000 years (Holocene time). Other faults that have been zoned as "active" by the CGS are located in the Coast Range (approximately 60 miles west of the SPA) or in the vicinity of Lake Tahoe (approximately 60 miles east of the SPA). Because structures in the SPA could be subject to seismic ground shaking and because geotechnical reports have not been prepared for the entire SPA, the potential for damage from strong seismic ground shaking is considered a **direct, potentially significant** impact. **No indirect** impacts would occur. ***[Similar]***

NCP, PP, RIM, CD, RHD

As described above under the No Project Alternative, the SPA and off-site elements are not located within a known fault zone, or within or adjacent to any faults known to be active during Holocene time. Other faults that have been zoned as "active" by the CGS are located in the Coast Range or in the vicinity of Lake Tahoe (see discussion above under the No Project Alternative for distances). However, geotechnical reports have only been prepared for five of the properties within the SPA. Furthermore, three of those reports evaluated the site using the older CBC criteria (before 2008). As stated above in the "Regulatory Framework" section, the 2007 CBC (adopted in 2008) replaced the previous "seismic zones" (assigned a number from 1 to 4, where 4 required the most earthquake-resistant design) with new Seismic Design Categories A–F (where F requires the most earthquake-resistant design) for structures designed for a project site. Chapter 16 of the CBC specifies exactly how each seismic design category is to be determined on a site-specific basis through the site-specific soil characteristics and proximity to potential seismic hazards. Therefore, because structures in the SPA could be subject to seismic ground shaking, because geotechnical reports have not been prepared for the entire SPA, and because three of the extant reports do not conform to the current CBC criteria, the potential for damage from strong seismic ground shaking is considered a **direct, potentially significant** impact. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure 3A.7-1a: Prepare Site-Specific Geotechnical Report per CBC Requirements and Implement Appropriate Recommendations.

Before building permits are issued and construction activities begin any project development phase, the project applicant(s) of each project phase shall hire a licensed geotechnical engineer to prepare a final geotechnical subsurface investigation report for the on- and off-site facilities, which shall be submitted for review and approval to the appropriate City or county department (identified below). The final geotechnical engineering report shall address and make recommendations on the following:

- site preparation;
- soil bearing capacity;
- appropriate sources and types of fill;
- potential need for soil amendments;
- road, pavement, and parking areas;
- structural foundations, including retaining-wall design;
- grading practices;
- soil corrosion of concrete and steel;
- erosion/winterization;
- seismic ground shaking;
- liquefaction; and
- expansive/unstable soils.

In addition to the recommendations for the conditions listed above, the geotechnical investigation shall include subsurface testing of soil and groundwater conditions, and shall determine appropriate foundation designs that are consistent with the version of the CBC that is applicable at the time building and grading permits are applied for. All recommendations contained in the final geotechnical engineering report shall be implemented by the project applicant(s) of each project phase. Special recommendations contained in the geotechnical engineering report shall be noted on the grading plans and implemented as appropriate before construction begins. Design and construction of all new project development shall be in accordance with the CBC. The project applicant(s) shall provide for engineering inspection and certification that earthwork has been performed in conformity with recommendations contained in the geotechnical report.

Mitigation Measure 3A.7-1b: Monitor Earthwork during Earthmoving Activities.

All earthwork shall be monitored by a qualified geotechnical or soils engineer retained by the project applicant(s) of each project phase. The geotechnical or soils engineer shall provide oversight during all excavation, placement of fill, and disposal of materials removed from and deposited on both on- and off-site construction areas.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties, or Caltrans).

Implementation: Project applicant(s) of all project phases.

Timing: Before issuance of building permits and ground-disturbing activities.

Enforcement:

1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.

2. For the two off-site roadway connections from Folsom Heights into El Dorado Hills: El Dorado County Public Works Department.

3. For the off-site detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.

4. For the U.S. 50 interchange improvements: Caltrans.

Implementation of Mitigation Measures 3A.7-1a and 3A.7-1b would reduce the potentially significant impact of possible damage to people and structures from strong seismic ground shaking under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives to a **less-than-significant** level by requiring that the design recommendations of a geotechnical engineer to reduce damage from seismic events be incorporated into buildings, structures, and infrastructure as required by the CBC, and that a geotechnical or soils engineer provide on-site monitoring to ensure that earthwork is being performed as specified in the plans. However, some of the off-site elements fall under the jurisdiction of El Dorado and Sacramento Counties, and Caltrans; therefore, neither the City nor the project applicant(s) would have control over their timing or implementation.

IMPACT 3A.7-2 Seismically-Induced Risks to People and Structures Caused by Liquefaction. *Construction activities would not occur in areas subject to liquefaction.*

On-Site and Off-Site Elements

NP, NCP, PP, RIM, CD, RHD

Based on a review of information contained in (1) the Preliminary Geotechnical Engineering Reports prepared by Wallace Kuhl & Associates (2004, 2005, 2008) and Youngdahl Consulting Group (2003), (2) published geological maps and literature, and (3) a telephone conference with Wallace Kuhl & Associates (French, pers. comm., 2009), it is unlikely that on- or off-site soils would be subject to liquefaction in the event of an earthquake, for the following reasons:

- the SPA and areas of proposed off-site activities are underlain by small amounts of Pleistocene-age alluvium and primarily by Jurassic-age bedrock formations, which generally are not susceptible to liquefaction;
- the SPA and areas of proposed off-site activities are underlain by a moderately deep groundwater table that is at least 100 feet below the ground surface; and
- the potential sources of seismic activity are a relatively long distance away (approximately 50 miles).

Therefore, **direct** impacts related to potential damage to structures from seismically-induced liquefaction under the No Project, No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternative are considered **less than significant**. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.7-3 Construction-Related Erosion. *Construction activities during project implementation would involve grading and movement of earth in soils subject to wind and water erosion hazard and on steep slopes.*

On-Site and Off-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80, and no off-site water facilities would be

constructed. Construction activities would occur in soils that have moderate wind and water erosion hazard potential. Conducting these activities would result in the temporary disturbance of soil and would expose disturbed areas to winter storm events. Rain of sufficient intensity could dislodge soil particles from the soil surface. If the storm is large enough to generate runoff, localized erosion could occur. On the steeper eastern slopes, severe erosion could occur as a result of project development. In addition, soil disturbance during the summer as a result of construction activities could result in soil loss because of wind erosion. Therefore, **direct** impacts associated with construction-related erosion are **potentially significant. Indirect** impacts from soil erosion, such as sediment transport and potential loss of aquatic habitat, are evaluated in Sections 3A.3, "Biological Resources – Land," and 3A.9, "Hydrology and Water Quality – Land," respectively. ***[Lesser]***

NCP, PP, RIM, RHD

Project implementation would involve intensive grading and construction activities for infrastructure and building and road foundations over more than 3,500 acres of varied terrain, ranging from relatively flat, to gently rolling, to steeply sloped (in the eastern portion of the SPA). Construction activities would occur in soils that have moderate wind and water erosion hazard potential. Conducting these activities would result in the temporary disturbance of soil and would expose disturbed areas to winter storm events. Rain of sufficient intensity could dislodge soil particles from the soil surface. If the storm is large enough to generate runoff, localized erosion could occur. On the steeper eastern slopes, severe erosion could occur as a result of project development. In addition, soil disturbance during the summer as a result of construction activities could result in soil loss because of wind erosion. Therefore, **direct** impacts associated with construction-related erosion are **potentially significant. Indirect** impacts from soil erosion, such as sediment transport and potential loss of aquatic habitat, are evaluated in Sections 3A.3, "Biological Resources – Land," and 3A.9, "Hydrology and Water Quality – Land," respectively. ***[Similar]***

Mitigation Measure 3A.7-3: Prepare and Implement the Appropriate Grading and Erosion Control Plan.

Before grading permits are issued, the project applicant(s) of each project phase that would be located within the City of Folsom shall retain a California Registered Civil Engineer to prepare a grading and erosion control plan. The grading and erosion control plan shall be submitted to the City Public Works Department before issuance of grading permits for all new development. The plan shall be consistent with the City's Grading Ordinance, the City's Hillside Development Guidelines, and the state's NPDES permit, and shall include the site-specific grading associated with development for all project phases.

For the two off-site roadways into El Dorado Hills, the project applicant(s) of that phase shall retain a California Registered Civil Engineer to prepare a grading and erosion control plan. The grading and erosion control plan shall be submitted to the El Dorado County Public Works Department and the El Dorado Hills Community Service District before issuance of grading permits for roadway construction in El Dorado Hills. The plan shall be consistent with El Dorado County's Grading, Erosion, and Sediment Control Ordinance and the state's NPDES permit, and shall include the site-specific grading associated with roadway development.

For the off-site detention basin west of Prairie City Road, the project applicant(s) of that phase shall retain a California Registered Civil Engineer to prepare a grading and erosion control plan. The grading and erosion control plan shall be submitted to the Sacramento County Public Works Department before issuance of a grading permit. The plan shall be consistent with Sacramento County's Grading, Erosion, and Sediment Control Ordinance and the state's NPDES permit, and shall include the site-specific grading associated with construction of the detention basin.

The plans referenced above shall include the location, implementation schedule, and maintenance schedule of all erosion and sediment control measures, a description of measures designed to control dust and stabilize the construction-site road and entrance, and a description of the location and methods of

storage and disposal of construction materials. Erosion and sediment control measures could include the use of detention basins, berms, swales, wattles, and silt fencing, and covering or watering of stockpiled soils to reduce wind erosion. Stabilization on steep slopes could include construction of retaining walls and reseeding with vegetation after construction. Stabilization of construction entrances to minimize trackout (control dust) is commonly achieved by installing filter fabric and crushed rock to a depth of approximately 1 foot. The project applicant(s) shall ensure that the construction contractor is responsible for securing a source of transportation and deposition of excavated materials.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties).

Implementation of Mitigation Measure 3A.9-1 (discussed in Section 3A.9, "Hydrology and Water Quality – Land") would also help reduce erosion-related impacts.

Implementation: Project applicant(s) of all project phases.

Timing: Before the start of construction activities.

Enforcement:

1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For the two off-site roadway connections from Folsom Heights into El Dorado Hills: El Dorado County Public Works Department.
3. For the off-site detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.

CD

Under the Centralized Development Alternative, most of the residential housing and commercial development currently planned for the steep eastern slopes would not occur; instead, that development would be relocated within the gently rolling terrain in the central portion of the SPA. Construction activities for infrastructure and building and road foundations under the Centralized Development Alternative would be reduced by approximately 387 acres as compared to the Proposed Project Alternative; however, construction activities throughout the remaining 3,113-acre SPA would expose soils to erosion hazards from wind and water. Furthermore, the proposed commercial development would still occur along U.S. 50 under this alternative, within the steep terrain of the eastern foothills, where severe erosion could occur. Therefore, **direct** impacts associated with construction-related erosion under the Centralized Development Alternative are **potentially significant**. **Indirect** impacts from soil erosion, such as sediment transport and potential loss of aquatic habitat, are evaluated in Sections 3A.3, "Biological Resources – Land," and 3A.9, "Hydrology and Water Quality – Land," respectively. ***[Lesser]***

Mitigation Measure: Implement Mitigation Measure 3A.7-3.

Implementation of Mitigation Measure 3A.7-3 along with Mitigation Measure 3A.9-1 (discussed in Section 3A.9, "Hydrology and Water Quality – Land"), would reduce potentially significant construction-related erosion impacts under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives to a **less-than-significant** level because grading and erosion control plans with specific erosion and sediment control measures such as those suggested above or listed in Mitigation Measure 3A.9-1 would be prepared, approved by the appropriate City or county department, and implemented. However, some of the off-site elements (two roadway connections in El Dorado County and

detention basin in Sacramento County) fall under the jurisdiction of El Dorado and Sacramento Counties; therefore, neither the City nor the project applicant(s) would have control over their timing or implementation.

IMPACT 3A.7-4 **Potential Geologic Hazards Related to Construction in Bedrock and Rock Outcrops, and Unstable Soils.** *Development in the eastern portion of the SPA would occur in steep slopes underlain by bedrock at shallow depths and rock outcrops that could result in geologic hazards during construction.*

On-Site and Off-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80, and no off-site water facilities would be constructed. Depending on the how the parcels are split, it is possible that several of these rural residences could be built within the eastern foothills. Based on a review of the *Preliminary Geotechnical Engineering Report* prepared by Wallace Kuhl & Associates (2005), the SPA soils are generally stable and suitable for the proposed hillside grading; however, the geotechnical engineer recommended that a seismic refraction survey be performed for the Folsom Heights property to determine which areas can be graded using a large bulldozer/excavator, and which areas may require blasting in order to excavate the materials. Therefore, potential geologic hazards from construction in bedrock/rock outcrops/unstable soils are considered a **direct, potentially significant** impact. The **indirect** impact from project-related construction in bedrock/rock outcroppings is creation of a public safety hazard from blasting operations, which is evaluated in Section 3A.8, "Hazards and Hazardous Materials – Land." ***[Similar]***

NCP, PP, RIM, CD, RHD

The implementation of all five action alternatives would result in construction on slopes in the eastern portion of the SPA, although less development on the slopes would occur under the Centralized Development Alternative. Based on a review of the Conceptual Grading Plans prepared by MacKay & Somps (2008), several areas of steep slopes would need to be created, ranging from approximately 16% to 32%. The *Folsom Plan Area Specific Plan* Section A.4 establishes grading standards for the SPA. The SPA consists of two distinct topographic areas: The eastern region includes all of the property east of Placerville Road and consists of hilly terrain located where the lower foothills of the Sierra Nevada join the Sacramento Valley floor. Elevations vary from 440 feet above mean sea level at the valley floor (along Placerville Road), to 800 feet above mean sea level in the foothills adjacent to the existing communication towers. The hilltop terrain is plateau-like and extends in a gentle slope from U.S. 50 to White Rock Road. On the east side of this area, the topography slopes gradually from the plateau to the El Dorado County line. Existing slopes range from 5%, to small areas in excess of 30%. The majority of slopes in this area average 15%.

The topography of the western region of the SPA consists of gently rolling terrain located on the valley floor between Placerville Road on the east, U.S. 50 on the north, White Rock Road on the south, and Prairie City Road on the east. The majority of slopes in this zone range between 0% and 15%; however, isolated steeper slopes exist along the edges of Alder Creek tributaries and existing seasonal drainages in the western sections of this zone.

Development of the SPA would entail the use of convential, contour, and landform grading, as described below:

- Conventional grading is characterized by uniform slope gradients with angular slope intersections and pad configurations that are rectangular. In the SPA, conventional grading would be mostly associated with non-hillside commercial building pads, homebuilding sites, school sites, municipal uses, parks, and other areas where uniform site grading is the primary consideration.

- Contour grading slopes are curvilinear in plan rather than linear as in conventional grading. Transition zones and slope intersections generally have some rounding applied and the resultant pad configurations are mildly curvilinear. In the SPA, contour grading would most likely occur in hillside-graded slope transition areas as well as highly visible areas where visual aesthetics are an important consideration.

- Landform grading replicates the irregular shapes of natural stable slopes. Landform-graded slopes are characterized by a continuous series of concave and convex forms interspersed with swales and berms that blend into the existing slopes, and thus the resultant pad configurations are irregular. In the SPA, landform grading would most likely occur in hillside areas where the natural blending of slopes is important, including transitions to oak woodlands, natural drainages, and open space.

The specific policies that would govern grading in the SPA, as fully detailed in Section A4 of *Folsom Plan Area Specific Plan*, have been designed to comply with the City's Hillside Grading Ordinance. In some cases, policies in the Ordinance have been refined for use specifically within the SPA. As stated in Folsom Municipal Code Section 17.37.010:

> The purpose of the SP, specific plan district is to provide a vehicle for implementing the city's general plan on an area-specific basis. A specific plan prepared in accordance with the standards set forth in this chapter is intended to serve as a regulatory document, consistent with the General Plan. In the event there is an inconsistency or conflict between an adopted specific plan and comparable regulations of this code, the specific plan will prevail.

In other words, if there is an inconsistency or conflict between the specific plan and other provisions of the Folsom Municipal Code, the specific plan governs.

As shown in Exhibit 3A.7-3, the eastern foothills are underlain by the Copper Hill Volcanics, which consist of weathered and fractured metavolcanic rocks. Rock outcroppings are present throughout the eastern slopes. Based on a review of the *Preliminary Geotechnical Engineering Report* prepared by Wallace Kuhl & Associates (2005), the SPA soils are generally stable and suitable for the proposed hillside grading; however, the geotechnical engineer recommended that a seismic refraction survey be performed for the Folsom Heights property to determine which areas can be graded using a large bulldozer/excavator, and which areas may require blasting in order to excavate the materials.

Potential geologic hazards from construction in bedrock/rock outcroppings within the eastern foothills are considered a **direct, potentially significant** impact. The **indirect** impact from project-related construction in bedrock/rock outcroppings is creation of a public safety hazard from blasting operations, which is evaluated in Section 3A.8, "Hazards and Hazardous Materials – Land." ***[Similar]***

> Mitigation Measure: Implement Mitigation Measure 3A.7-1a.
>
> Mitigation Measure 3A.7-4: Prepare a Seismic Refraction Survey and Obtain Appropriate Permits for all On-Site and Off-Site Elements East of Old Placerville Road.
>
> Before the start of all construction activities east of Old Placerville Road, the project applicant(s) of all project phases shall retain a licensed geotechnical engineer to perform a seismic refraction survey. Project-related excavation activities shall be carried out as recommend by the geotechnical engineer. Excavation may include the use of heavy-duty equipment such as large bulldozers or large excavators, and may include blasting. Appropriate permits for blasting operations shall be obtained from the relevant City or county jurisdiction prior to the start of any blasting activities.
>
> Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties).

Implementation: Project applicant(s) of all project phases for on-site and off-site elements east of Old Placerville Road.

Timing: Before or during earthmoving activities.

Enforcement:
1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For the two off-site roadway connections from Folsom Heights into El Dorado Hills: El Dorado County Public Works Department.

Implementation of Mitigation Measures 3A.7-1a and 3A.7-4 would reduce potential geologic hazards from construction in bedrock/rock outcroppings under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternative to a **less-than-significant** level because a seismic refraction survey would be performed to determine which areas of the eastern foothills required blasting and which could be excavated using conventional methods, and appropriate permits would be obtained for blasting activities. However, the two roadway connections in El Dorado County fall under the jurisdiction of El Dorado County; therefore, neither the City nor the project applicant(s) would have control over their timing or implementation.

IMPACT 3A.7-5 Potential Geologic Hazards Related to Seasonal Subsurface Water Flows from Surface Infiltration. *SPA excavation is not expected to encounter groundwater, but seasonal subsurface flows due to surface infiltration, as well as surface infiltration from shallow wells, could adversely affect some of the building foundations in the SPA.*

On-Site and Off-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80, and no off-site water facilities would be constructed. According to the results from text pits excavated by Wallace Kuhl & Associates (2004, 2005, 2008) and Youngdahl Consulting (2003) groundwater was not encountered in any test pit to a maximum of 9.5 feet bgs. However, infiltrated seasonal runoff, and water from several shallow wells in the eastern foothills, can be expected to flow underneath the SPA along the soil/bedrock interface, which may create or increase shallow seasonal groundwater conditions. Furthermore, perched groundwater conditions during the winter months and water seepage conditions may be encountered throughout the SPA. Without proper design techniques, such as installation of French drains, this could result in adverse impacts to building foundations constructed at or near the interface of soil and rock. Therefore, this **indirect** impact is considered **potentially significant**. **No direct** impact would occur. ***[Similar]***

NCP, PP, RIM, CD, RHD

According to the results from text pits excavated by Wallace Kuhl & Associates (2004, 2005, 2008) and Youngdahl Consulting (2003) groundwater was not encountered in any test pit to a maximum of 9.5 feet bgs. However, infiltrated seasonal runoff, and water from several shallow wells in the eastern foothills, can be expected to flow underneath the SPA along the soil/bedrock interface, which may create or increase shallow seasonal groundwater conditions. Furthermore, perched groundwater conditions during the winter months and water seepage conditions may be encountered throughout the SPA. Without proper design techniques, such as installation of French drains, this could result in adverse impacts to building foundations constructed at or near the interface of soil and rock. Therefore, this **indirect** impact is considered **potentially significant**. **No direct** impact would occur. ***[Similar]***

Mitigation Measure 3A.7-5: Divert Seasonal Water Flows Away from Building Foundations.

The project applicant(s) of all project phases shall either install subdrains (which typically consist of perforated pipe and gravel, surrounded by nonwoven geotextile fabric), or take such other actions as recommended by the geotechnical or civil engineer for the project that would serve to divert seasonal flows caused by surface infiltration, water seepage, and perched water during the winter months away from building foundations.

Implementation: Project applicant(s) of all project phases.

Timing: Before and during earthmoving activities.

Enforcement:
1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For the two roadway connections in El Dorado Hills: El Dorado County Public Works Department.

Implementation of Mitigation Measures 3A.7-5 and would reduce the potential impacts from seasonal subsurface water flows, flows from existing shallow wells, water seepage, and perched winter shallow groundwater conditions under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives to a **less-than-significant** level because subsurface drains, or another methodology recommended by the project geotechnical engineer (and approved by the relevant City or county department), would be installed to channel seasonal water flows away from building foundations. However, two roadway connections in El Dorado County fall under the jurisdiction of El Dorado County; therefore, neither the City nor the project applicant(s) would have control over their timing or implementation.

IMPACT 3A.7-6 Potential Damage to Structures and Infrastructure from Construction in Expansive Soils. *Portions of the SPA are underlain by soils that have a moderate to high potential for expansion when wet and may result damage to structures.*

On-Site and Off-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80, and no off-site water facilities would be constructed. Expansive soils shrink and swell as a result of moisture change. These volume changes can result in damage over time to building foundations, underground utilities, and other subsurface facilities and infrastructure if they are not designed and constructed appropriately to resist the damage associated with changing soil conditions. Volume changes of expansive soils also can result in the consolidation of soft clays following the lowering of the water table or the placement of fill. Placing buildings or constructing infrastructure on or in unstable soils can result in structural failure. Based on a review of NRCS soil survey data as shown in Table 3A.7-2, most of the on- and off-site project elements consists of soils with a moderate to high shrink-swell potential, indicating the soils are expansive. Soil expansion, including volume changes during seasonal fluctuations in moisture content, could adversely affect road surfaces, interior slabs-on-grade, landscaping hardscapes, and underground pipelines. Therefore, this **direct** impact is considered **potentially significant**. **No indirect** impacts would occur. ***[Similar]***

NCP, PP, RIM, CD, RHD

Expansive soils shrink and swell as a result of moisture change. These volume changes can result in damage over time to building foundations, underground utilities, and other subsurface facilities and infrastructure if they are not designed and constructed appropriately to resist the damage associated with changing soil conditions. Volume changes of expansive soils also can result in the consolidation of soft clays following the lowering of the water table or the placement of fill. Placing buildings or constructing infrastructure on or in unstable soils can result in structural failure. Based on a review of NRCS soil survey data as shown in Table 3A.7-2, most of the on- and off-site project elements consists of soils with a moderate to high shrink-swell potential, indicating the soils are expansive. Soil expansion, including volume changes during seasonal fluctuations in moisture content, could adversely affect road surfaces, interior slabs-on-grade, landscaping hardscapes, and underground pipelines. Therefore, this **direct** impact is considered **potentially significant**. **No indirect** impacts would occur.

Mitigation Measure: Implement Mitigation Measures 3A.7-1a and 3A.7-1b.

Implementation of Mitigation Measures 3A.7-1a and 3A.7-1b would reduce the potentially significant impact of damage to people and structures from construction in expansive soils under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives to a **less-than-significant** level by requiring that the design recommendations of a geotechnical engineer to reduce damage from expansive soils be incorporated into buildings, structures, and infrastructure as required by the CBC, and that a geotechnical or soils engineer provide on-site monitoring to ensure that earthwork is being performed as specified in the plans. However, some of the off-site elements (two roadway connections in El Dorado County and detention basin in Sacramento County) fall under the jurisdiction of El Dorado and Sacramento Counties; therefore, neither the City nor the project applicant(s) would have control over their timing or implementation.

IMPACT 3A.7-7 Suitability of Soils for Use with Septic Systems. *The SPA is underlain by soils that are unsuitable for use with conventional septic systems.*

On-Site and Off-Site Elements

NP

Under the No Project Alternative, up to 44 rural residences could be developed under the existing Sacramento County AG-80 zoning, and no off-site water facilities would be constructed. These residences would require the use of on-site septic systems. Most of the shallow on-site soils have a low permeability and are subject to water seepage (a high water holding capacity) and thus tend to "perc" too slowly, rendering them unsuitable for conventional septic systems. Most of the bedrock on-site soils have extremely high permeability (a low water holding capacity) and thus tend to "perc" too quickly, also rendering them unsuitable for conventional septic systems. Based on a review of NRCS soil data (see Table 3A.7-2), the entire SPA is rated with a severe limitation because the soils are unsuitable for conventional septic systems. Therefore, the unsuitability of SPA soils for septic systems would have a **direct, significant** impact related to lack of treatment capability, and an **indirect, potentially significant** impact related to water quality. ***[Greater]***

NCP, PP, RIM, CD, RHD

Because the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, Reduced Hillside Development Alternatives would use piped sewer service from Sacramento Regional County Sanitation District and/or El Dorado Irrigation District, septic systems would not be required and there would be **no direct** or **indirect** impact. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.7-8 Possible Loss of Mineral Resources–Construction Aggregate. *The SPA is located within the Sacramento-Fairfield Production-Consumption Region designated by CDMG and contains dredge tailings that could provide a source of construction aggregate.*

On-Site and Off-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80. Construction of these scattered rural residences would not impede mining of any construction aggregate located in the SPA. There would be no off-site water facilities constructed under this alternative. Therefore, there would be **no direct** or **indirect impact**. ***[Lesser]***

On-Site Elements

NCP, PP, RIM, CD, RHD

The western third of the SPA is located within the Sacramento-Fairfield Production-Consumption Region, a mineral resources area designated by CDMG as containing "regionally significant" mineral deposits that may be needed to meet future demand. As shown in Exhibit 3A.7-3, the western edge of the SPA is classified by CDMG as MRZ-1 for construction aggregate, "areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence." However, the majority of the SPA is classified by CDMG as MRZ-3 for construction aggregate, "areas containing mineral deposits, the significance of which cannot be evaluated from existing data." Based on site visits performed by EDAW/AECOM (now AECOM) in 2007, information contained in the geotechnical reports, and conversations with the project engineer (MacKay & Somps), portions of the western third of the SPA contain piles of cobbles deposited during dredger gold mining operations in the 1800s and early 1900s. Similar piles of dredge tailings are present in nearby areas of Rancho Cordova, and south of White Rock Road in Sacramento County, and those areas are actively being mined or are proposed for mining as an aggregate sand and gravel resource. However, the dredge tailings present within the SPA are located primarily within the Alder Creek drainage. Alder Creek is a perennial watercourse, and its drainage and riparian resources are protected by both Sacramento County and City of Folsom General Plan policies and ordinances. Furthermore, in 2003, the City of Folsom determined that because it did not have any active mining operations, and because none were expected in the future, that it would not update its SMARA ordinance. The SPA is not delineated as an area of known mineral resources in either the City of Folsom or Sacramento County General Plans. Finally, based on conversations with the project engineer (MacKay & Somps), even if it were permissible to mine the Alder Creek dredge tailings, they are not present in a large enough concentration that would warrant an economically viable on-site mining operation. Therefore, this **direct** impact would be **less than significant. No indirect** impacts would occur. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

Off-Site Elements

The off-site elements are located in areas that are either zoned MRZ-1 for construction aggregate (where no mineral resources are present) or are located in MRZ-3 construction aggregate areas that have already been developed with urban uses (where any resources that may have been present have been covered over by development and are no longer available for extraction). Therefore, there would be **no direct** or **indirect** impact related to loss of mineral resources from construction of the off-site elements. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.7-9 Possible Loss of Mineral Resources–Kaolin Clay. *The SPA is located within the Sacramento-Fairfield Production-Consumption Region designated by CDMG and may contain a deposit of kaolin clay.*

On-Site and Off-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80. Construction of these scattered rural residences would not impede mining of any kaolin clay located in the SPA. There would be no off-site water facilities constructed under this alternative. Therefore, there would be **no direct** or **indirect** impact. ***[Lesser]***

On-Site Elements

NCP, PP, RIM, CD, RHD

As shown on Exhibit 3.8-3, the western edge of the SPA is zoned MRZ-3 for kaolin clay. This classification was applied by CDMG because that area roughly corresponds to the location of the Ione Formation in the SPA. The Ione Formation is known to contain kaolin clay in other locations in northern California. None of the five geotechnical reports prepared for the SPA included an investigation of this area. Therefore, it is currently unknown whether or not an economically valuable deposit of kaolin clay is present. If it were present, the deposit would be unavailable for mining following project implementation, because urban development is planned throughout the area where the Ione Formation occurs in the SPA. Because the potential presence of this valuable mineral resource cannot be ruled out at this time, and because the resource would be lost as a result of project implementation, this **direct** impact is considered **potentially significant. No indirect** impacts would occur. ***[Similar]***

Mitigation Measure 3A.7-9: Conduct Soil Sampling in Areas of the SPA Designated as MRZ-3 for Kaolin Clay and if Found, Delineate its Location and Notify Lead Agency and the California Division of Mines and Geology.

The project applicant(s) of all applicable project phases shall retain a licensed geotechnical or soils engineer to analyze soil core samples that shall be extracted from that portion of the SPA zoned MRZ-3 for kaolin clay, as shown on Exhibit 3A.7-3. In the event that kaolin clay is discovered, the City of Folsom, Sacramento County, and CDMG shall be notified. In addition, the approximate horizontal and vertical extent of available kaolin clay shall be delineated by the geotechnical or soils engineer.

Implementation: Project applicant(s) of all project phases in the Ione Formation.

Timing: Before issuance of building permits for development within the Ione Formation as shown in Exhibit 3A.7-1.

Enforcement: City of Folsom Community Development Department, Sacramento County Planning and Community Development Department, California Division of Mines and Geology.

Implementation of Mitigation Measure 3A.7-9 would provide data that would allow the project applicant(s) and the lead agencies to determine whether or not economically valuable mineral resources are present in the MRZ-3 kaolin clay area of the SPA. However, if economically valuable mineral resources were found to be present, they would be covered over as a result of SPA development with urban land uses, and would no longer be available for

mining. Therefore, this impact is considered **potentially significant** and **unavoidable**, because there are no feasible mitigation measures available to avoid or reduce this impact to a less-than-significant level.

Off-Site Elements

The off-site elements are located in areas that are not zoned for kaolin clay and are not located within the Ione Formation. Therefore, there would be **no direct** or **indirect** impact related to loss of kaolin clay mineral resources from construction of the off-site elements. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.7-10 Possible Damage of or Destruction to of Previously Unknown Unique Paleontological Resources during Construction-Related Activities. *Portions of the SPA and the off-site detention basin are underlain by paleontologically sensitive rock formations. Therefore, construction activities could damage or destroy previously unknown, unique paleontological resources in the SPA.*

On-Site and Off-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80, and no off-site water facilities would be constructed. Construction of any residence within the Ione Formation could damage or destroy unknown, unique paleontological resources that occur within the SPA. The policies in the Sacramento County General Plan that would protect paleontological resources under a tentative subdivision map do not apply to private land that is zoned for agricultural use, because they are generally mutually exclusive. Because earthmoving activities within the Ione Formation could encounter and potentially destroy previously unknown unique paleontological resources, this **direct** impact is **potentially significant**. **No indirect** impacts would occur. ***[Greater]***

NCP, PP, RIM, CD, RHD

As shown in Exhibit 3A.7-1, most of the SPA and the off-site elements are underlain by the Salt Springs Slate, Copper Hill Volcanics, and Gopher Canyon Volcanics. Because of the way in which these rocks formed, they would not contain vertebrate fossils or fossil plant assemblages. Therefore, construction activities that occur in these rock formations would have no impact on unique paleontological resources.

However, the western edge of the SPA (see Exhibit 3A.7-1) is underlain by Eocene-age sediments of the Ione Formation. Vertebrate mammal, plant, and invertebrate fossils have been recovered from the Ione Formation from over 300 locations in Nevada, Contra Costa, Placer, Butte, Alameda, Merced, Tuolumne, Sutter, Sierra, Plumas, Calaveras, Kern, Stanislaus, and Amador counties, including the town of Ione (about 16 miles south of the SPA) (UCMP 2009).

The off-site detention basin west of Prairie City Road would be located within the Mehrten Formation. Vertebrate fossils have been recovered from the Mehrten Formation from over 40 locations in Calaveras, San Joaquin, Stanislaus, Tuolumne, and Merced Counties (UCMP 2009). In addition, several specimens of plant fossils have been recovered locally from the Mehrten Formation in Granite Bay, Roseville, and Rocklin (Sierra College Natural History Museum 2009).

Because of the large number of fossils that have been recovered from the Mehrten and Ione Formations throughout the Central Valley, they are considered paleontologically sensitive rock units under the Society of Vertebrate Paleontology guidelines (1995), thus suggesting that there is a potential for uncovering additional similar fossil remains during construction-related earthmoving activities in these formations in the SPA.

Therefore, the potential for damage to previously unknown unique paleontological resources during earthmoving activities in the SPA and the off-site detention basin is considered a **potentially significant, direct** impact. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure 3A.7-10: Conduct Construction Personnel Education, Stop Work if Paleontological Resources are Discovered, Assess the Significance of the Find, and Prepare and Implement a Recovery Plan as Required.

To minimize potential adverse impacts on previously unknown potentially unique, scientifically important paleontological resources, the project applicant(s) of all project phases where construction would occur in the Ione and Mehrten Formations shall do the following:

- Before the start of any earthmoving activities for any project phase in the Ione or Mehrten Formations, the project applicant(s) shall retain a qualified paleontologist or archaeologist to train all construction personnel involved with earthmoving activities, including the site superintendent, regarding the possibility of encountering fossils, the appearance and types of fossils likely to be seen during construction, and proper notification procedures should fossils be encountered.

- If paleontological resources are discovered during earthmoving activities, the construction crew shall immediately cease work in the vicinity of the find and notify the appropriate lead agency (identified below). The project applicant(s) shall retain a qualified paleontologist to evaluate the resource and prepare a recovery plan in accordance with Society of Vertebrate Paleontology guidelines (1996). The recovery plan may include, but is not limited to, a field survey, construction monitoring, sampling and data recovery procedures, museum storage coordination for any specimen recovered, and a report of findings. Recommendations in the recovery plan that are determined by the lead agency to be necessary and feasible shall be implemented before construction activities can resume at the site where the paleontological resources were discovered.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., Sacramento County).

Implementation: Project applicant(s) of all project phases within the Ione and Mehrten Formations.

Timing: During earthmoving activities in the Ione and Mehrten Formations as shown in Exhibit 3A.7-1.

Enforcement:

1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.

2. For the off-site detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.

Implementation of Mitigation Measure 3A.7-10 would reduce potentially significant impacts related to damage or destruction of unique paleontological resources within the Ione and Mehrten Formations to a **less-than-significant** level under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives because construction workers would be alerted to the possibility of encountering paleontological resources, and in the event that resources were encountered, fossil specimens would be recovered and recorded and would undergo appropriate curation. However, the off-site detention basin in Sacramento County falls under the jurisdiction of Sacramento County; therefore, neither the City nor the project applicant(s) would have control over the timing or implementation.

3A.7.4 RESIDUAL SIGNIFICANT IMPACTS

With implementation of Mitigation Measures 3A.7-1, 3A.7-3, 3A.7-4, 3A.7-5, and 3A.7-7, impacts related to strong seismic ground shaking, construction-related erosion, construction in bedrock/rock outcrops and landslides, subsurface water flows, and unsuitability for septic systems would be reduced to less-than-significant levels. Implementation of Mitigation Measure 3A.7-9 would provide data that would allow the project applicant(s) and the lead agencies to determine whether or not economically valuable mineral resources are present in the MRZ-3 kaolin clay area of the SPA. However, if economically valuable kaolin clay deposits were found to be present, they would be covered over as a result of SPA development with urban land uses, and would no longer be available for mining. Therefore, this impact is considered potentially significant and unavoidable under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives.

In addition, some of the off-site elements fall under the jurisdiction of El Dorado and Sacramento Counties, and Caltrans; therefore, neither the City nor the project applicant(s) would have control over the timing or implementation of mitigation measures for these off-site elements. Because the City does not control implementation of mitigation measures for off-site improvements constructed in areas under the jurisdiction of El Dorado and Sacramento Counties, and Caltrans, Impacts 3A.7-1, 3A.7-3, 3A.7-4, 3A.7-5, 3A.7-6, and 3A.7-10 are considered potentially significant and unavoidable for off-site improvements which would be located in Sacramento or El Dorado County, or Caltrans jurisdiction.

This section was prepared by RMC Water and Environment.

3B.7 GEOLOGY, SOILS, AND PALEONTOLOGICAL RESOURCES – WATER

3B.7.1 AFFECTED ENVIRONMENT

Similar to other resource sections, the description of the affected environment is focused on Zone 4 of the "Water" Study Area where existing geology and/or soil conditions could influence the design of physical underground and above-ground improvements. No physical improvements are proposed within Zones 1, 2, and 3, and, therefore, detail discussion for this area was determined unnecessary to support the impact analysis.

TOPOGRAPHY

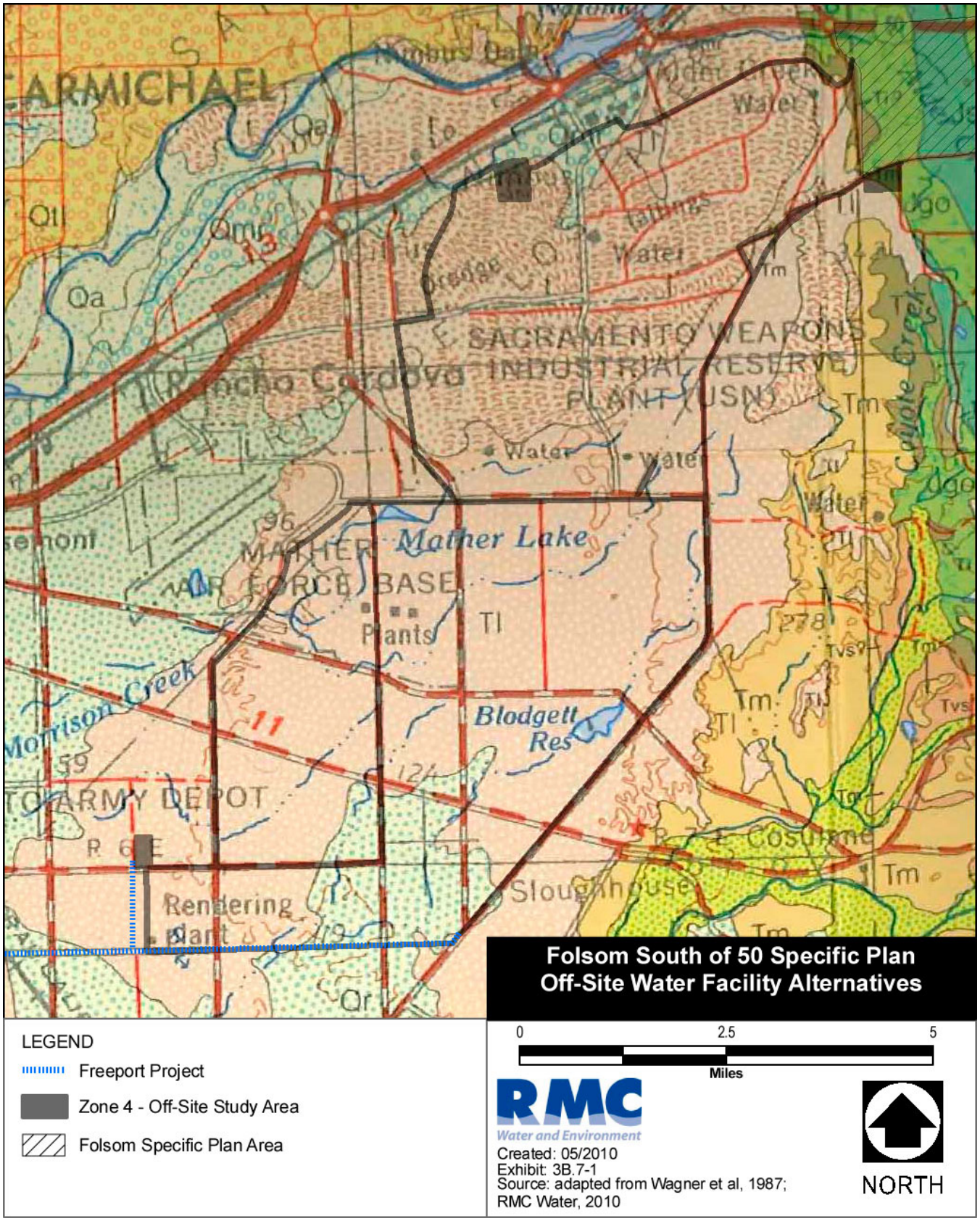
The topography within Zone 4 of the Off-site Water Facilities Study Area grades from the southeast to the northwest towards the Sacramento-San Joaquin Delta (Delta). Maximum elevations within the Zone 4 reach approximately 330 feet mean sea level (msl) on the eastern extent of the Off-site Water Facilities Study Area near the intersection of White Rock and Prairie City Roads. Topographic elevations then transition gently to the west reaching a minimum elevation of approximately 15 feet msl along the Sacramento River. This gentle transition results in a total topographical change of approximately 300 feet.

REGIONAL GEOLOGY

The "Water" Study Area is located in the central portion of the Great Valley geomorphic province of California. The Great Valley lies between the Sierra Nevada Mountain Range to the east and the California Coast Ranges to the west. The geologic formations of the Great Valley are typified by thick sequences of sedimentary materials of Jurassic through Holocene age. The California Geological Survey (CGS) and U.S. Geological Survey (USGS) have mapped portions of Zone 4 of the "Water" Study Area as being underlain by younger alluvium (consisting of flood basin deposits, dredge tailings and Holocene stream channel deposits), older alluvium, such as the Laguna Formation, and Miocene/Pliocene volcanics (DWR, 2004b). These geologic formations are illustrated in Exhibit 3B.7-1. A generalized cross-section of these geologic formations is provided in Exhibit 3B.17-2 of Section 3B.17, "Groundwater Resources – Water."

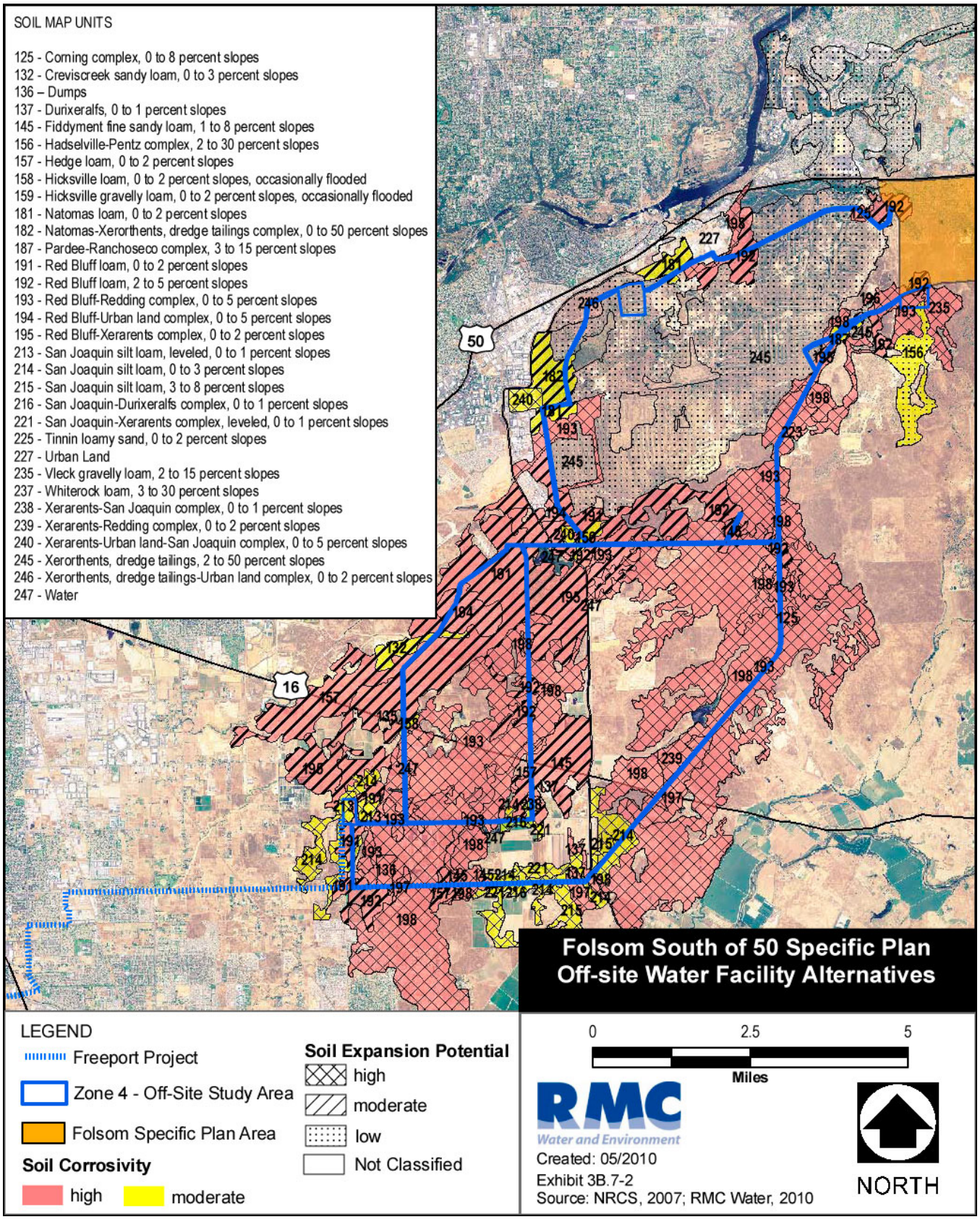
Holocene-aged flood basin and stream channel deposits occur along the western margin of Sacramento County and along the channels of active streams within Zone 4 of the "Water" Study Area. Stream channel deposits consist primarily of unconsolidated silt, fine- to medium-grained sand, and gravel. These recently deposited alluvial materials overlay a layer of loosely to moderately compacted sand, silt, and gravel deposited in alluvial fans during the Pliocene and Pleistocene is present. This older alluvium consists of the Riverbank Formation, which is widely exposed at the surface in areas to the west of Zone 4 of the "Water" Study Area. The older Laguna Formation consisting of consolidated alluvial gravel, sand, and silt underlies much of the Zone 4 between Eagles Nest Road and the Sierra Nevada foothills further east (Wagner et al, 1987). The thickness of the older alluvium is estimated to range between 100 to 650 feet (DWR, 2004b). Within the vicinity of White Rock Road, the Laguna Formation is overlain by extensive deposits of mine and dredge tailings consisting of small to large-sized rock fragments.

The eastern edge of Zone 4 extends into the lower foothills of the Sierra Nevada, which is marked by a transition from the alluvial materials associated with the Laguna Formation to older surface lithologies. Areas along Prairie City Road and to the south are underlain by the Miocene-aged, Mehrten Formation, and Eocene-aged, Ione Formations. Further east, the Jurassic-aged, Gopher Ridge Volcanics and Salt Springs Slate Formations, are expressed at the surface. (Wagner et al, 1981.) These four geologic formations underlie western portions of the Folsom SPA and are described in more detail in the Section 3A.7, "Geology, Soils, Minerals, and Paleontological Resources – Land."



Geologic Formations within Zone 4 of the Off-site Water Facilities Study Area

Exhibit 3B.7-1



Soil Limitations within Zone 4 of the Off-site Water Facilities Study Area

Exhibit 3B.7-2

REGIONAL FAULTING AND SEISMICITY

The "Water" Study Area is situated 40–60 miles away from faults that have been zoned as "active" by the California Division of Mines and Geology (CDMG). Refer to Table 3A.7-1 for a discussion of these faults.

Areas bordering the Central Valley region to the east and west contain both active and potentially active faults; however, the Sacramento Valley has historically experienced a very-low level of seismic activity. The procedures and limitations for design of structures in accordance with the California Building Code (CBC) consider seismic zoning, site characteristics, occupancy, configuration, structural system, and height.

The CGS has determined the probability of earthquake occurrences and their associated peak ground accelerations throughout the State of California. The probabilistic seismic hazard assessment determines the earthquake hazard that geologists and seismologists agree could occur in California. It is probabilistic in the sense that the analysis takes into consideration the uncertainties in the size and location of earthquakes and the resulting ground motions that can affect a particular site. The probabilistic seismic hazard assessment maps are typically expressed in terms of probability of exceeding a certain ground motion. Current maps produced by the CGS are based on 10% exceedance in 50 years. This probability level allows engineers to design buildings for larger ground motions than those that geologists and seismologists think will occur during a 50-year interval. These levels of ground-shaking are used primarily for formulating building codes and for designing buildings. The maps can also be used for estimating potential economic losses and preparing for emergency response (Peterson, et. al, 1999). The peak ground acceleration based on a 10% exceedance in 50 years within the region could range between 0.10 g to 0.20 g (Peterson, et. al, 1999).

SOIL RESOURCES

Soil resources found across portions of Zone 4 of the "Water" Study Area are generally associated with one of two geomorphic surfaces: low-lying, late Pleistocene–age terraces that are often referred to as alluvial plains or old alluvial fans; and intermediate terraces of mid-Pleistocene age (NRCS 1993). These surfaces are formed in primarily fine grained, fluvial and glacial alluvium derived from mixed rock sources, including granite in most areas (NRCS 1993). Zones of sedimentary and metamorphic rocks are also mixed with the granitic rocks. Exhibit 3B.7-2 illustrates the soil mapping units identified by NRCS for Zone 4 of the "Water" Study Area.

Portions of Zone 4 of the "Water" Study Area also consist of terrace despots that are dominated by the well-drained soils (e.g., Red Bluff series) and are comprised of gravelly alluvium derived from fluvial and glacial sources laid down by an ancestral channel of the American River (NRCS 1993). These areas to the south of the American River and within the northern sections of Zone 4 of the "Water" Study Area form part of an intermediate terrace remnant associated with channel deposits; however, most of the soils of this terrace were removed by gold-dredging activities. Large linear rows of tailings now line these areas north of Douglas Road and east of Sunrise Boulevard.

Certain soil formations, particularly the Redding series, contain an accumulation of fine grained materials (e.g., clays) at depth that contribute to the formation of a claypan layer, which is generally impervious to water penetration. These surface conditions facilitate the capture and retention of water during winter and spring rains leading to perched groundwater conditions. Where depressions occur on these soils, rainwater tends to pond, ultimately forming vernal pools and swales. These soil types are extensive throughout the southern and eastern portions of Zone 4.

GEOLOGIC AND SOIL-RELATED HAZARDS

Fault Rupture

Surface rupture is an actual cracking or breaking of the ground along a fault during an earthquake. Structures built over an active fault can be torn apart if the ground ruptures. Surface ground rupture along faults is generally limited to a linear zone a few yards wide. No faults mapped under the Alquist-Priolo Earthquake Fault Zone Act (Alquist-Priolo Act) are within the "Water" Study Area (Hart 1997), nor is there evidence of known active faults within the County. Therefore, surface rupture due to faulting in Zone 4 of the "Water" Study Area is not expected to occur and, therefore, hazards related to rupture along a known earthquake fault are considered negligible.

Liquefaction

Liquefaction is the sudden temporary loss of shear strength in saturated, loose to medium dense, granular sediments subjected to ground shaking. It generally occurs when seismically induced ground shaking causes pore water pressure to increase to a point equal to the overburden pressure. Liquefaction can cause foundation failure of buildings and other facilities due to the reduction of foundation bearing strength.

Areas at risk due to the effects of liquefaction are typified by a high groundwater table and underlying loose to medium-dense, granular sediments, particularly younger alluvium and artificial fill. Within the County, two possible liquefaction areas exist: City of Sacramento's downtown area and the Delta area, which are approximately 20 and 47 miles from the Off-site Water Facilities Study Area, respectively (Sacramento County 1993). Because Zone 4 of the "Water" Study Area is not located within the vicinity of these areas, the risks of liquefaction occurring during a seismic event is considered low.

Slope Instability and Landslides

The landslide potential for native and engineered slopes depends on the gradient, localized geology and soils, amount of rainfall, amount of excavation, and seismic activity. Only a narrow strip along the County's eastern boundary, from the Placer County line to the Cosumnes River, is considered to have landslide potential at specific locations (Sacramento County 1993). These landslide areas are approximately three to four miles east of the Off-site Water Facilities Study Area and, therefore, would present minimal hazards to the Off-site Water Facilities Study Area.

Total and Differential Settlement

Settlement can occur both uniformly and differentially (i.e., where adjoining areas settle at different rates). Typically, areas underlain by artificial fills, unconsolidated alluvial sediments, and slope wash, and areas with improperly engineered construction fills are susceptible to this type of settlement. Settlement of the ground surface can be accelerated and accentuated by earthquakes. During an earthquake, settlement can occur as a result of the relatively rapid compaction and settling of subsurface materials (particularly loose, non-compacted, and variable sandy sediments) due to the rearrangement of soil particles during prolonged ground shaking. Given the extensive development within Zone 4 of the "Water" Study Area, transitions between compacted and non-compacted surfaces could present implications for pipeline structures and is discussed further in the impact analysis.

Subsidence

Subsidence of the land surface resulting from compaction of underlying formations affected by head (groundwater level) decline is a well-documented concern throughout much of the Central Valley. During a typical pumping season, changes in land surface elevation can be observed as a result of both elastic and inelastic subsidence in the underlying basin. Elastic subsidence results from the reduction of pore fluid pressures in the aquifer, and typically rebounds when pumping ceases or when groundwater is otherwise recharged resulting in increased pore fluid

pressure. Inelastic subsidence occurs when pore fluid pressures decline to the point that fine-grained sediments such as clays consolidate, resulting in permanent compaction and reduced ability to store water in that portion of the aquifer. Other side effects may include damaged levees, canals, or pipes.

While some land surface subsidence is known to have occurred as a result of groundwater extraction west of the Sacramento River, the extent of subsidence east of the Sacramento River has been minimal (Central Sacramento County Groundwater Management Plan [CSCGMP] 2006). Historical benchmark elevation data for the period from 1912 through the late 1960s to evaluate land subsidence in north Sacramento County. From 1947 to 1969, the magnitude of land subsidence measured at benchmarks north of the American River ranged from 0.13 feet to 0.32 feet, with a general decrease in subsidence in a northeastward direction (CSCGMP 2006). This decrease was determined to be consistent with the geology of the area whereby formations along the eastern side of the Sacramento Valley are older than those on the western side and are subject to a greater degree of pre-consolidation, making them less susceptible to subsidence. Based on these findings and the consolidated nature of the alluvial formations underlying Zone 4, hazards to the Off-site Water Facility Alternatives as they related to subsidence are expected to be low.

Volcanic Hazards

The "Water" Study Area is located approximately 165 miles from Lassen Peak and approximately 100 miles from Mono Lake/Long Valley volcanic areas. Therefore, the risk to the "Water" Study Area from volcanic hazards is extremely low. For this reason, this issue is not discussed further in this EIR/EIS.

Expansive/Corrosive Soils

Expansive soils are largely comprised of clays, which greatly increase in volume when water is absorbed and shrink when dried. This movement may result in the cracking of foundations for above-ground, paved roads, and concrete slabs. Clayey and silty clay soils occur throughout Zone 4 of the "Water" Study Area and have a high to very-high expansion potential. These clayey materials are generally comprised within one or more soil horizons within the upper five feet of the soil profile. Aggregate and sands associated with the dredge tailings generally exhibit a low expansion potential. As shown in Exhibit 3B.7-2, expansive soil materials are extensive throughout Zone 4 of the "Water" Study Area.

Corrosive Soils can damage underground utilities including pipelines and cables, and can weaken roadway structures. Soils within Zone 4 of the "Water" Study Area are classified as moderately to highly corrosive to concrete and steel (NRCS 1993). Exhibit 3B.7-2 illustrates the locations where soils have been determined to be moderately to highly corrosive to uncoated steel.

Naturally Occurring Asbestos

Naturally occurring asbestos (NOA) has been identified in proximity to the Bear Mountain Fault Zone within El Dorado County (Wagner et al. 1981, Churchill et al. 2000). The closest outcrop of these asbestos-bearing rocks to the "Water" Study Area is located more than four miles east (Wagner et al. 1981, Churchill et al. 2000). Based on this distant proximity, hazards related to naturally-occurring asbestos are not applicable to the Off-site Water Facility Alternatives and not discussed further in this section.

PALEONTOLOGICAL RESOURCES

The closest recorded paleontological resource to the "Water" Study Area is approximately 8 miles to the north near the City of Roseville (Sacramento County 2008a). Vertebrate fossils have been documented from nine different locations within the County, encompassing several hundred specimens, and all within the Riverbank Formation (University of California Museum of Paleontology, UCMP 2009). The Riverbank formation extends into the southern end of Zone 4, near Gerber and Florin Roads (see Exhibit 3B.7-1). Because of the large number of vertebrate fossils that have been recovered from the Riverbank Formation from the County and throughout the

Central Valley, this formation is considered to have high sensitivity under criteria established by the Society of Vertebrate Paleontology (1995).

The Pliocene-aged Laguna Formation, which underlies much of Zone 4 east of Excelsior Road, includes only one reference to a vertebrate fossil specimen in Northern California (City Rancho Cordova 2006), which was discovered in a well near the City of Galt. Based on these findings, the Laguna Formation has a generally low probability of containing paleontological resources. Other geologic formations occurring at the surface within Zone 4 include mine/dredge tailings and Holocene alluvium along local drainage features. Because of the nature of dredge mining activities, any fossil specimens that may have been preserved in the underlying Laguna Formation soils would have been destroyed at the time of the mining operations, and thus the existing dredge tailings would not be expected to contain fossils (City of Rancho Cordova 2006). Since sediments surrounding local drainage features, including Morrison Creek, are less than 11,000 years old, and by definition, to be considered a fossil, a specimen must be more than 11,000 years old, and these sediments would not contain paleontological resources.

As provided in Section 3A.7, "Geology, Soils, Minerals, and Paleontological Resources – Land," because of the way in which the rocks formed within the Salt Springs Slate, Copper Hill Volcanics, and Gopher Canyon Volcanics, it is unlikely that they would contain vertebrate fossils or fossil plant assemblages. However, as provided in Section 3A.7.1, vertebrate fossils have been recovered from both the Mehrten and Ione Formations. Given potential for encountering paleontological resources within the Riverbank, Mehrten, and Ione Formations this issue is evaluated in this EIR/EIS.

3B.7.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS AND LAWS

The following Federal plans, policies, regulations, and laws related to geology, soils, and seismicity are relevant to the Off-site Water Facilities alternatives, and are described in detail in Section 3A.7, "Geology, Soils, Minerals, and Paleontological Resources – Land:"

- Earthquake Hazards Reduction Act

There are no Federal plans, policies, regulations, and laws related to paleontological resources that apply to the Off-site Water Facility Alternatives under consideration.

STATE PLANS, POLICIES, REGULATIONS AND LAWS

The following state plans, policies, regulations, and laws related to geology, soils, and seismicity are relevant to the Off-site Water Facilities alternatives, and are described in detail in Section 3A.7, "Geology, Soils, Minerals, and Paleontological Resources – Land:"

- Alquist-Priolo Geologic Hazards Zone Act (Alquist-Priolo Act)
- Seismic Hazards Mapping Act
- National Pollutant Discharge Elimination System Permit
- California Building Standards Code

No state or local agencies have specific jurisdiction over paleontological resources on private lands. No state agency requires a paleontological collecting permit to allow for the recovery of fossil remains discovered as a result of construction-related earthmoving on state or private land at a project site.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

The following local and regional plans, policies, regulations, and laws related to geology, soils, and seismicity are relevant to the Off-site Water Facilities alternatives, and are described in detail in Section 3A.7, "Geology, Soils, Minerals, and Paleontological Resources – Land:"

- Sacramento County General Plan
- Sacramento County Grading Ordinance (adopted by City of Rancho Cordova)
- Professional Paleontological Standards

Rancho Cordova General Plan

Applicable policies of the City of Rancho Cordova's General Plan relating to geology, soils, and mineral resources are provided below.

- **Policy S.1.1:** Maintain acceptable levels of risk of injury, death, and property damage resulting from reasonably foreseeable safety hazards in Rancho Cordova.

- **Policy S.3.2:** Ensure that new structures are protected from damage caused by geologic and/or soil conditions to the greatest extent feasible.

3B.7.3 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. These thresholds also encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. For the purposes of this analysis, an impact related to local geologic and/or soil conditions would be considered significant if the Off-site Water Facilities would:

- expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving:

    i. rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (Refer to CDMG Special Publication 42),

    ii. strong seismic ground shaking,

    iii. seismic-related ground failure, including liquefaction, or

    iv. landslides.

- result in substantial soil erosion or the loss of topsoil;

- be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;

- be located on expansive soil, as defined in Table 18-1-B of the UBC (2000), creating substantial risks to life or property; or

- have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

Based on the environmental checklist in Appendix G of the State CEQA Guidelines, a project would have a significant impact on paleontological resources if it would directly or indirectly destroy a unique paleontological resource or site. A "unique paleontological resource or site" is one that is considered significant under the professional paleontological standards described below.

An individual vertebrate fossil specimen may be considered unique or significant if it is identifiable and well preserved, and it meets one of the following criteria:

- a type specimen (i.e., the individual from which a species or subspecies has been described);
- a member of a rare species;
- a species that is part of a diverse assemblage (i.e., a site where more than one fossil has been discovered) wherein other species are also identifiable, and important information regarding life history of individuals can be drawn;
- a skeletal element different from, or a specimen more complete than, those now available for its species; or
- a complete specimen (i.e., all or substantially all of the entire skeleton is present).

The value or importance of different fossil groups varies depending on the age and depositional environment of the rock unit that contains the fossils, their rarity, the extent to which they have already been identified and documented, and the ability to recover similar materials under more controlled conditions (such as for a research project). Marine invertebrates are generally common; the fossil record is well developed and well documented, and they would generally not be considered a unique paleontological resource. Identifiable vertebrate marine and terrestrial fossils are generally considered scientifically important because they are relatively rare.

ANALYSIS METHODOLOGY

This analysis evaluates the potential for Off-site Water Facility Alternatives (described in Chapter 2, "Alternatives") to interact with the localized geologic conditions to produce conditions that will exceed the applied significance criteria as identified below.

In its standard guidelines for assessment and mitigation of adverse impacts on paleontological resources, the Society of Vertebrate Paleontology (1995) established three categories of sensitivity for paleontological resources: high, low, and undetermined. Areas where fossils have been previously found are considered to have a high sensitivity and a high potential to produce fossils. Areas that are not sedimentary in origin and that have not been known to produce fossils in the past typically are considered to have low sensitivity. Areas that have not had any previous paleontological resource surveys or fossil finds are considered to be of undetermined sensitivity until surveys and mapping are performed to determine their sensitivity. After reconnaissance-level surveys, observation of exposed cuts, and possibly subsurface testing, a qualified paleontologist can determine whether the area should be categorized as having high or low sensitivity. In keeping with the significance criteria of the Society of Vertebrate Paleontology (1995), all vertebrate fossils are generally categorized as being of potentially significant scientific value.

ISSUES NOT DISCUSSED FURTHER IN THIS EIR/EIS

Alquit-Priolo Fault Zones—The Off-site Water Facilities Study Area would not cross any mapped fault traces or delineated fault ruptures zones according to the most recent Alquist-Priolo Earthquake Fault Zoning Maps issued

by the State Geologist. For this reason, the Off-site Water Facilities would not expose people or structures to potential substantial adverse effects as they relate to fault rupture. Therefore, this issue is not discussed further in this EIR/EIS.

Landslides—As described in the setting section, the Off-site Water Facilities Study Area is characterized by level to undulating topography and does not contain slopes in excess of 10 percent. In this context, the potential for a landslide to occur as a result of activities proposed in Chapter 2, "Alternatives" is remote and no impact is expected. Therefore, this issue is not discussed further in this EIR/EIS.

Septic Tanks—The Off-site Water Facilities would not include the use of septic tanks or alternative waste water disposal systems. During construction portable toilets and water treatment units would be used. Development of up to 44 rural residential units could be constructed on 80-acre parcels within the SPA under the No Project Alternative. Under the No Project Alternative, construction of on-site septic tanks could be required. This issue is analyzed in Section 3A.7, "Geology, Soils, Minerals, and Paleontological Resources – Land". Therefore, this issue is not discussed further in this section.

IMPACT ANALYSIS

Impacts that would occur under each of the Off-site Water Facility Alternatives are identified as follows:

NCP (No USACE Permit Alternative)

PA (Proposed Off-site Water Facility Alternative)

1 (Off-site Water Facility Alternative 1 – Raw Water Conveyance – Gerber/Grant Line Road Alignment and White Rock WTP)

1A (Off-site Water Facility Alternative 1A Raw Water Conveyance – Gerber/Grant Line Road Alignment Variation and White Rock WTP)

2 (Off-site Water Facility Alternative 2 Treated Water Conveyance – Douglas Road Alignment and Vineyard SWTP)

2A (Off-site Water Facility Alternative 2A Treated Water Conveyance – Excelsior Road Alignment Variation and Vineyard SWTP)

2B (Off-site Water Facility Alternative 2B Treated Water Conveyance – North Douglas Tanks Variation and Vineyard SWTP)

3 (Off-site Water Facility Alternative 3 Raw Water Conveyance – Excelsior Road Alignment and White Rock WTP)

3A (Off-site Water Facility Alternative 3A Raw Water Conveyance – Excelsior Road Alignment Variation and White Rock WTP)

4 (Off-site Water Facility Alternative 4 Raw Water Conveyance – Easton Valley Parkway Alignment and Folsom Boulevard WTP)

4A (Off-site Water Facility Alternative 4A Raw Water Conveyance – Easton Valley Parkway Alignment Variation and Folsom Boulevard WTP).

The impacts for each alternative are compared relative to the PA at the end of each impact conclusion (i.e., similar, greater, lesser).

IMPACT 3B.7-1 Possible Risks to People and Structures Caused by Strong Seismic Ground Shaking. *Zone 4 of the "Water" Study Area is located in an area of generally low seismic activity; however, structures constructed as part of the Off-site Water Facility Alternatives could be subject to seismic ground shaking from an earthquake along active faults in the Sierra Nevada.*

NCP, PA 1, 1A, 3, 3A, 4, and 4A

As described in the affected environment section, the localized geologic conditions characterizing Zone 4 of the "Water" Study Area are not conducive to hazards associated with rupture of an active fault or slope failure. For this reason, this discussion places emphasis on those hazards that relate to ground motion resulting from a seismic event and potential secondary effects based on the geologic conditions present within Zone 4 of the "Water" Study Area.

The Sacramento Valley has historically experienced very low seismic activity. Therefore, there is a low probability for disruption of water supply service through a pipeline breakage or damage to the WTP. Seismic design consistent with current professional engineering and industry standards would be used in construction for resistance to strong ground motion, especially for lateral forces.

However, without site-specific geotechnical information and interpretation, the City is unable to accurately pinpoint if and where these types of techniques would be required. As a result, this **direct** impact is considered **potentially significant**. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure 3B.7-1a: Prepare Geotechnical Report(s) for the Off-site Water Facilities and Implement Required Measures.

Facility design for all Off-site Water Facility components shall comply with the site-specific design recommendations as provided by a licensed geotechnical or civil engineer to be retained by the City. The final geotechnical and/or civil engineering report shall address and make recommendations on the following:

- site preparation;
- soil bearing capacity;
- appropriate sources and types of fill;
- potential need for soil amendments;
- road, pavement, and parking areas;
- structural foundations, including retaining-wall design;
- grading practices;
- soil corrosion of concrete and steel;
- erosion/winterization;
- seismic ground shaking;
- liquefaction; and
- expansive/unstable soils.

In addition to the recommendations for the conditions listed above, the geotechnical investigation shall include subsurface testing of soil and groundwater conditions, and shall determine appropriate foundation designs that are consistent with the version of the CBC that is applicable at the time building and grading permits are applied for. All recommendations contained in the final geotechnical engineering report shall be implemented by the City.

Implementation: City of Folsom Utilities Department

Timing: Prior to completion of engineering plans for all Off-site Water Facilities

Enforcement:

1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.

2. For the off-site water facilities within Unincorporated Sacramento County or the City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.

Mitigation Measure 3B.7-1b: Incorporate Pipeline Failure Contingency Measures Into Final Pipeline Design.

Isolation valves or similar devices shall be incorporated into all pipeline facilities to prevent substantial losses of surface water in the event of pipeline rupture, as recommended by a licensed geotechnical or civil engineer. The specifications of the isolation valves shall conform to the CBC and American Water Works Association standards.

Implementation: City of Folsom Utilities Department

Timing: Prior to completion of engineering plans for all Off-site Water Facilities

Enforcement:

1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.

2. For the off-site water facilities within Unincorporated Sacramento County or the City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.

2, 2A, and 2B

Under the Off-site Water Facility Alternatives 2, 2A, and 2B, a new WTP would not be constructed and therefore, issues related to potential geologic hazards and the potential effects on the WTP would not be applicable. However, these alternatives would still involve the construction of a treated-water conveyance pipeline that, if damaged during a seismic event, could disrupt potable water service. As a result, this **direct** impact is considered **potentially significant**. **No indirect** impacts would occur. ***[Lesser]***

Mitigation Measure: Implement Mitigation Measures 3B.7-1a and 3B.7-1b.

With the implementation of the above mitigation, potential impacts from strong seismic ground-shaking would be reduced to a **less-than-significant** level through the implementation of recommendations made by a licensed geotechnical engineer in compliance with the CBC prepared as part of a formal geotechnical investigation.

IMPACT 3B.7-2 Construction-Related Erosion. *Construction activities during implementation of the Off-site Water Facility Alternatives would involve grading and movement of earth in soils subject to wind and water erosion hazard.*

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A

Construction of the various Off-site Water Facility components would expose bare soil to precipitation and wind erosion, thereby potentially resulting in increased sedimentation of local waterways. Ground-disturbing activities, including removal of vegetation, could cause increased water runoff rates and concentrated flows, thereby potentially leading to accelerated erosion. In agricultural areas, this could result in measurable losses to soil productivity. In addition, because construction would occur in close proximity to local waterways, such effects to water quality and aquatic habitat could be considerable if proper erosion control measures are not implemented. Dewatering operations used during pipeline installation and the installation of sub-grade structures associated

with the WTP or storage tanks also carries the potential for increased sedimentation of local waterways. Therefore, this **direct** impact is considered **potentially significant**. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure: Implement Mitigation Measures 3B.9-1a, 3B.9-1b, 3B.9-1c, 3B.9-3a, and 3B.9-3b.

Implementation: City of Folsom Utilities Department

Timing: Prior to start of construction

Enforcement:
1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For the off-site water facilities within Unincorporated Sacramento County or the City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.

With implementation of the mitigation measures listed above, erosion from construction activities related to the off-site water facilities would be reduced to a **less-than-significant** level because a SWPPP would be prepared and BMPs would be implemented to reduce erosion along the pipeline alignment, and a drainage plan would be prepared and implemented to reduce erosion at the WTP.

IMPACT 3B.7-3 Unstable Geologic Conditions. *The Off-site Water Facility Alternatives could be located on a geologic unit or soil that is unstable, or that could become unstable as a result of the Off-site Water Facilities.*

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A

Based on the discussions provided for geologic hazards within the setting description, the primary concerns related to local geologic conditions is related to settlement and differential settlement. Settlement could potentially occur from the placement of new static loads with possibly half of the settlement taking place during construction or shortly thereafter. Differential settlement could occur between foundation blocks or slabs due to variability in underlying soil conditions. Total and differential settlement could therefore damage proposed foundations, structures, and pipelines. Additionally, although unlikely, regional subsidence could cause potential damage or rupture to the buried pipelines and other associated structures designed with minimal tolerance for settlement. Therefore, these **direct** and **indirect impacts** is considered **potentially significant**. ***[similar]***

Mitigation Measure: Implement Mitigation Measures 3B.7-1a and 3B.7-1b.

With implementation of the mitigation measures listed above, geologic hazards in terms of total and differential settlement would be reduced to a less-than-significant level, because a licensed geotechnical or soils engineer would investigate the site-specific soil conditions and design the facilities to withstand settlement in accordance with the CBC.

IMPACT 3B.7-4 Exposure to Potential Hazards from Problematic Soils. *The Off-site Water Facility Alternatives could encounter expansive or corrosive soils thereby subjecting related structures to potential risk of failure.*

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A

As provided in Exhibit 3B.7-2, soils within Zone 4 generally exhibit a moderate to high potential for shrink-swell. Unless properly mitigated, shrink-swell soils could exert additional pressure on buried pipelines producing shrinkage cracks that would allow water infiltration and compromise the integrity of backfill material. Depending on the depth of the buried pipeline, soil expansion or contraction could lead to undue lateral pipeline stress and

stress of structural joints. Over time, lateral stresses could lead to pipeline rupture or leaks in the coupling joints. Likewise, structural facilities, including the WT and pump station, could be subjected to hazards from expansive soils is constructed directly on expansive soil materials. This **direct** impact would be a **potentially significant**. **No indirect** impacts would occur. ***[Similar]***

As illustrated in Exhibit 3B.7-2 soil materials encountered within Zone 4 of the Off-site Water Facilities Study Area exhibit a moderate to high potential for corrosion to uncoated steel. Corrosive soil materials could lead to pipe corrosion, potentially resulting in pipe failure and localized surface flooding of water or localized settlement of surface soils in the location of the failure. Therefore, this **direct** impact is considered **potentially significant**. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure: Implement Mitigation Measure 3B.7-1a.

Mitigation Measure 3B.7-4: Implement Corrosion Protection Measures.

As determined appropriate by a licensed geotechnical or civil engineer, the City shall ensure that all underground metallic fittings, appurtenances, and piping include a cathodic protection system to protect these facilities from corrosion.

Implementation: City of Folsom Utilities Department

Timing: Prior to completion of engineering plans for all Off-site Water Facilities

Enforcement:

1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.

2. For the off-site water facilities within Unincorporated Sacramento County or the City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.

With implementation of the mitigation measure listed above, soil-related hazards in terms of expansive and corrosive soils would be reduced to a **less-than-significant** level because a licensed geotechnical or soils engineer would investigate the site-specific soil conditions and design the facilities to withstand expansive soil pressures and soil corrosivity.

IMPACT 3B.7-5 Possible Damage of or Destruction to of Previously Unknown Unique Paleontological Resources during Construction-Related Activities. *Construction of the Off-site Water Facility Alternatives could directly or indirectly destroy a unique paleontological resource or site.*

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A

Fossil remains of vertebrates that existed during the Pleistocene have been encountered during excavation activities within the Riverbank, Mehrten, and Ione geologic formations, as shown in Exhibit 3B.7-1 underlie the southern and northeastern portions of Zone 4 of the Off-site Water Facilities Study Area. The remaining portions of Zone 4 are generally underlain by the Laguna Formation, mine/dredge tailings, or Holocene-aged channel deposits. As provided in the discussion of the affected environment, these formations are generally devoid of significant vertebrate fossils, and no previously recorded fossil sites from this formation are known from either Zone 4 or the surrounding area (City of Rancho Cordova 2006). Furthermore, the conveyance pipeline would be constructed within existing roadways or along the shoulder and, therefore, has a low likelihood for disturbing native ground surfaces.

Nevertheless, each of the Off-site Water Facility Alternatives along one or more portions of each respective alignment has the potential to encounter the sensitive geologic formations identified above. The conveyance alignment for the Proposed Off-site Water Facility Alternative and Offsite Water Facility Alternatives 1 and 1A, would traverse cross-county east of Gerber Road, which as shown in Exhibit 3B.7-1, is underlain by the Riverbank Formation. In addition, all the conveyance alignments would traverse areas in the vicinity of Prairie City Road, which are underlain by the Mehrten and Ione Formations, thereby creating the potential for encountering paleontological resources during construction-related excavation/trenching.

Since fossils have been discovered within the Mehrten, Ione, and Riverbank Formations throughout the Central Valley, these formations are considered paleontologically sensitive. As a result, the potential for encountering and potentially damaging or destroying unique paleontological resources during construction activities within these sensitive geologic formations is considered a **potentially significant direct** impact. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure 3B.7-5: Conduct Construction Personnel Education, Stop Work if Paleontological Resources are Discovered, Assess the Significance of the Find, and Prepare and Implement a Recovery Plan as Required.

To minimize potential adverse impacts on previously unknown potentially unique, scientifically important paleontological resources, the City shall implement appropriate measures during construction of the Offsite Water Facility improvements. These measures shall be required for construction activities at the following locations: (1) Grant Line Road, south of SR 16; (2) Florin road, east of Excelsior Road; (3) Gerber Road, east of Excelsior Road; (4) White Rock Road, east of Prairie City Road; and (5) Prairie City Road and shall include:

- Before the start of any earthmoving activities for any project phase in the Riverbank Formation, the project applicant(s) shall retain a qualified paleontologist or archaeologist to train all construction personnel involved with earthmoving activities, including the site superintendent, regarding the possibility of encountering fossils, the appearance and types of fossils likely to be seen during construction, and proper notification procedures should fossils be encountered.

- If paleontological resources are discovered during earthmoving activities, the construction crew shall immediately cease work in the vicinity of the find and notify Sacramento County Planning and Community Development Department. The project applicant(s) shall retain a qualified paleontologist to evaluate the resource and prepare a recovery plan in accordance with Society of Vertebrate Paleontology guidelines (1996). The recovery plan may include, but is not limited to, a field survey, construction monitoring, sampling and data recovery procedures, museum storage coordination for any specimen recovered, and a report of findings. Recommendations in the recovery plan that are determined by the County to be necessary and feasible shall be implemented before construction activities can resume at the site where the paleontological resources were discovered.

Implementation: City of Folsom Utilities Department

Timing: During earthmoving activities in the Roverbank, Ione, and Mehrten Formations as shown in Wagner et al, 1981.

Enforcement:
1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.

2. For the off-site water facilities within Unincorporated Sacramento County or the City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.

Implementation of Mitigation Measure 3B.7-5 would reduce potentially significant impacts related to damage or destruction of unique paleontological resources within the Riverbank Formation to a less-than-significant level because construction workers would be alerted to the possibility of encountering paleontological resources, and in the event that resources were encountered, and fossil specimens would be recovered and recorded and would undergo appropriate curation.

3B.7.4 RESIDUAL SIGNIFICANT IMPACTS

With implementation of Mitigation Measures 3B.7-1a, 3B.7-1b, 3B.9-1a, 3B.9-1b, and 3B.9-1c, 3B.7-4, and 3B.7-5, impacts related to strong seismic ground-shaking, construction-related erosion, soil hazards related to settlement and corrosion, and the potential for encountering previously undiscovered paleontological resources would be reduced to less-than-significant levels. Based on these circumstances, the Off-site Water Facility Alternatives would not result in residual significant and unavoidable impacts related to geology, soils, or paleontological resources.

3A.8 HAZARDS AND HAZARDOUS MATERIALS - LAND

This section contains a program-level evaluation of hazards and hazardous materials. However, impacts related to hazards and hazardous materials would be the same under each individual development phase as under the program (entire SPA) analysis.

3A.8.1 AFFECTED ENVIRONMENT

TERMINOLOGY

For purposes of this section, the term "hazardous materials" refers to both hazardous substances and hazardous wastes. A "hazardous material" is defined by Federal regulations as "a substance or material that … is capable of posing an unreasonable risk to health, safety, and property when transported in commerce" (49 Code of Federal Regulations [CFR] 171.8). California Health and Safety Code Section 25501 defines a hazardous material as follows:

> Hazardous material means any material that, because of its quantity, concentration, or physical, or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, and any material which a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

Hazardous wastes are defined in California Health and Safety Code Section 25141(b) as wastes that:

> …because of their quantity, concentration, or physical, chemical, or infectious characteristics, [may either] cause, or significantly contribute to an increase in mortality or an increase in serious illness [, or] pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Soil that is excavated from a site containing hazardous materials is a hazardous waste if it exceeds specific criteria listed in the California Code of Regulations (CCR) Title 22. Cleanup requirements are determined on a case-by-case basis by the agency with lead jurisdiction over the project.

A few of the specific terms related to cleanup activities are defined below:

- **Remedial Investigation**—An in-depth study designed to determine the nature and extent of contamination at a site (e.g., what hazardous substances are present, how much there is, where it is).
- **Baseline Risk Assessment**—A study performed to provide risk managers with an understanding of the actual and potential risks to human health and the environment posed by the site, and any uncertainties associated with the assessment.
- **Feasibility Study**—An in-depth study designed to evaluate the effectiveness and costs of various remedial alternatives for the conditions defined by the Remedial Investigation and Baseline Risk Assessment.
- **Remedial Action Plan**—A plan, approved by the California Department of Toxic Substances Control (DTSC), that outlines a specific program leading to the remediation of a contaminated site. Once the draft Remedial Action Plan is prepared, a public meeting is held and comments from the public are solicited for a period of no less than 30 days. After the public comment period has ended and public comments have been

responded to in writing, DTSC will generally approve the final remedy for the site (the final Remedial Action Plan). This plan is generally used for large, long-term projects.

- **Removal Action Workplan—**A plan that is similar to the Remedial Action Plan described above, but that is generally used for small, short-term projects.

- **Certificate of Completion**—A DTSC document that confirms that the Remedial Action Plan has been completed.

- **No Further Action**—The decision by DTSC that remedial actions are not necessary because environmental contamination is not present at a site.

Remedial investigations provide information related to current site conditions, wastes found on site, human health and ecological risks, and evaluation of potential treatment technologies. The feasibility study is the mechanism for the development, screening, and detailed evaluation of alternative remedial actions. Remedial actions may include:

- institutional controls (e.g., deed restrictions);
- monitoring;
- physical containment; and
- mass reduction (e.g., biological or chemical treatment).

REGULATORY AND ENVIRONMENTAL HISTORY

Historical land uses include agricultural activities (primarily livestock grazing) and mining activities. (Sacramento Local Agency Formation Commission [LAFCo] 1998.) During the 1960s and 1970s, a portion of the southeastern corner of the SPA was used to separate and burn chemicals associated with aerospace activities conducted by the Aerojet-General Corporation (Aerojet). This portion of the site is currently undergoing remediation (see discussion below). The Aerojet Superfund site is located immediately west of the SPA. One portion of the Aerojet Superfund site (Area 40) is located in the SPA itself, in the Island Operable Unit (OU) (see discussion below). An approximately 54-acre area at the northwest corner of the SPA was formerly included in the Aerojet Superfund site, but is part of a "carve-out" area that has been removed from the site by regulatory agencies. The proposed off-site detention basin (located west of Prairie City Road) would be located within the Eastern OU of the Aerojet site.

Aerojet Superfund Site

Aerojet has owned and operated a facility for aerospace testing activities in Rancho Cordova since the early 1960s. The facility consists of approximately 8,500 acres, approximately 5,900 of which were designated as a Superfund site in 1983 by the U.S. Environmental Protection Agency (EPA). Previous activities conducted at the site included solid rocket motor manufacturing and testing, liquid rocket engine manufacturing and testing, chemical manufacturing, and disposal of materials. During the development of rocket propulsion systems, various chemicals were used at the Aerojet facility, including solvents, propellants, fuels, oxidizers, metals, and explosives. In addition to the use of these chemicals, Aerojet operated two chemical plants at the facility, which manufactured various herbicides, pesticides, and pharmaceutical-related compounds. Historical disposal methods included burning, landfilling, surface impoundment, and deep well injection. Several plumes of contaminated groundwater have been identified. The major contaminants found in the groundwater and vadose zone (the area between the land surface and the water table) include n-nitrosodimethylamine (NDMA), perchlorate, and trichloroethylene (TCE). In 1989, Aerojet, EPA, the Central Valley Regional Water Quality Control Board (RWQCB), and DTSC entered into a Partial Consent Decree, which established specified procedures and obligations to achieve the goals delineated in the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA, generally referred to as Superfund) and the National Oil and Hazardous Substances Pollution Contingency Plan. One such requirement included performing Remedial Investigations/Feasibility Studies (RI/FSs) on the entire 8,500-acre facility. In July 1998, the Partial Consent

Decree was modified to include removal of certain areas (referred to as "carve-out" lands) from the Aerojet Superfund site and division of the site into OUs to facilitate completion of the RI/FSs. An approximately 53-acre area at the northwest corner of the SPA (Prairie City Business Park, illustrated in Exhibit 3A.8-1) is included in this carve-out area (Area 40), which is no longer a part of the Superfund site.

Before any portion of the Aerojet Superfund site can be made available for new uses, EPA must issue a record of decision (ROD) or similar certification indicating that remedial actions have been completed, and that no unacceptable risks would be posed to human health or the environment.

Area 40

Area 40, which is part of the Island OU of the Aerojet Superfund site, is located in the SPA, a short distance east of Prairie City Road, approximately half way between U.S. 50 and White Rock Road. The RI/FS prepared by Aerojet (Aerojet General Corporation 2007, included as Appendix G1) discusses the site history, sources of hazardous materials, and field sampling activities, and site management. The contents of the RI/FS are summarized briefly below.

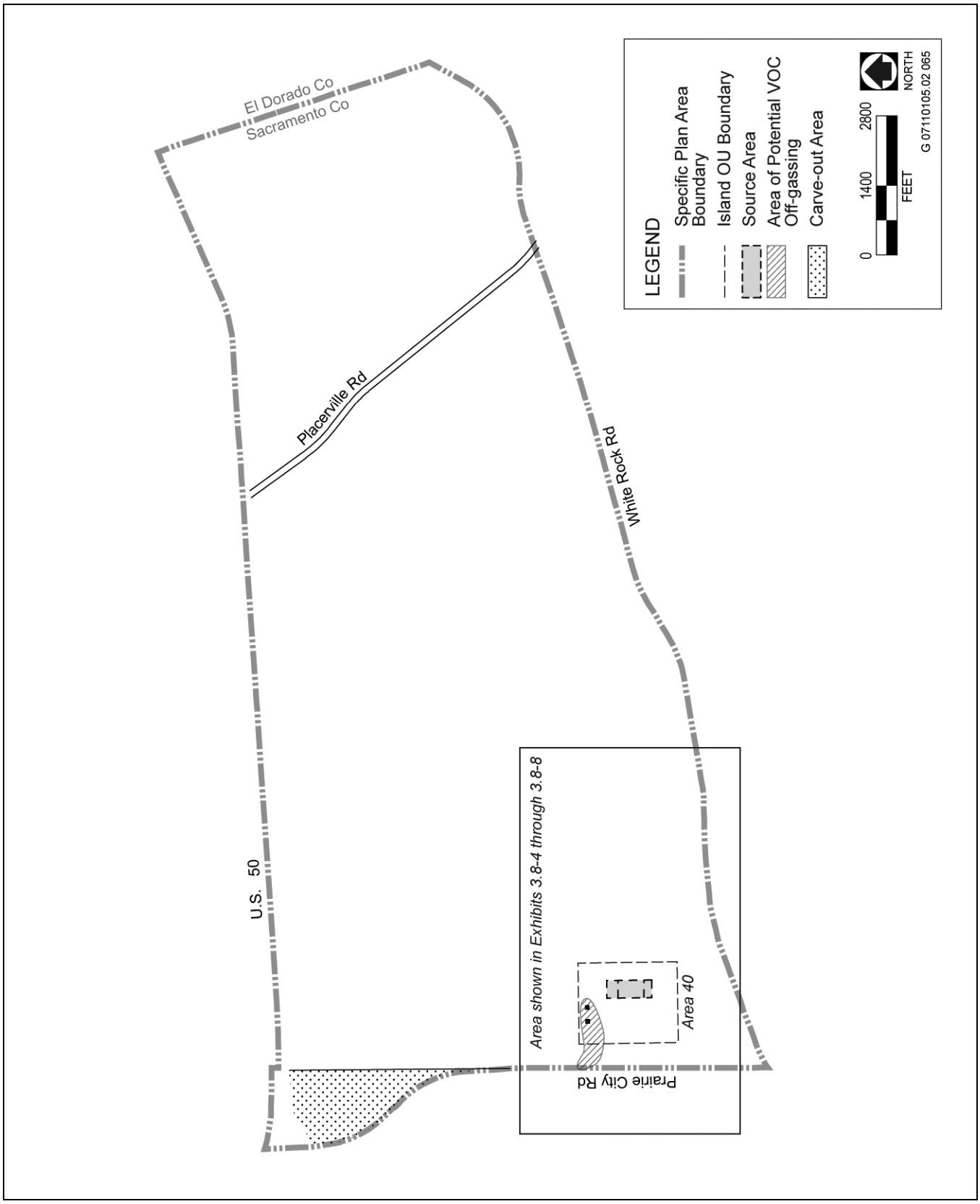
Aerojet leased Area 40 from 1960 to the early 1970s and used the land as a waste disposal site. There are five "source areas" (locations where toxic substance entered the environment), which are identified as 36B –40B, located within Area 40. Exhibit 3A.8-2 illustrates the Area 40 boundary, and the locations of all five source areas in the SPA, which are discussed separately below.

Source Areas 36B and 37B consist of chemical management sumps. These are composed of two gunite-lined sumps where solvents, including TCE, were separated from rocket propellant (see Exhibit 3A.8-2). Following separation, TCE was shipped to another facility for reprocessing. Before final abandonment, the sumps were filled with waste propellant, the propellant was burned, and then the sumps were buried. A groundwater plume containing volatile organic compounds (VOCs), metals, and perchlorate at concentrations in excess of human health screening levels extends from the sump location west underneath Prairie City Road towards the main Aerojet facility.

Source Areas 38B, 39B, and 40B are located within the Eastern Burn Area (see Exhibit 3A.8-2). Each location was used for disposal (i.e., burning) of test lab waste, propellant, and flammable liquids. Soil from the Eastern Burn Area has been removed and disposed of within the main Aerojet facilities, west of Prairie City Road. However, VOCs and perchlorate concentrations that could potentially pose a risk to human health and ecological receptors may be present in the soil and bedrock at two locations within the Eastern Burn Area, as shown in Exhibit 3A.8-2 (ERM 2008).

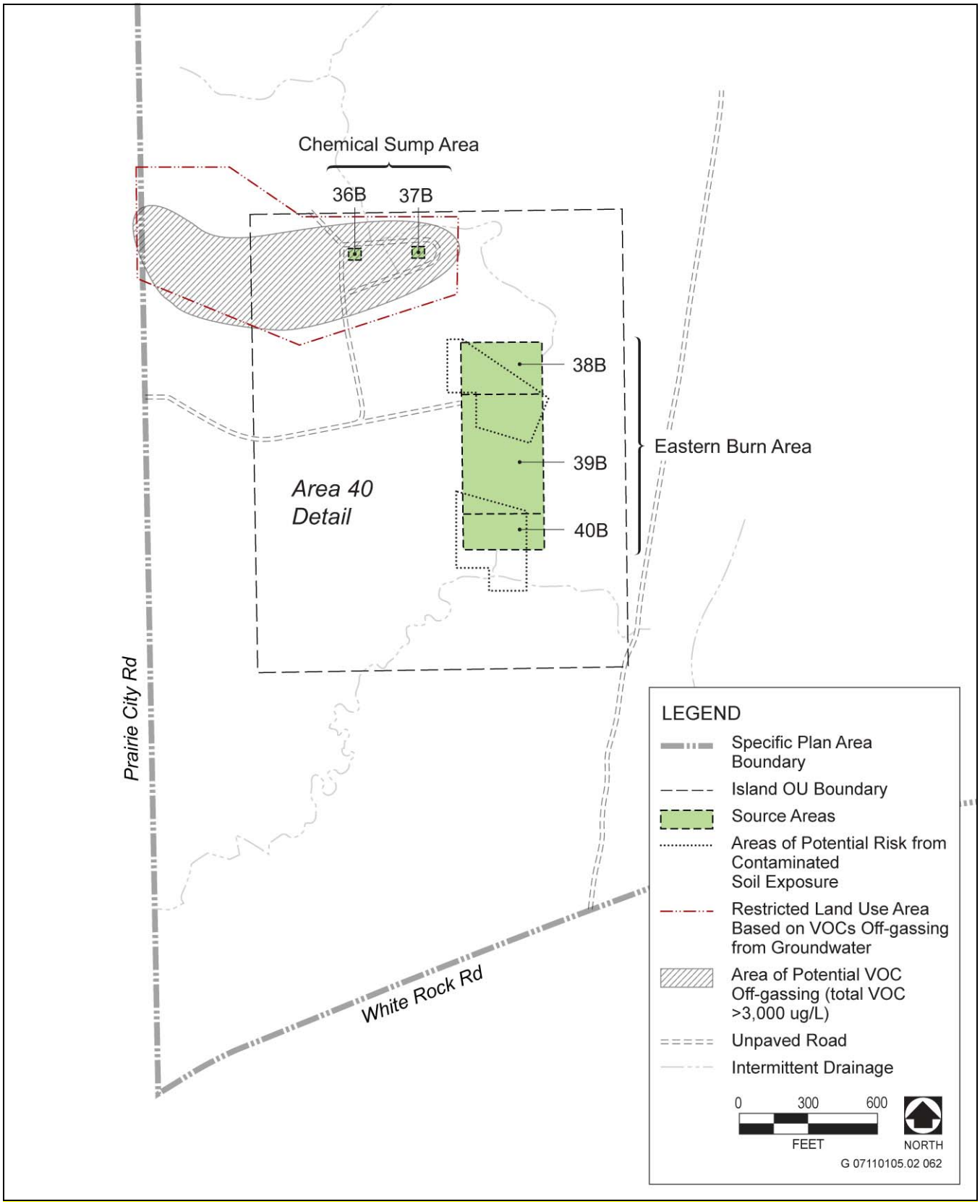
In 2007, Aerojet released a RI/FS for the Island OU, which includes scattered sites across the Aerojet facility, including Area 40. The RI/FS summarizes data from monitoring wells installed in 1985 and 1992. This report discloses that levels of VOCs, metals, and perchlorate in the groundwater plume associated with the chemical management sumps exceed human health screening levels. Aerojet delineated areas where VOC concentrations in soil and/or groundwater pose the potential for off-gassing of VOCs into ambient air (these areas are shown in Exhibit 3A.8-2, and overlaid on the land use plans for the project alternatives in Exhibits 3A.8-4 through 3A.8-8 in the "Impact Analysis" subsection below) (Aerojet General Corporation 2007, included as Appendix G2). Health effects associated with VOC exposure range from short-term effects such as headaches, dizziness, memory impairment, and eye and respiratory tract irritation, to long-term effects such as cancer. Off-gassing from contaminated soils and groundwater is of particular concern in areas where buildings are constructed, because studies have concluded that many VOCs will accumulate in indoor air at concentrations up to five times higher than the ambient outdoor conditions (EPA 2009).

In 2007, Arcadis evaluated existing groundwater data from Area 40 to determine probable human health risks associated with the potential land uses in the vicinity of Area 40. The groundwater data were provided by Aerojet, and included only data collected since 2006, and excluded samples from bedrock. The purpose of the evaluation was to determine probable human health risks associated with the potential land uses in the vicinity of Area 40.



Source: Aerojet General Corporation 2007, Adapted by AECOM in 2009

Area 40 and Carve-Out Area **Exhibit 3A.8-1**



Source: Aerojet General Corporation 2007, Adapted by AECOM in 2009

Area 40 Detail **Exhibit 3A.8-2**

Arcadis concluded that development of the area of potential VOC off-gassing into ambient air (as shown in Exhibit 3A.8-2) as parks or open space would not pose a substantial risk to human health. These conclusions were based on an understanding that the EPA would ensure that contaminated soils are remediated appropriately in accordance with future land use designations (ARCADIS 2007, included as Appendix G3).

Eastern Operable Unit

An off-site detention basin is proposed east of Prairie City Road. This detention basin would be located within the Eastern OU of the Aerojet Superfund site. The Eastern OU includes 91 source areas on approximately the eastern one-third of the Aerojet facility, and generally includes Aerojet's liquid rocket test areas.

The land identified for the proposed detention basin is not within an identified source area as defined in the Partial Consent Decree (Partial Consent Decree entered June 23, 1989 [and modifications thereto] in the consolidated actions Nos. CIVS-86-0063-EJG and CIVS-86-0064-EJG) and was not identified as an area of concern in the Eastern Operable Unit Sampling Plan (Aerojet General Corporation 2008).

PHASE 1 ENVIRONMENTAL SITE ASSESSMENTS

The Phase I Environmental Site Assessments discussed below were prepared following the requirements of ASTM Standard E 1527-05, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. Phase I Environmental Site Assessments within the project that have been completed at the time of release of this EIS/EIR include:

- *Phase I Environmental Site Assessment, Folsom Sphere of Influence , Northern and Southern Lots, Folsom, CA* (ERM 2008, included as Appendix G4).
- *Phase I Environmental Site Assessment, Approximate 80-Acre Property Portion of APN 072-0060-029, White Rock Road, East of Prairie City Road. Sacramento County, California* (Ramcon 2003a, included as Appendix G5).
- *Addendum – Prospect Pit Investigation, Phase I Environmental Site Assessment Approximate 80-Acre Property Portion of APN 072-0060-029, White Rock Road, East of Prairie City Road. Sacramento County, California* (Ramcon 2003b, included as Appendix G6).
- *Phase I Environmental Site Assessment, Carpenter Ranch, Three Additional Parcels, US Highway 50 and Scott Road, Sacramento County, California* (Versar 2006, included as Appendix G7). This area is referred to as "Carpenter Ranch East" below.
- *Environmental Site Assessment Folsom 138 Property* (Wallace, Kuhl & Associates 2004, included as Appendix G8).
- *Environmental Site Assessment Folsom Heights Property* (Wallace, Kuhl & Associates 2005, included as Appendix G9).
- *Phase I Environmental Site Assessment for Russell Ranch South El Dorado Hills Area* (Youngdahl & Associates, Inc. 1995, included as Appendix G10). The Russell Ranch property is a portion of the Folsom South property.
- *Phase I Environmental Site Assessment, Carpenter Ranch, Sacramento County, California* (Versar 2005, included as Appendix G11). This area is referred to as "Carpenter Ranch West" below.
- *Phase I Environmental Site Assessment for Mangini Property* (Youngdahl Consulting Group, Inc., 2007, included as Appendix G12). The Mangini property is a portion of the Folsom South property.

The purpose of a Phase I Environmental Site Assessment is to evaluate and identify recognized environmental conditions (RECs), which are the presence or likely presence of petroleum products or hazardous substances on the property under conditions that indicate an existing release, a past release, or a material threat of a release into structures on the property, or into the ground, groundwater, or surface water of the property. The Phase I Environmental Site Assessments base their site evaluations on sources including site reconnaissance, interviews, database searches, and evaluation of aerial photographs. Portions of the SPA that were evaluated in the Phase I Environmental Site Assessment are illustrated on Exhibit 3A.8-3.

Carpenter Ranch (East)

Carpenter Ranch (east) consists of undeveloped land used for agricultural purposes (Assessor Parcel Numbers (APNs) 072-0270-129, 072-0270-133, and 072-0270-147). It is bisected by Old Placerville Road and a decommissioned Southern Pacific Railroad track. A search of relevant agency databases, including the Cortese List maintained by DTSC, did not include records associated with this property. Based on this finding, and in combination with personal interviews and site reconnaissance, Versar concluded that there were no RECs with respect to this site, and no further investigation was recommended (Versar 2006).

Folsom 138 Property

The Folsom 138 property, APN 072-0070-006, is used as rangeland. This site is not listed on relevant agency databases, including the Cortese List, EPA, or the State Water Resources Control Board (SWRCB). In addition, there was no indication of potentially hazardous conditions discovered during field reconnaissance. No RECs were identified for this property and no further investigation was recommended. (Wallace, Kuhl & Associates 2004.)

Folsom Heights Property

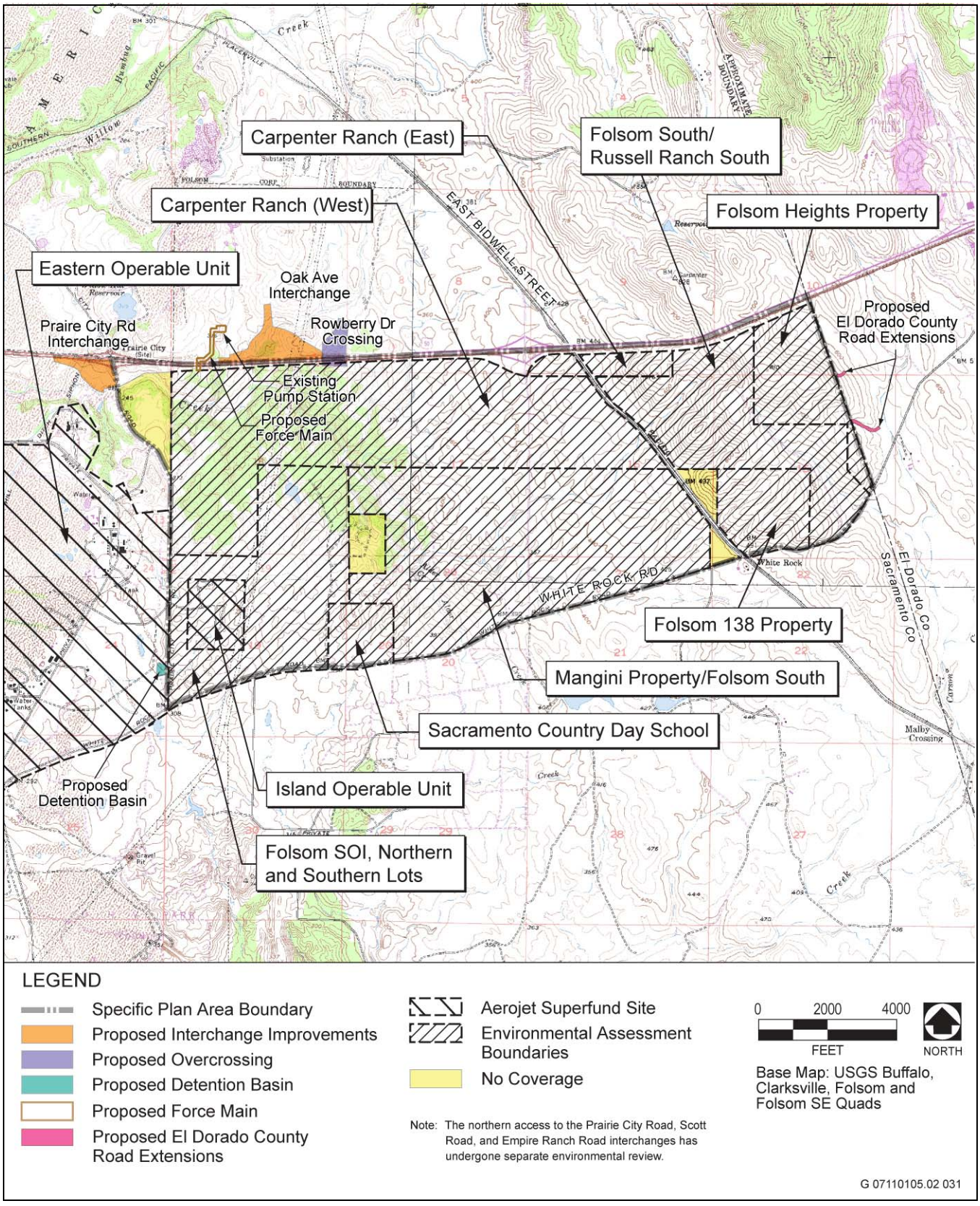
The Folsom Heights property consists of undeveloped land used for cattle grazing land (APNs 072-0070-001 and 072-0270-028). A review of agency databases, including the Cortese List, did not identify any records associated with this property. There was no evidence of RECs for this site and no further investigation was recommended. (Wallace, Kuhl & Associates 2005.)

Russell Ranch South

Russell Ranch South, which is primarily used for cattle grazing purposes, is located in the eastern portion of the SPA. This property (which is the eastern portion of the Folsom South property) consists of three parcels: 072-0070-032, 072-0270-070, and 072-0272-071. There are five large radio/utility towers with associated buildings and chain-link fencing in addition to electrical power poles and lines located in the northern portion of the site. Database searches, including the National Priorities List, Cortese List, and Sacramento County Environmental Health Department lists, did not identify records related to this property. Although no RECs were identified, Youngdahl & Associates did recommend a further investigation of potential electromagnetic fields (EMFs) from the radio towers and asbestos within the associated buildings. (Youngdahl & Associates 1995.)

Sacramento Country Day School

The Sacramento Country Day School parcel is currently used for cattle grazing, and has historically been used for this purpose. The Phase I Environmental Site Assessment reported that there is a potential for “prospect pits” from historic mining activities on this parcel. Ramcon (2003a) recommended additional limited testing for mercury within the soil due to possible presence of the prospect pits and suggested that since the property is proposed for use as a school site, a Phase I Environmental Site Assessment that meets the requirements of the California Education Code should be completed and submitted to DTSC (Ramcon 2003a). Ramcon then performed further testing of soil for mercury related to previous mining activities, and their results indicated that residual mercury levels were below levels that would pose a risk to human health (Ramcon 2003b).



Source: Arcadis 2007; ERM 2008; Wallace, Kuhl & Associates 2004, 2005; Versar 2006; Youngdahl & Associates 1995; Adapted by AECOM in 2009

Environmental Site Assessment Coverage **Exhibit 3A.8-3**

Carpenter Ranch (West)

Carpenter Ranch (west) consists of 1,005 acres of dry grassland currently used for cattle grazing, with several high-voltage power lines bisecting the property from north to south. This property includes parcels 072-0060-048 and 072-0060-045. Versar observed a limited area of apparent mining activity (piles of gravel and cobbles and an old cable) on the property, on the south side of Alder Creek west of the power lines. There was no evidence of RECs for this site, and no further investigation was recommended. (Versar 2005.)

Mangini Property

The Mangini Property includes the western portion of the Folsom South property (parcels 072-0060-038 and 072-0060-069). Youngdahl & Associates identified the potential for adverse impacts from gold processing chemicals as a REC for this property based on identified past mining uses of the property. A total of four open, vertical mine shafts were identified on the northwest portion of the property (near Alder Creek, west of Scott Road). Waste rock tailing piles and hummocky land were observed near the open mine shaft. Stamp mills were not likely used at the site. Youngdahl & Associates recommended that the four mine shafts and mine features should be properly mitigated, and an abandoned well should be properly destroyed and abandoned. Debris piles located near the exploration holes should be removed and properly disposed of. (Youngdahl & Associates 2007.)

ABANDONED MINE SHAFTS

In spring 2009, AECOM surveyed the SPA for biological resources. While conducting these surveys, it was noted that an abandoned mine shaft and associated barbed wire fencing are located on the northwest portion of the SPA. (Youngdahl & Associates also identified four abandoned mine shafts on the Mangini Property.) Improper closure of mine shafts can result in hazards from accidents such as cave-ins or exposure to toxic gases. Similar structures, which may not have been abandoned in accordance with Federal, state, and local regulations, may be located in the SPA.

ASBESTOS AND LEAD

An existing on-site residence and auxiliary buildings associated with radio/utility towers on the eastern portion of the SPA may have been constructed when asbestos-containing materials (ACMs) and lead-based paints were used. Asbestos is designated as a hazardous substance when the fibers have potential to come in contact with air because the fibers are small enough to lodge in the lung tissue and cause health problems. The presence of ACMs in existing buildings poses an inhalation threat only if the ACMs are found to be in a friable state. If the ACMs are not friable, there is no inhalation hazard because asbestos fibers remain bound in the material matrix. Emissions of asbestos fiber to the ambient air, which can occur during activities such as renovation or demolition of structures made with ACMs (e.g., insulation), are regulated in accordance with Section 112 of the Federal Clean Air Act.

Human exposure to lead has been determined by EPA and the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) to be an adverse health risk, particularly to young children. Demolition of structures containing lead-based paint requires specific remediation activities regulated by Federal, state, and local laws.

PCBs

Electrical transformers that could contain polychlorinated biphenyls (PCBs) may be associated with the electrical power lines. PCBs are considered hazardous materials and have been banned because of their toxicity. Although PCBs are no longer manufactured or used, release into the environment can occur from leaks or releases from pre-1979 electrical transformers. They have been shown to cause cancer in animals, along with effects on the immune,

reproductive, nervous, and endocrine systems, and studies have shown evidence of similar effects in humans (EPA 2009).

MOSQUITO/VECTOR CONTROL

All species of mosquitoes require standing water to complete their growth cycle; therefore, any body of standing water represents a potential mosquito breeding area. Water quality also affects the productivity of a potential mosquito breeding areas. Typically, greater numbers of mosquitoes are produced in water bodies with poor circulation, higher temperatures, and higher organic content (i.e., poor water quality) than in water bodies having good circulation, lower temperatures, and lower organic content. In addition, irrigation and flooding practices may influence the level of mosquito production associated with a water body. Typically, greater numbers of mosquitoes are produced in water bodies with water levels that slowly increase or recede than in water bodies with water levels that are stable or that rapidly fluctuate. Mosquito larvae prefer stagnant water and the protected microhabitats provided by stems of emergent vegetation (U.S. Army Corps of Engineers [USACE] 1998).

The SPA contains natural mosquito breeding habitat, including cattails, tree holes, woodland pools, intermittent streams, vernal pools, and ponds. In addition to being a nuisance pest, mosquitoes are vectors (i.e., carriers) of many diseases, including West Nile virus, malaria, and dengue. West Nile virus, which can cause symptoms ranging from fever to paralysis and death, is considered to be the most prevalent mosquito-borne disease in the United States (Sacramento-Yolo Mosquito and Vector Control District 2009). In 2008, Sacramento County reported West Nile Virus cases in 13 humans, 9 horses, 130 dead birds, 277 mosquito samples, 7 sentinel chickens, and 1 squirrel (California Department of Public Health 2009).

The SPA is located in the Sacramento-Yolo Mosquito Abatement District. Although the off-site roadway connections in El Dorado County are outside the District's jurisdiction, no water or drainage features are planned in this area, and therefore the project would not affect mosquito breeding habitat in El Dorado County.

The Sacramento-Yolo Mosquito Abatement District (District) applies chemicals at extremely low rates, as recommended by EPA. Pesticides in use include biological controls, such as *Bacillus* sp.; methoprene, an insect growth regulator; and pyrethrins and pyrethroids, all of which have been evaluated and are regulated by EPA. Biological larvicides include *Bacillus thuringiensis israelensis (Bti)* and *Bacillus sphaericus (B)*, which are naturally occurring bacteria. EPA indicates that the microbial pesticides *Bti* and *B. sphaericus* have undergone extensive testing before registration. They are essentially nontoxic to humans, so there are no concerns about human health effects with *Bti* or *B. sphaericus* when they are used according to label directions. EPA testing also indicates that there are no risks to wildlife, nontarget species, or the environment associated with these microbial pesticides, when used according to label directions (EPA 2007a). Only mosquitoes, black flies, and certain midges are susceptible to these bacteria. Other aquatic invertebrates and nontarget insects are unaffected. Larvicidal oils and monomolecular films are used to drown the mosquito larvae in their later aquatic stages, when they are not feeding, by forming a thin coating on the surface of the water. For example, methoprene is an insect growth regulator that is target-specific and is designed not to harm mammals, waterfowl, or beneficial predatory insects.

According to the EPA, pyrethroids can be used for public health mosquito control programs without posing unreasonable risks to human health when applied according to the label. They also do not pose unreasonable risks to wildlife or the environment, although pyrethroids are toxic to fish and to bees. For that reason, EPA has established specific precautions on the label to reduce such risks, including restrictions that prohibit the direct application of products to open water or within 100 feet of lakes, streams, rivers, or bays (EPA 2002). The District uses pyrethrins and pyrethroids for its adult mosquito fogging program in and around populated areas. Pyrethrins are insecticides that are derived from an extract of chrysanthemum flowers, and pyrethroids are synthetic forms of pyrethrins. These are generally applied by truck-mounted or handheld foggers. These materials used to control both adult and larval mosquitoes are registered with EPA, which evaluates safe use by assessing potential human health and environmental effects associated with use of each product (EPA 2007b).

ELECTROMAGNETIC FIELDS

EMFs are invisible energy fields that surround any electrical device, including electrical transmission lines. Electric fields may be shielded or weakened by materials that conduct electricity, such as trees, buildings, and human skin. However, magnetic fields are more difficult to shield because they pass through most materials. Both electric and magnetic fields decrease rapidly as the distance from the source increases. The frequency of the electrical field is usually expressed in terms of a unit called a hertz (Hz), while the strength of the magnetic field is often expressed in terms of a unit called the gauss (G). A milligauss (mG) is 1/1,000 of a gauss. Different forms of EMFs are produced by different sources, including electrical energy facilities such as substations and power transmission lines, as well as common household appliances and office equipment.

Most public attention and scientific research has been focused on EMFs generated by electric energy transmission facilities, partially because some studies have reported an increased cancer risk associated with exposure to these types of magnetic fields. These facilities generate power frequencies in the range of 50 to 60 Hz (referred to as extremely low frequency [ELF]), and may generate magnetic fields that range from 86 mG to 0.2 mG, depending on the type of power line and the distance from the line. The National Institute of Environmental Health Sciences (NIEHS) summarized the results of monitoring studies that indicate most people in the United States are exposed to magnetic fields that average less than 2 mG (NIEHS 2002).

A variety of epidemiological and laboratory studies, including those sponsored and funded by international, Federal, and state organizations and agencies, have been carried out regarding EMF exposure and its potential human health risks. (For a summary of some of these studies, see NIEHS 2002 and National Cancer Institute 2005.) Some of these studies have concluded that there is a weak link between the development of childhood leukemia and proximity to EMFs generated by electric power transmission facilities, while other studies have concluded there is no direct link. Scientific research in this area is ongoing in various countries throughout the world. Because of the potential that there may be a relationship between cancer and EMFs among children, the California Department of Education (CDE) has taken the position that K–12 schools may not be constructed within 150 feet of an easement for a 230-kilovolt (kV) transmission line (approximately 200 feet from the power line itself). However, because so many studies have concluded that evidence for a direct link is "weak," the state of California has not adopted any laws or regulations requiring an additional setback from electric power transmission facilities beyond the utility right-of-way easement, which is generally 50 feet on either side of a 230-kV line.

Both the Sacramento Municipal Utility District (SMUD) and Pacific Gas and Electric Company (PG&E) operate electrical transmission lines in the SPA. There are four high-voltage transmission lines (one 69 kV, one 115 kV, and two 230 kV) that run in an approximate north to south direction through the western portion of the SPA, within an approximately 400-foot-wide easement (Capitol Utility Specialists 2009, included as Appendix G13).

The eastern edge of the SPA contains cell phone towers registered with the Federal Communications Commission (FCC) by Verizon Wireless and AT&T Mobility, LLC, and antenna towers registered with the FCC by Spectrasite Communications, Inc. and American Towers, Inc. Registration with the FCC requires compliance with FCC maximum exposure limits for EMF protective of human safety.

3A.8.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Hazardous Materials Handling

At the Federal level, the principal agency regulating the generation, transport, and disposal of hazardous substances is EPA, under the authority of the Resource Conservation and Recovery Act (RCRA). RCRA established an all-encompassing Federal regulatory program for hazardous substances that is administered by

EPA. Under RCRA, EPA regulates the generation, transportation, treatment, storage, and disposal of hazardous substances. RCRA was amended in 1984 by the Hazardous and Solid Waste Amendments of 1984, which specifically prohibits the use of certain techniques for the disposal of various hazardous substances. The Federal Emergency Planning and Community Right to Know Act of 1986 imposes hazardous-materials planning requirements to help protect local communities in the event of accidental release of hazardous substances. EPA has delegated many of the RCRA requirements to DTSC. Use and safety considerations related to blasting activities are regulated by OHSA under the Construction Safety and Health Outreach Program. Storage or explosives and blasting agents is regulated by the Bureau of Alcohol, Tobacco, and Firearms (27 CFR Part 55, *Commerce in Explosives*).

Worker Safety Requirements

OSHA is responsible at the Federal level for ensuring worker safety. OSHA sets Federal standards for implementation of workplace training, exposure limits, and safety procedures for the handling of hazardous substances (as well as other hazards). OSHA also establishes criteria by which each state can implement its own health and safety program.

Comprehensive Environmental Response, Compensation, and Liability Act

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) created a trust fund to provide broad Federal authority for releases or threatened release of hazardous substance that could endanger public health or the environment.

Superfund Amendments and Reauthorization Act

The CERCLA Act of 1980 created the Superfund hazardous substance cleanup program (CERCLA, Public Law [PL] 96-510, enacted December 11, 1980). It was enlarged and reauthorized by the Superfund Amendments and Reauthorization Act of 1986 (SARA, PL 99-499). EPA compiles a list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories, known as the National Priorities List. These locations are commonly referred to as "Superfund sites."

National Oil and Hazardous Substances Pollution Contingency Plan

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) is the Federal plan for responding to oil spills and hazardous substances releases. The NCP establishes the National Response Team and its roles in the National Response System, which include planning and coordinating response to major discharges of oil or hazardous waste, providing guidance to Regional Response Teams, coordinating a national program of preparedness planning and response, and facilitating research to improve response activities.

Clean Air Act

The Federal Clean Air Act (CAA) was enacted in 1970. The most recent major amendments made by Congress were in 1990. The CAA required EPA to establish primary and secondary national ambient air quality standards. The CAA also required each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). Section 112 of the CAA defines hazardous air pollutants and sets threshold limits. As discussed above in Section 3A.8.1, "Affected Environment," asbestos-containing substances are regulated by the EPA under the CAA. Additional information about CAA is contained in Section 3A.4, "Air Quality - Land."

Electromagnetic Field Exposure Limits

The FCC adopted the National Council of Radiation Protection's recommendations for human exposure to radio-frequency EMFs in 1996. These regulations provide a maximum permissible exposure level to the general public.

The FCC also provides guidelines for evaluating compliance with FFC exposure limits, methods for controlling exposure, and information on EMF measurement techniques.

Regulation of Polychlorinated Biphenyls

The Toxic Substances Control Act of 1976 (Title 15 of the United States Code [USC], Section 2605) banned the manufacture, processing, distribution, and use of PCBs in totally enclosed systems. The EPA Region 9 PCB Program regulates remediation of PCBs in several states, including California. Title 40 of CFR, Section 761.30(a)(1)(vi)(A) states that all owners of electrical transformers containing PCBs must register their transformers with EPA. Specified electrical equipment manufactured between July 1, 1978 and July 1, 1998 that does not contain PCBs must be marked by the manufacturer with the statement "No PCBs" (Section 761.40[g]). Transformers and other items manufactured before July 1, 1978 and containing PCBs, must be marked as such.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

Hazardous Materials Handling

The California Hazardous Materials Release Response Plans and Inventory Law of 1985 (Business Plan Act) requires preparation of hazardous materials business plans and disclosure of hazardous-materials inventories. A business plan includes an inventory of hazardous materials handled, facility floor plans showing where hazardous materials are stored, an emergency response plan, and provisions for employee training in safety and emergency response procedures (California Health and Safety Code, Division 20, Chapter 6.95, Article 1). Statewide, DTSC has primary regulatory responsibility for management of hazardous materials, with delegation of authority to local jurisdictions that enter into agreements with the State. Local agencies, including the Sacramento County Environmental Health Department, administer these laws and regulations.

The California Education Code contains various provisions governing the siting of new public schools (e.g., California Education Code Sections 17211, 17212, and 17212.5). In addition, to help focus and manage the site selection process, CDE's School Facilities and Planning Division has developed screening and ranking procedures based on criteria commonly affecting school selection (California Education Code Section 17251[b], 5 CCR Section 14001[c]). The foremost consideration in the selection of school sites is safety. Certain health and safety requirements are governed by state statute and CDE regulations. In selecting a school site, a school district should consider the factors including proximity to airports, proximity to high-voltage power transmission lines, presence of toxic and hazardous substances, hazardous air emissions, and facilities within one-quarter mile, and proximity to railroads.

CDE requires that any school district that plans to purchase property using state funds must obtain a Phase I Environmental Site Assessment evaluating the suitability of the soil on that site for use as a school. The Phase I Environmental Site Assessment must be submitted to DTSC for review and approval before CDE will approve purchase of the site. If toxic or hazardous substances, including pesticides, naturally occurring asbestos, or other regulated hazardous materials, are found to be present, DTSC will require the school district to perform a Phase II Preliminary Endangerment Assessment to determine the level of risk and identify procedures for limiting the risk and/or cleaning up the contamination. In instances of substantial contamination, a Phase III remedial action may be required before the property is deemed safe for use as a school site.

Sections 12101 through 12103 of the California Health and Safety Code require that permits be obtained by those manufacturing, transporting, possessing, or using explosives, and endorsed by the jurisdiction(s) in which the transportation or use would occur.

Worker Safety Requirements

California OSHA (Cal-OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations within California. Cal-OSHA regulations pertaining to the use of hazardous materials in the workplace

(Title 8 of the CCR) include requirements for safety training, availability of safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and preparation of emergency action and fire prevention plans. Cal-OSHA enforces hazard communication program regulations that contain training and information requirements, including procedures for identifying and labeling hazardous substances, communicating hazard information related to hazardous substances and their handling, and preparation of health and safety plans to protect workers and employees at hazardous-waste sites. The hazard communication program requires that employers make Material Safety Data Sheets available to employees and document employee information and training programs.

Emergency Response to Hazardous Materials Incidents

California has developed an emergency response plan to coordinate emergency services provided by Federal, state, and local governments and private agencies. Response to hazardous-material incidents is one part of this plan. The plan is managed by the Governor's Office of Emergency Services (OES), which coordinates the responses of other agencies, including Cal-EPA, California Highway Patrol (CHP), California Department of Fish and Game, Central Valley RWQCB, and the City of Folsom Fire Department.

Hazardous Materials Transport

The U.S. Department of Transportation (USDOT) regulates transportation of hazardous materials between states. State agencies with primary responsibility for enforcing Federal and state regulations and responding to hazardous materials transportation emergencies are CHP and the California Department of Transportation (Caltrans). Together, these agencies determine container types used and license hazardous-waste haulers for transportation of hazardous waste on public roads, including explosives that may be used for blasting.

The USDOT Federal Railroad Administration (FRA) enforces the Hazardous Materials Regulations, which are promulgated by the Pipeline and Hazardous Materials Safety Administration for rail transportation. These regulations include requirements that railroads and other transporters of hazardous materials, as well as shippers, have and adhere to security plans and also train their employees involved in offering, accepting, or transporting hazmat on both safety and security matters.

Government Code Section 65962.5 (Cortese List)

The provisions of Government Code Section 65962.5 are commonly referred to as the "Cortese List" (after the Legislator who authored the legislation that enacted it). The Cortese List is a planning document used by the State and local agencies to comply with CEQA requirements in providing information about the location of hazardous materials release sites. Government Code Section 65962.5 requires Cal-EPA to develop an updated Cortese List annually, at minimum. DTSC is responsible for a portion of the information contained in the Cortese List. Other California state and local government agencies are required to provide additional hazardous material release information for the Cortese List.

Asbestos Abatement

The California Air Resources Board (ARB) Asbestos Program oversees implementation of and compliance with the National Emission Standard for Hazardous Air Pollutants (NESHAP) for asbestos, and investigates all related complaints, as specified by the California Health and Safety Code Section 39658(b)(1). The Sacramento Metropolitan Air Quality Management District enforces Rule 902 which regulates asbestos abatement in commercial structures, and enforces NESHAP for asbestos.

Mosquito Abatement

The Mosquito Abatement Act, passed in 1915, allowed local governments the authority to obtain revenues and form special districts to protect the public from mosquito-related hazards (i.e., West Nile Virus) (see California Health and Safety Code Sections 2000-2805, 2877-2878, 106925, 116110-116112, and 116175-116183).

The SPA is located within the Sacramento-Yolo Mosquito and Vector Control District. The District employs technicians certified by the Vector-Borne Disease Section of the California Department of Health Services (DHS) in pesticide usage, and mosquito and vector identification. The District solves mosquito problems using Integrated Pest Management techniques, which include surveillance and monitoring of mosquito breeding sources, reduction of mosquito breeding sites, community outreach and public education, and the use of chemical and biological methods to control both mosquito larvae and adult mosquitoes. The District's mosquito control program is contained in its *Mosquito and Mosquito-Borne Disease Management Plan* (Sacramento-Yolo Mosquito and Vector Control District 2005).

California Public Resources Code Section 21151.4

School-aged children are considered to be particularly sensitive to adverse effects resulting from exposure to hazardous materials, substances, or waste. For this reason, California PRC Section 21151.4 requires that lead agencies evaluate projects proposed within a quarter-mile of a school to determine whether release of hazardous air emissions or hazardous substances, resulting from implementation of any of the action alternatives, would pose a human health or safety hazard.

Electromagnetic Field Exposure Limits

As described above in Section 3A.8.1, "Affected Environment," the State of California has not established standards for EMF exposure related to high-voltage power transmission. However, CDE, in consultation with DHS has established siting policies for school property lines near the edge of easements of high-voltage power transmission lines. These separation distances, which assume that the easements themselves provide an additional 50 feet of separation from the lines, are intended to be protective with respect to EMF exposure:

- 100 feet from the edge of an easement for a 50-133 kV line (150 feet from the line itself),
- 150 feet from the edge of an easement for a 220-230 kV line (200 feet from the line itself), and
- 350 feet from the edge of an easement for a 500-550 kV line (400 feet from the line itself).

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

Sacramento County General Plan

The following goals and policies of the Sacramento County General Plan (Sacramento County 2007) are applicable only to the No Project Alternative. There are no goals or policies that would apply to the Proposed Project or the other four action alternatives.

Emergency Response Goal: An Emergency Preparedness System that can effectively respond in the event of a natural or manmade disaster.

Public Health and Safety Objective: Protect the residents of Sacramento County from the effects of a hazardous material incident via the implementation of various public health and safety programs.

- **Policy HM-4:** The handling, storage, and transport of hazardous materials shall be conducted in a manner so as not to compromise public health and safety standards.

- **Policy HM-8:** Continue the effort to prevent ground water and soil contamination.

- **Policy HM–9:** Continue the effort to prevent surface water contamination.

- **Policy HM-10:** Reduce the occurrences of hazardous material accidents and the subsequent need for incident response by developing and implementing effective prevention strategies.

- **Policy HM-11:** Protect residents and sensitive facilities from incidents which may occur during the transport of hazardous materials in the County.

Enforcement Objective: Enforce all Federal, state, and local regulations and if necessary prosecute those cases involving the mismanagement of hazardous materials.

Sacramento County Multi-Hazard Mitigation Plan

The Sacramento County Multi-Hazard Mitigation Plan (MHMP) is designed to meet the requirements of the Disaster Mitigation Act of 2000, which allows for eligibility for certain Hazard Mitigation (i.e., disaster loss reduction) programs for the Federal Emergency Management Agency (FEMA). Formulation of the MHMP was based on: hazard identification and risk assessment of potential natural hazards that could impact Sacramento County, a review of the County's capability to reduce hazards impacts, and recommendations to further reduce vulnerability to potential disasters. On March 21, 2005, FEMA approved the current MHMP, and on May 24, 2005 it was adopted by Sacramento County.

El Dorado County General Plan

The following goals and policies of the El Dorado County General Plan (2004) are applicable only to the two roadway connections from the Folsom Heights property off-site into El Dorado Hills under the Proposed Project Alternative. There are no El Dorado County goals and policies that are applicable to the No Project Alternative or the other four action alternatives.

Health, Safety and Noise Element

- **Policy 6.1.1.1**: The El Dorado County Operational Area Multi-Hazard Emergency Operations Functional Plan shall serve as the implementation program for the coordination of hazard planning and disaster response efforts within the County. The County will ensure that the El Dorado County Operational Area Multi-Hazard Emergency Operations Functional Plan is updated on a regular basis to keep pace with the growing

- **Policy 6.2.1.1:** Implement Fire Safe ordinance to attain and maintain defensible space through conditioning of tentative maps and in new development at the final amp and/or building permit stage

- **Policy 6.2.3.2:** As a requirement of new development, the applicant must demonstrate that adequate access exists, or can be provided to ensure that emergency vehicles can access the site and private vehicle can evacuate the area.

- **Policy 6.2.3.4:** All new development and public works projects shall be consistent with applicable State Wildland Fire Standards and other relevant State and Federal fire requirements.

- **Policy 6.6.1.1:** The Hazardous Waste Management Plan shall serve as the implementation program for management of hazardous waste in order to protect the health, safety, property of residents and visitors, and to minimize environmental degradation while maintaining economic viability.

- **Policy 6.6.1.2:** Prior to the approval of any subdivision of land or issuing of a permit involving ground disturbance, a site investigation, performed by a Registered Environmental Assessor or other person experienced in identifying potential hazardous wastes, shall be submitted to the County for any subdivision or parcel that is located on a known or suspected contaminated site included in a list on file with the

Environmental Management Department as provided by the State of California and Federal agencies. If contamination is found to exist by the site investigations, it shall be corrected and remediated in compliance with applicable laws, regulations, and standards prior to the issuance of a new land use entitlement or building permit.

El Dorado County Blasting Ordinance

Chapter 8.56 of the El Dorado County Code regulates blasting activities within El Dorado County. Blasting operations within the County require permits issued by the El Dorado County Sheriff's Department, and notification to that department prior to detonations.

City of Folsom General Plan

The following goals and policies of the City of Folsom General Plan (1993) are applicable to the Proposed Project and the other four action alternatives under consideration. There are no City of Folsom goals and policies that are applicable to the No Project Alternative, since under the No Project alternative the SPA would remain under the jurisdiction of Sacramento County.

Safety Element

- **Policy 29.5:** The City shall prepare, publish, and coordinate an emergency response plan which addresses medical care, escape routes, mutual aid agreements, temporary housing and communications.

Hazardous Materials Element

- **Policy 41.7:** The City shall support a household hazardous waste disposal program.

Sacramento Local Agency Formation Commission Regulations

Sacramento Local Agency Formation Commission Resolution 1196:

- 10: Any application to annex Aerojet General Corporation property, or a portion of such property, within the Sphere of Influence Amendment area, must include information sufficient to demonstrate the on-site surface contamination has been remediated to standards determined to be acceptable by Federal and state regulatory agencies and that either the groundwater contamination has been remediated or that measures to remediate the contamination are in place and working satisfactorily. In addition, the City of Folsom shall provide evidence of any covenants and restrictions limiting the surface or subsurface use of the property.

3A.8.3 Environmental Consequences and Mitigation Measures

Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. These thresholds also encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. The proposed project or alternatives under consideration were determined to result in a significant impact related to hazards and hazardous materials if they would do any of the following:

- create a significant hazard to the public or the environment through routine transport, use or disposal of hazardous materials;

- create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials to the environment;

- emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment;
- for a project located within an airport land use plan or within two miles of a public airport, result in a safety hazard for people residing or working in the project area;
- for a project located in the vicinity of a private air strip, result in a safety hazard for people residing or working in the project area;
- impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan;
- expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or residences are intermixed with wildlands;
- create a significant hazard to the public through use of explosive materials in grading or earth-moving activities;
- create public health hazards from increased exposure to mosquitoes by providing substantial new habitat for mosquitoes or other vectors; or
- expose project residents to excessive electrical or magnetic fields.

ANALYSIS METHODOLOGY

This analysis is based primarily on review of the Phase 1 Environmental Site Assessment conducted by ERM (2008), Wallace Kuhl & Associates (2004, 2005), Versar 2006, and Youngdahl & Associates (1995); review of a Supplemental RI/FS prepared for the Island OU of the Aerojet Superfund site (Aerojet General Corporation 2007); review of a site remediation feasibility study of the Island OU of the Aerojet Superfund site (ARCADIS 2007); a site visit conducted by EDAW/AECOM (now AECOM) in 2007; a review of aerial photographs of the SPA; and a review of the State Water Resources Board Geotracker online database. Site-specific documents used in the impact analysis are included in Appendix G1 through Appendix G11 of this EIR/EIS.

ISSUES NOT DISCUSSED FURTHER IN THIS EIR/EIS

Hazards within Two Miles of an Airport: The SPA is not located within 2 miles of a public, public-use, or private airport. The nearest airport, Sacramento Mather Airport, is located approximately 7 miles southwest of the SPA. Therefore, impacts related to airport or private airfield safety are not discussed further in this EIS/EIR.

Wildland Fire Hazards: California PR Code Sections 4201-4204 and Government Code 51175-51189 require identification of fire hazard severity zones within the state of California. Fire hazard severity zones are measured qualitatively, based on: vegetation, topography, weather, crown fire potential (a fire's tendency to burn upwards into trees and tall brush), and ember production and movement within the area of question. Fire prevention areas considered to be under state jurisdiction are referred to as "state responsibility areas." In state responsibility areas, the California Department of Forestry and Fire Protection is required to delineate three hazard ranges: moderate, high, and very high "local responsibility areas," which are under the jurisdiction of local entities (e.g., cities, counties), are required to only identify very high fire hazard severity zones. The SPA is located within a state responsibility area designated as a moderate fire hazard severity zone. It is not near an area of high or extremely high fire hazard severity. Therefore, project implementation would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or

residences are intermixed with wildlands. Therefore, this issue area is not discussed further in this EIR/EIS. Should future surveys identify a portion or portions of the SPA in a very high fire hazard severity zone, the Wildland-Urban Interface building code regulations would be imposed in accordance with State law.

Safety Hazards Related to Private Airstrips: The SPA is not in the vicinity of a private airstrip, within an airport land use plan, or within two miles of a public airport or public use airport; thus, project implementation would not result in a safety hazard for people residing or working in the project area. Therefore, this issue is not discussed further in this EIR/EIS.

IMPACT ANALYSIS

Impacts that would occur under each alternative development scenario are identified as follows: NP (No Action/No Project), NCP (No USACE Permit), PP (Proposed Project/Action), RIM (Resource Impact Minimization), CD (Centralized Development), and RHD (Reduced Hillside Development). The impacts for each alternative are compared relative to the PP at the end of each impact conclusion (i.e., similar, greater, lesser).

IMPACT 3A.8-1 Accidental Spill from Routine Transport, Use, or Disposal of Hazardous Materials. *Accidental spills of hazardous materials in the SPA could result during routine transport, use, or disposal activities.*

On-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80. Construction of these rural residences, and the related transport, use, and disposal of hazardous materials, would be required to conform with existing regulations. Transport of hazardous materials is regulated by the CHP and Caltrans, and use of hazardous materials is regulated by DTSC (Title 22 of the CCR). No off-site water facilities would be constructed. **Direct** and **indirect** impacts related to transport, use, and disposal of hazardous substances would be **less than significant** because the regulations have been designed to include steps that substantially reduce the risk of accidental hazardous materials release. ***[Lesser]***

On-Site and Off-Site Elements

NCP, PP, RIM, CD, RHD

Increased residential development would result in increased use, storage, and disposal of household hazardous materials within the SPA. Increased commercial and industrial development may result in increased use, storage, and/or disposal of hazardous materials during routine operations. Of particular concern are facilities with USTs or other methods of storage that could accidentally leak into the soil, water, or air. Such facilities include gas stations, automotive repair shops, and dry cleaners. Groundwater could become contaminated from these impairments. In addition, construction of the Proposed Project Alternative would involve the storage, use, and transport of hazardous materials (e.g., asphalt, fuel, lubricants, paint) during construction activities.

The amount of hazardous materials transported through the SPA on major arterials and regional highways is likely to increase as a result of development of the SPA. The project applicant(s), builders, contractors, business owners, and others would be required to use, store, and transport hazardous materials in compliance with local, state, and Federal regulations during project construction and operation. Transportation of hazardous materials on area roadways is regulated by CHP and Caltrans, and use of these materials is regulated by DTSC, as outlined in Title 22 of the CCR. Facilities that would use hazardous materials on-site after the project is constructed would be required to obtain permits and comply with appropriate regulatory agency standards designed to avoid hazardous waste releases. Because the project is required by law to implement and comply with existing hazardous material

regulations, **direct** and **indirect** impacts related to the creation of significant hazards to the public through routine, transport, use, disposal, and risk of upset are considered **less-than-significant**. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.8-2 Potential Human Health Hazards from Possible Exposure of Existing On-site Hazardous Materials. *Construction workers and future residents could be exposed to hazardous materials known to exist within the SPA.*

On-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80. As discussed above in Section 3A.8.1, "Affected Environment," potential sources of hazards and hazardous materials include structures that may contain ACM and lead paint, PCBs, and chemicals from mining activities. Hazards associated within Area 40 are discussed separately in Impact 3.5-3 below.

Because no existing structures would be demolished under the No Project Alternative, alteration of existing electric distribution lines would not be expected, and no off-site water facilities would be constructed, the **direct** impact related to ACM, lead paint, and PCBs would be **less than significant**. **No indirect** impacts would occur. However, at least one mine shaft exists on site, and others are suspected to exist. It is unknown whether mines located within the SPA have been properly abandoned in accordance with Federal, state and local regulations. Because future residents in the SPA under the No Project Alternative could be exposed to hazards related to open mine shafts or chemicals such as mercury related to past mining activities, this **direct** impact would be **potentially significant. No indirect** impacts would occur. ***[Greater]***

On-Site and Off-Site Elements

NCP, PP, RIM, CD, RHD

As discussed above in Section 3A.8.1, "Affected Environment," potential sources of hazards and hazardous materials include structures that may contain ACM and lead paint, PCBs, abandoned mine shafts, and chemicals from mining activities. Hazards associated with development of Area 40 and the Aerojet Superfund site (including the proposed off-site detention basin) are discussed separately in Impact 3.5-3 below.

The Russell Ranch South Phase I Environmental Site Assessment detailed concerns related to radio/utility towers and associated buildings that may contain asbestos (Youngdahl & Associates 1995). Demolition activities can cause asbestos fibers to become airborne and potentially inhaled, which can lead to a variety of health problems. However, demolition and removal of these structures is not defined as part of the Proposed Project or action alternatives. Because there is no project-related mechanism for exposure to potential sources of asbestos within the structures, there would be no impact associated with project implementation.

Because the existing on-site residence could contain ACM and lead paint, demolition activities could expose construction workers to asbestos fibers and lead particles. In addition, electrical transformers are likely to be located within the SPA. If not properly dismantled, transported, and disposed, PCBs could be released into the environment during potential removal of these transformers.

Completed Phase I Environmental Site Assessments within the SPA cover the majority of the total area (Exhibit 3A.8-3) and do not include the full extent of an abandoned railroad track that runs parallel to Old Placerville

Road. According to Geotracker and the Federal Railroad Administration, no accidental releases of petroleum products or other hazardous materials associated with the railroad track have been reported (SWRCB 2008).

As discussed above in Section 3A.8.1.2, "Phase I Environmental Site Assessments," dredger mining activities have historically occurred in the SPA. Mercury and other metals are often associated with mining activities, and may exist in areas that would require earthmoving activities, which could expose construction workers to hazardous materials (Ramcon 2003a). In addition, at least one mine shaft exists on site, and others may be present. It is unknown whether mines located within the SPA have been properly abandoned in accordance with Federal, state and local regulations.

Four small areas of the SPA were not assessed through the Phase I Environmental Site Assessment process, and information about former land uses or potential hazardous materials use or disposal is not available for these areas (see Exhibit 3A.8-3). In the absence of this information, it is possible that former land uses may have resulted in a release of hazardous materials onto the SPA. Therefore, for the reasons stated above, this **direct** impact is considered to be **potentially significant**. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure 3A.8-2: Complete Investigations Related to the Extent to Which Soil and/or Groundwater May Have Been Contaminated in Areas Not Covered by the Phase I and II Environmental Site Assessments and Implement Required Measures.

The project applicant(s) of all project phases shall conduct Phase I Environmental Site Assessments (where an Phase I has not been conducted), and if necessary, Phase II Environmental Site Assessments, and/or other appropriate testing for all areas of the SPA and include, as necessary, analysis of soil and/or groundwater samples for the potential contamination sites that have not yet been covered by previous investigations (as shown in Exhibit 3A.8-1) before construction activities begin in those areas. Recommendations in the Phase I and II Environmental Site Assessments to address any contamination that is found shall be implemented before initiating ground-disturbing activities in these areas.

The project applicant(s) shall implement the following measures before ground-disturbing activities to reduce health hazards associated with potential exposure to hazardous substances:

- Prepare a plan that identifies any necessary remediation activities appropriate for proposed on- and off-site uses, including excavation and removal of on-site contaminated soils, redistribution of clean fill material in the SPA, and closure of any abandoned mine shafts. The plan shall include measures that ensure the safe transport, use, and disposal of contaminated soil and building debris removed from the site. In the event that contaminated groundwater is encountered during site excavation activities, the contractor shall report the contamination to the appropriate regulatory agencies, dewater the excavated area, and treat the contaminated groundwater to remove contaminants before discharge into the sanitary sewer system. The project applicant(s) shall be required to comply with the plan and applicable Federal, state, and local laws. The plan shall outline measures for specific handling and reporting procedures for hazardous materials and disposal of hazardous materials removed from the site at an appropriate off-site disposal facility.

- Notify the appropriate Federal, state, and local agencies if evidence of previously undiscovered soil or groundwater contamination (e.g., stained soil, odorous groundwater) is encountered during construction activities. Any contaminated areas shall be remediated in accordance with recommendations made by the Sacramento County Environmental Management Department, Central Valley RWQCB, DTSC, and/or other appropriate Federal, state, or local regulatory agencies.

- Obtain an assessment conducted by PG&E and SMUD pertaining to the contents of any existing pole-mounted transformers located in the SPA. The assessment shall determine whether existing on-site electrical transformers contain PCBs and whether there are any records of spills from such equipment. If equipment containing PCB is identified, the maintenance and/or disposal of the transformer shall be

subject to the regulations of the Toxic Substances Control Act under the authority of the Sacramento County Environmental Health Department.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., Sacramento County).

Implementation: Project applicant(s) of all project phases.

Timing: Before and during earthmoving activities

Enforcement:

1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For the off-site detention basin west of Prairie City Road: Sacramento County Environmental Management Department.
3. Other regulatory agencies, such as California Department of Toxic Substances Control, or Central Valley Regional Water Quality Control Board, as appropriate.

Mitigation Measure: Implement Mitigation Measure 3A.9-1.

Implementation of Mitigation Measure 3A.8-2 would reduce significant impacts from potential human health hazards from possible exposure to hazardous materials under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives to a **less-than-significant** level because the entire SPA would be evaluated through the Phase I and/or Phase II Environmental Site Assessment processes, a site plan identifying remediation activities and setting forth procedures to appropriately handle hazardous materials (if any are encountered) would be prepared, and hazardous substances that are encountered would be removed and properly disposed of by a licensed contractor in accordance with Federal, state, and local regulations. Implementation of Mitigation Measure 3A.9-1 would require use of erosion- and sediment-control best management practices, reducing the potential for runoff and release of soils, including legacy sources of mercury from project-related construction sites. However, the off-site detention basin in Sacramento County falls under the jurisdiction of Sacramento County; therefore, neither the City nor the project applicant(s) would have control over the timing or implementation.

IMPACT 3A.8-3 Potential Development Constraints Due to the Listing on the Cortese List. *The SPA contains Area 40, part of the Aerojet Superfund site, which has the potential to create a hazard to public health or the environment. Ongoing remediation activities could delay or limit project development on or near the site of those remediation activities.*

On-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80. A portion of the Aerojet Superfund site (Area 40) is located in the SPA, and is undergoing investigation and remediation under the direction of EPA and DTSC. An approximately 54-acre portion of the SPA is part of a larger carve-out area that has been removed from the Superfund site. This carve-out area is no longer a Cortese-listed site. Area 40 and the carve-out area are illustrated on Exhibits 3A.8-1 and 3A.8-2.

Restrictions imposed by EPA, DTSC, and other regulatory agencies related to the Superfund listing of Area 40 require that remedial actions be completed prior to release of any portion of Area 40 for development. Because of these restrictions, development of land uses other than open space or recreational uses would not occur within the Cortese-listed site; furthermore, no off-site water facilities would be constructed. Thus, **no direct** or **indirect** impacts would occur. ***[Lesser]***

On-Site and Off-Site Elements

NCP, PP, RIM, CD, RHD

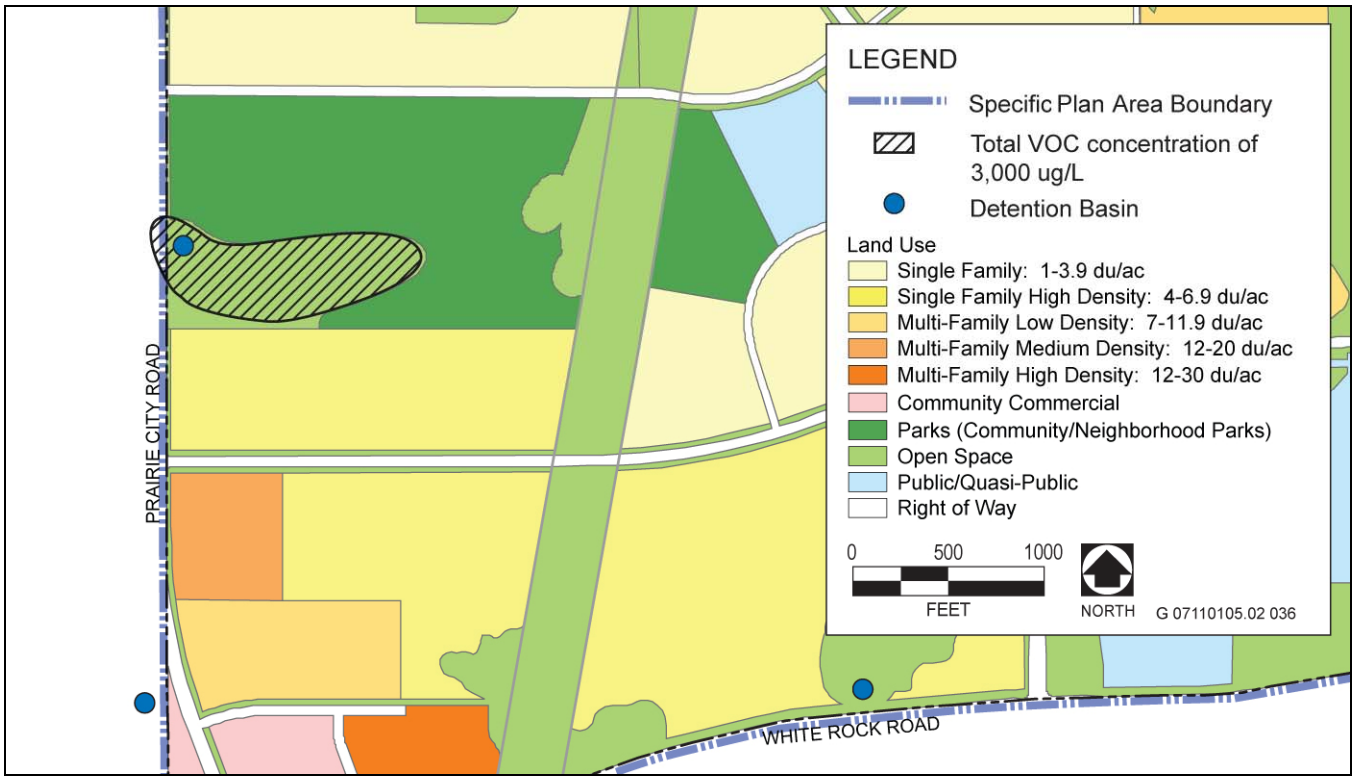
A portion of the Aerojet Superfund site (Area 40) is located in the SPA, and is undergoing investigation and remediation under the direction of EPA and DTSC. An approximately 54-acre portion of the SPA is part of a larger carve-out area that has been removed from the Superfund site. This carve-out area is no longer a Cortese-listed site. Area 40 and the carve-out area are illustrated on Exhibit 3A.8-1 and 3A.8-2.

Soil and groundwater investigations have been conducted at Area 40 since 1985. These investigations have identified the presence of soil and groundwater contamination in the SPA, including VOCs, metals, and perchlorate. Area 40 includes two areas of soil where concentrations of VOCs, metals, perchlorate, dioxins, and furans exceed human health or ecological screening levels (identified in Exhibit 3A.8-2). Compliance with Sacramento LAFCo Resolution 1196 would require demonstration that the on-site surface contamination has been remediated to standards determined to be acceptable by Federal and state regulatory agencies before Area 40 could be annexed into the City of Folsom.

Groundwater contamination at Area 40 includes VOCs, metals, and perchlorate at concentrations in excess of human health screening levels. Exhibit 3A.8-2 illustrates the location of an area where total VOC concentrations in the surface groundwater layer are more than 3,000 micrograms per liter (ug/L). In this area, off-gassing of VOCs from groundwater could result in soil vapor concentrations above health-based risk standards in indoor air. As illustrated in Exhibits 3A.8-4 through 3A.8-8, this area is proposed for park and open space use in the Proposed Project and the action alternatives.

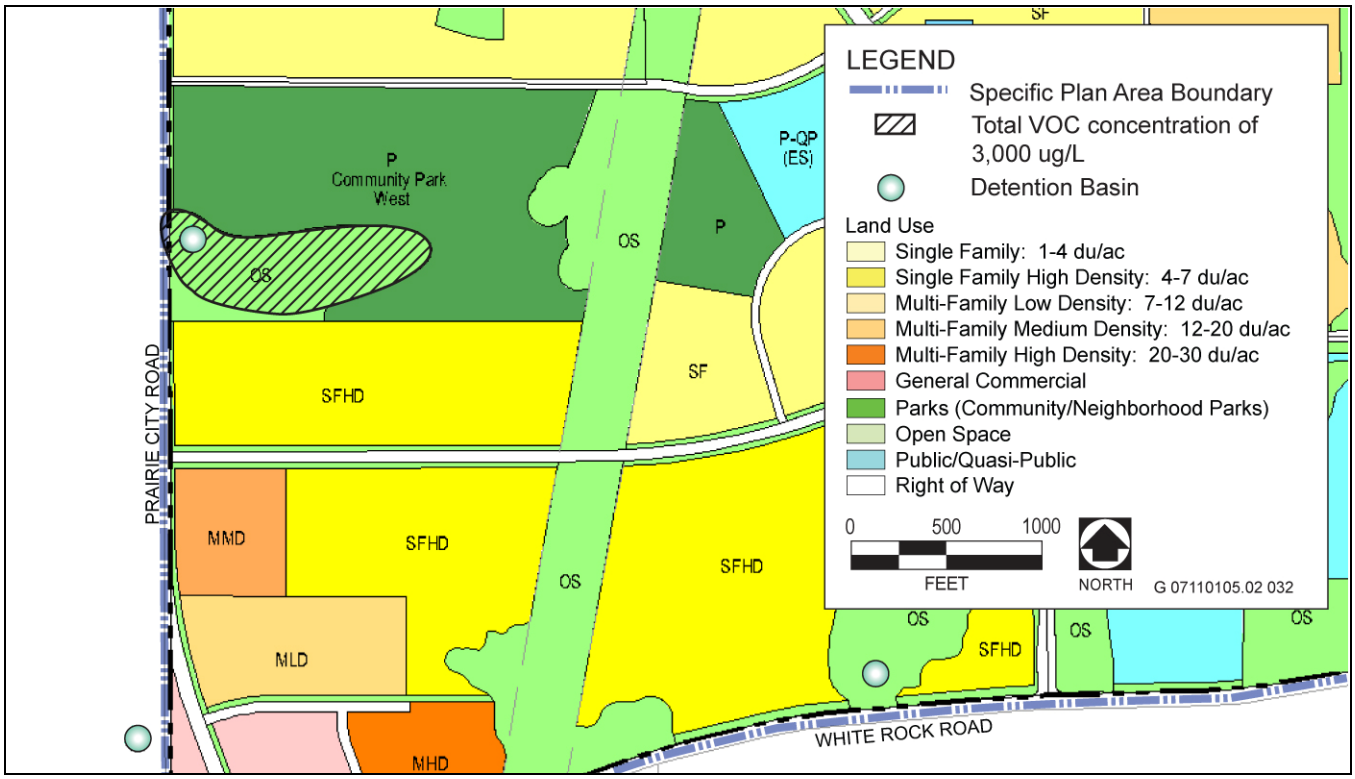
A memorandum from Arcadis to the City of Folsom, in 2007 (ARCADIS 2007), discussed probable human health effects associated with land uses within the northern portion of Area 40 in response to concerns related to potential ambient air exposures associated with park and recreation use. No buildings are proposed for this area, resulting in no potential indoor air exposure. The memorandum indicated that the concentration of ambient VOCs resulting from off-gassing of contaminated groundwater would not be high enough to create an unacceptable risk to children or adults using the area for outdoor recreational activities (ARCADIS 2007). Arcadis concluded that park or open space land uses would be acceptable on this portion of Area 40. Arcadis' conclusions were limited to risks posed by off-gassing of groundwater, and were based on an understanding that the EPA would ensure that contaminated soils are remediated appropriately in accordance with future land use designations.

The land identified for the proposed off-site detention basin is also located on the Aerojet Superfund site, in the Eastern OU. The proposed detention basin is not within an identified source area as defined in the Partial Consent Decree (Partial Consent Decree entered June 23, 1989 [and modifications thereto] in the consolidated actions Nos. CIVS-86-0063-EJG and CIVS-86-0064-EJG) and was not identified as an area of concern as identified in the Eastern Operable Unit Sampling Plan (Aerojet General Corporation 2008). The detention basin would be required to adhere to deed restrictions pertaining to recharge and infiltration.



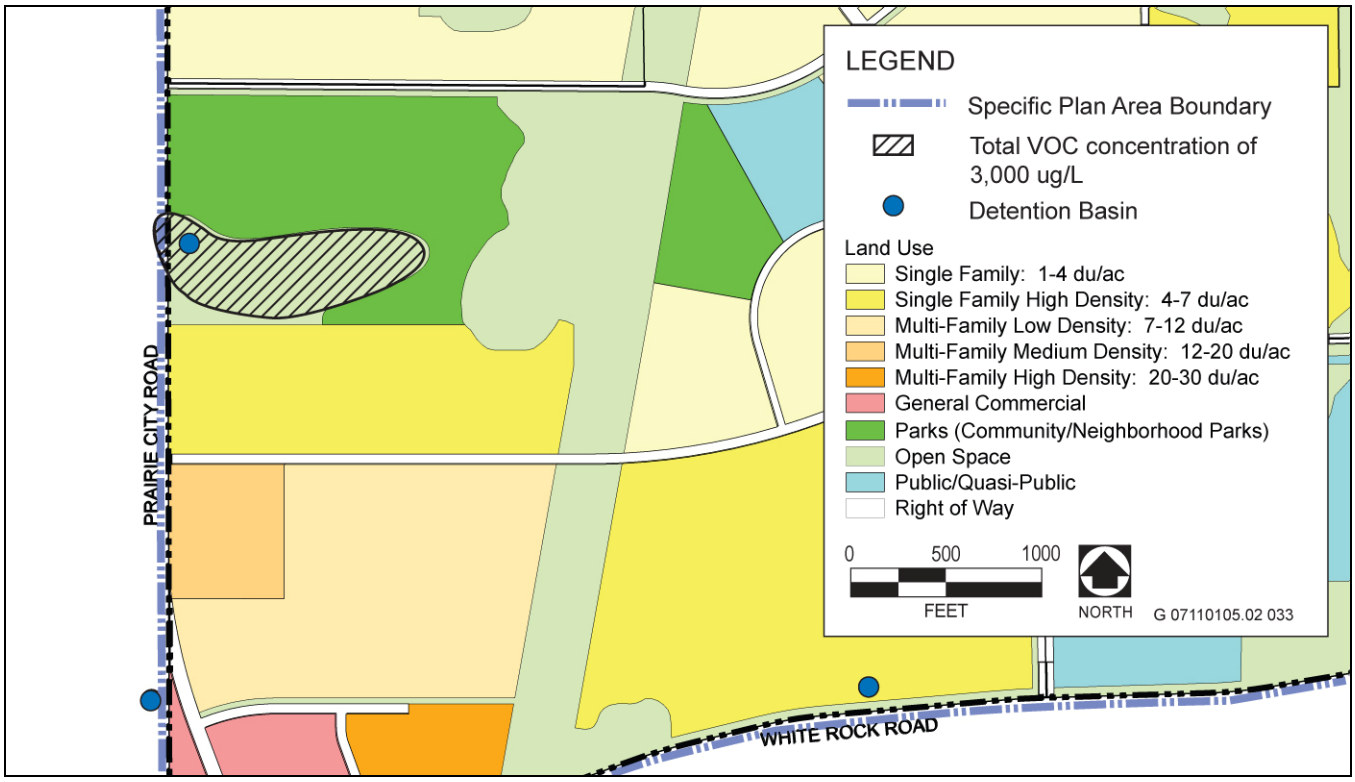
Source: Aerojet General Corporation 2007 adapted by AECOM in 2009

Area of Potential VOC Off-gassing in Proposed Project Alternative **Exhibit 3A.8-4**



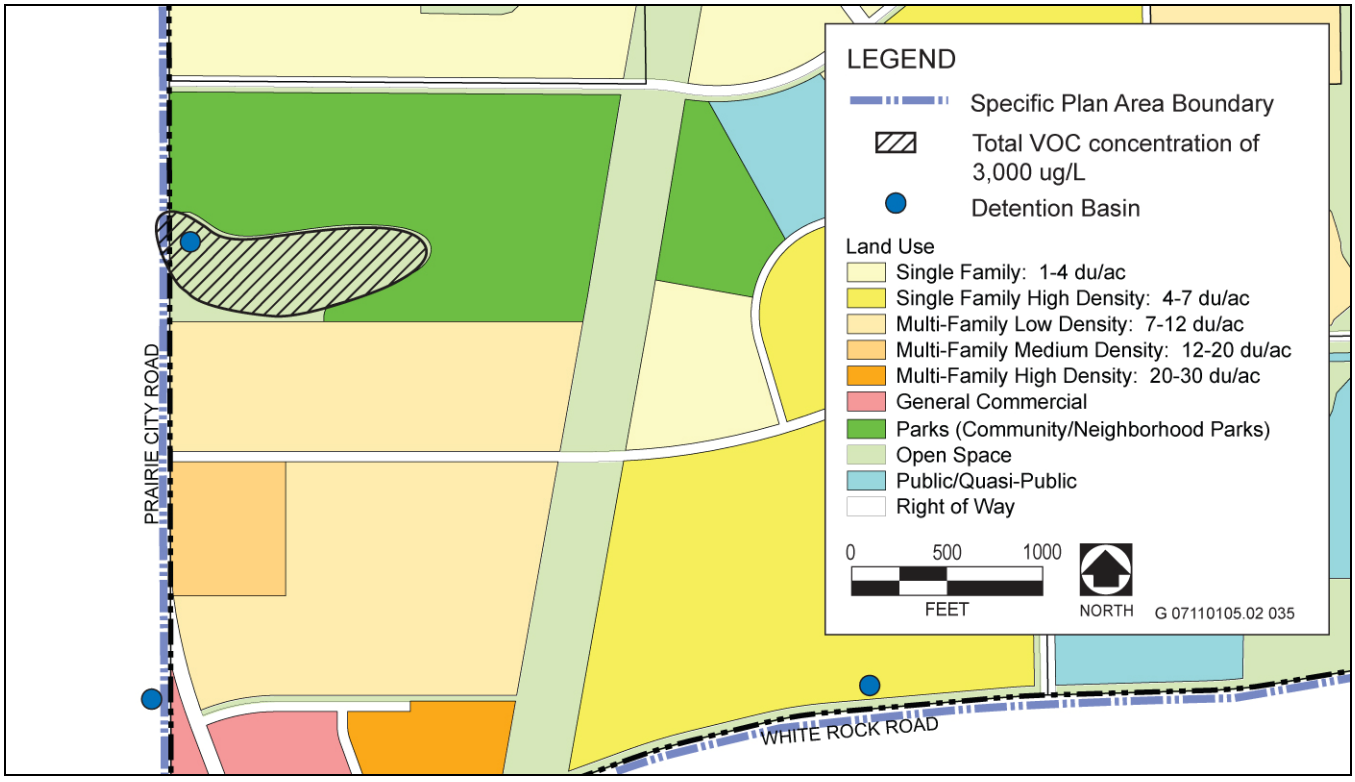
Source: Aerojet General Corporation 2007 adapted by AECOM in 2009

Area of Potential VOC Off-gassing in Resource Impact Minimization Alternative **Exhibit 3A.8-5**



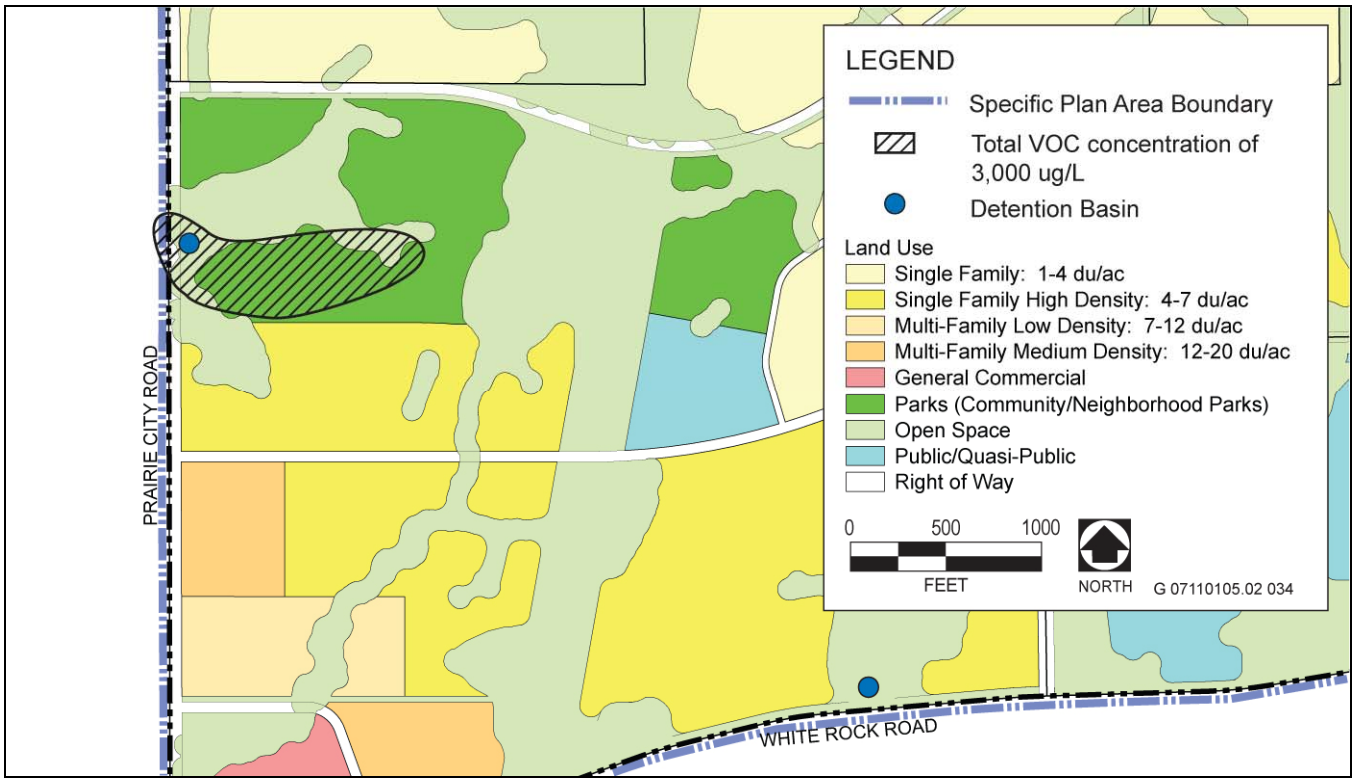
Source: Aerojet General Corporation 2007 adapted by AECOM in 2009

Area of Potential VOC Off-gassing in Centralized Development Alternative **Exhibit 3A.8-6**



Source: Aerojet General Corporation 2007 adapted by AECOM in 2009

Area of Potential VOC Off-gassing in Reduced Hillside Development Alternative **Exhibit 3A.8-7**



Source: Aerojet General Corporation 2007 adapted by AECOM in 2009

Area of Potential VOC Off-gassing in No USACE Permit Alternative **Exhibit 3A.8-8**

Although enforcement of LAFCo resolution 1196 would ensure that the proposed land use plans would not pose a risk to human health, ongoing remediation at this Federally listed site may delay or limit the availability of some development, including parks and open space at or near the contaminated sites. The level of remediation effort at these sites may limit future development to open space uses on a portion of Area 40. Ongoing regulatory review and approvals required by EPA, DTSC, and the Central Valley RWQCB would ensure that any site-specific land use limitations are identified and required when the land is made available for development. Aerojet will also retain right of access to certain properties to operate and maintain the monitoring wells or to conduct other remediation activities. This **direct** impact is considered **potentially significant**. There would be **no indirect** impacts. ***[Similar]***

Mitigation Measure 3A.8-3a: Require the Project Applicant(s) to Cooperate with Aerojet and Regulatory Agencies to Preserve, Modify, or Close Existing Groundwater Monitoring Wells.

The project applicant(s) for all project phase(s) that would occur in or adjacent to the Area 40 boundary shall submit copies of tentative maps for residential subdivisions and for nonresidential uses to Aerojet, DTSC, and the Central Valley RWQCB or any successor in interest for review and approval. Aerojet, DTSC, and the Central Valley RWQCB or any successor shall work with the project applicant(s) to establish the preservation, modification, or closure of existing groundwater monitoring wells. If necessary, Aerojet, or any successor may purchase lots from the project applicant(s) to maintain access to monitoring wells. Development shall not proceed within the Area 40 boundary or on lands used for groundwater monitoring and other remediation activities until DTSC and the Central Valley RWQCB have approved Aerojet's or a successor's plan for well preservation, modification, or closure.

The project applicant(s) for activities related to the off-site detention basin located outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) with Sacramento County.

Implementation: Project applicants(s) for activities that would occur in the Area 40 boundary or on areas used for groundwater monitoring and other remediation activities.

Timing: Ongoing to the satisfaction of DTSC and the Central Valley RWQCB.

Enforcement:
1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For the off-site detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.

Mitigation Measure 3A.8-3b: Coordinate Development Activities to Avoid Interference with Remediation Activities.

The project applicant(s) for all project phases that would occur in or adjacent to the Area 40 boundary shall provide notice to Aerojet or any successor in interest and DTSC, the Central Valley RWQCB, and the City of Folsom of the location, nature, and duration of construction activities least 30 days before construction activities begin in areas on or near property with current or planned remediation activities (Area 40). Remedial actions, as required by DTSC, RWQCB, and/or the EPA, may include, but are not limited to:

- deed restrictions on land and groundwater use;
- requirements for building ventilation, heating, and air conditioning design;
- monitoring;
- installation of vertical barriers;
- biological, chemical, and/or physical treatment;
- extraction, and/or
- pump and treat activities.

Before the approval of grading plans which include areas within the Area 40 boundary or the off-site detention basin, the project applicant(s) shall work with Aerojet, DTSC, and the Central Valley RWQCB or any successor to schedule the timing of construction activities to prevent potential conflicts with remediation activities.

The project applicant(s) for activities related to the off-site detention basin located outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) with Sacramento County.

Implementation: Project applicant(s) for activities within the Area 40 boundary or on lands used for monitoring or other remediation-related activities.

Timing: Before the approval of grading plans and during construction activities within the Area 40 boundary, off-site detention basin, or on lands used for monitoring or other remediation-related activities.

Enforcement:
1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.

2. For the off-site detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.

3. California Department of Toxic Substances Control, Central Valley Regional Water Quality Control Board, Aerojet General Corporation, as appropriate.

Mitigation Measure 3A.8-3c: Provide Written Notification to the City that DTSC-Required Notification Obligations and/or Easements Have Been Fulfilled to Ensure that Construction Activities Do Not Interfere with Remedial Actions.

Pursuant to its oversight over investigations of hazardous substances and determination of remedial action, DTSC establishes, as appropriate, deed restrictions (e.g., restrictions on future groundwater uses or future land uses) or easements (e.g., continued access to groundwater wells and pipelines) on property with associated notice requirements. The project applicant(s) for all such affected project activities, located within the Area 40 boundary, the off-site detention basin, or lands subject to monitoring or other remediation activities shall provide notification in writing to the City (or Sacramento County for the off-site detention basin) that said required DTSC notification obligations have been fulfilled. Evidence of the method of notification required by DTSC shall be submitted to the City before approval of tentative maps or improvement plans.

The project applicant(s) for such affected project activities shall coordinate with the City to include this provision as part of tentative map approval within the Area 40 boundary or lands subject to monitoring or other remediation activities. The project applicant(s) shall coordinate with Sacramento County for such affected project activities pertaining to the off-site detention basin.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., Sacramento County).

Implementation: Project applicant(s) for activities that would occur in the Area 40 boundary or on areas used for groundwater monitoring and other remediation activities.

Timing: Before approval of final maps and/or issuance of permits for sales trailers and model homes within the Area 40 boundary, the off-site detention basin, or lands subject to monitoring or other remediation activities.

Enforcement:

1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.

2. For the off-site detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.

Implementation of Mitigation Measures 3A.8-3a, 3A.8-3b, and 3A.8-3c would reduce significant potential development constraints due to site listing on the Cortese List under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives to a **less-than-significant** level because remediation activities, implementation of deed restrictions, and other actions required prior to implementation of the project would be required by DTSC and other agencies as part of the Superfund investigation and remediation activities. However, the off-site detention basin falls under the jurisdiction of Sacramento County; therefore, neither the City nor the project applicant(s) would have control over its timing or implementation.

IMPACT 3A.8-4 Potential Interference with an Adopted Emergency Response or Emergency Evacuation Plan. *Development of the SPA could interfere with adopted emergency plans.*

On-Site and Off-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80. The construction of these residences would not result in substantial volumes of construction that would substantially increase traffic on existing roadways. Furthermore, no off-site water facilities would be constructed. Therefore, this alternative would not conflict with any adopted emergency response or evacuation plans. **Direct** impacts would be **less than significant. No indirect** impacts would occur. ***[Similar]***

NCP, PP, RIM, CD, RHD

Implementation of the project would require permits from the City of Folsom to ensure that the project provides sufficient hydrant locations, street width, circulation, and project access for fire and emergency response units. Implementation of the project would not conflict with any adopted emergency response or evacuation plans. Furthermore, the circulation plans for the Proposed Project and the other four action alternatives would include sufficient ingress and egress routes to ensure public safety in the event to an emergency. Finally, the Proposed Project and the other four action alternatives would be subject to the Sacramento County MHMP. Therefore, direct impacts would be **less than significant. No indirect** impacts would occur. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.8-5 Potential for Blast-Related Injury to Construction Workers and the General Public. *Development in the SPA would entail the use of explosive materials as part of grading activities in the eastern portion of the SPA that could result in injury to construction workers and the general public.*

On-Site and Off-Site Elements

NP

Under the No Project Alternative, up to 44 individual dwelling units could be constructed in the SPA, although no off-site water facilities would be constructed. As part of the construction of individual dwelling units or agricultural operations at the site, blasting could occur as part of excavation and removal of rock from the eastern slopes of the SPA. Blasting entails the placement of explosive materials into a borehole, which is then ignited. The subsequent explosion generates air blasts and seismic waves that fracture the surrounding rock. Reasonably foreseeable accidents associated with blasting include accidental discharge and expulsion of materials beyond the expected distance (i.e., flyrock).

OSHA's Construction Safety and Health Outreach Program sets standards for blaster qualifications, transportation, storage, and loading, execution, and post-explosion requirements. However, accidental discharge or materials or production of flyrock remains possible. Sources of electricity, including radio towers and power lines, are located within the eastern slopes and could cause injury or fatalities to construction workers or the general public. Therefore, **direct** impacts associated with blasting activities are considered to be **potentially significant**. There would be **no indirect** impacts. ***[Similar]***

Blasting may be required for excavation and removal of rock from the eastern slopes of the SPA. Blasting entails the placement of explosive materials into a borehole, which is then ignited. The subsequent explosion generates air blasts and seismic waves that fracture the surrounding rock. Generally, explosives used for construction purposes consist of ammonium nitrate and fuel oil (Centers for Disease Control and Prevention [CDC] 2004). Reasonably foreseeable accidents associated with blasting include accidental discharge and expulsion of materials beyond the expected distance (i.e., flyrock).

Explosive materials are ignited from sources of energy. During construction-related blasting activities, materials are ignited from the controlled used of electricity. Accidental discharge of explosive materials can also occur from extraneous sources of electricity. Sources of electricity within the SPA include power lines, radio transmitters, and electrical storms. Depending on the amount of material and method of storage, the size and extent of an accidental discharge could cause extensive destruction. Injuries and fatalities could result from the initial explosion and/or secondary effects such as fires and flyrock.

Flyrock is a potential hazard from blasting that could occur under accidental and planned ignition. Flyrock is defined as mud, water, or fragments of rock that accidently travel outside of the expected blast area. Creation of flyrock can be the result of many factors, including anomalies in the geology and rock structure, poor communication, and incorrect blast hole layout and loading (CDC 2004). Blasting-induced flyrock can travel up to one-half mile at a rate of 400 miles per hour (recorded at 200 feet from the blast site) (CDC 2008). There are numerous documented cases of flyrock causing bodily harm to construction workers and the general public, sometimes leading to fatalities (CDC 2004).

Section 12101 through 12103 of the California Health and Safety Code describe permit requirements for manufacturing, possession, transportation, and use of explosives, which would apply to blasting activities in the SPA, and these permits must be issued or endorsed by the jurisdiction in which blasting would take place.

OSHA's Construction Safety and Health Outreach Program sets standards for blaster qualifications, transportation, storage, and loading, execution, and post-explosion requirements. However, accidental discharge or materials or production of flyrock remains possible. Sources of electricity, including radio towers and power lines, are located within the eastern slopes and could cause injury or fatalities to construction workers or the general public. Therefore, **direct** impacts associated with blasting activities are considered to be **potentially significant**. There would be **no indirect** impacts. ***[Similar]***

Mitigation Measure 3A.8-5: Prepare and Implement a Blasting Safety Plan in Consultation with a Qualified Blaster.

To reduce the potential for accidental injury or death related to blasting, contractors whose work in the SPA will include blasting shall prepare and implement a blasting safety plan. This plan shall be created in coordination with a qualified blaster, as defined by the Construction Safety and Health Outreach Program, Subpart U, Section 1926.901, and distributed to all appropriate members of construction teams. The plan shall apply to project applicant(s) of all project phases in which blasting would be employed. The plan shall include, but is not limited to:

- storage locations that meet ATF standards contained in 27 CFR Part 55;
- safety requirements for workers (e.g., daily safety meetings, personal protective equipment);
- an accident management plan that considers misfires (i.e. explosive fails to detonate), unexpected ignition, and flyrock; and

- measures to protect surrounding property (e.g., netting, announcement of dates of expected blasting, barricades, and audible and visual warnings).

Upon completion of a blasting safety plan, the project applicant(s) shall secure any required permits from the City of Folsom Fire Department and the El Dorado County Sheriff's Department for blasting activities in Sacramento County and El Dorado County, respectively.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado County).

Implementation: Project applicant(s) and contractor(s) of all project phases in which blasting would be employed.

Timing: At the submission of tentative map applications.

Monitoring:
1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Fire Department.
2. For the off-site roadway connections in El Dorado County: El Dorado County Sheriff's Department.

Implementation of Mitigation Measure 3A.8-5 would reduce potential impacts related to blasting activities because a blasting safety plan would be prepared and implemented that would include protection measures for construction workers and the general public, and the proper permits would be secured by the project applicant(s) of all affected project phases. Because these actions would substantially diminish the probability of accidents involving the production of flyrock and accidental ignition, this impact would be reduced to a **less-than-significant** level. However, some of the off-site elements (two roadway connections) fall under the jurisdiction of El Dorado County; therefore, neither the City nor the project applicant(s) would have control over its timing or implementation.

IMPACT 3A.8-6 Possible Exposure of People to Electric and Magnetic Fields. *Residential developments and/or schools would be located near high voltage transmission lines and radio towers, which could expose the general public to EMFs.*

On-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80. The SPA is traversed by two 230-kV, one 115 kV, and one 69-kV electrical transmission lines on steel lattice towers. The 80-acre minimum lot size under the existing designation would result in large individual parcels; a standard, 40-acre parcel would be 1,320 feet on a side. These large parcels would permit siting of individual residential units more than 200 feet from any electrical transmission line, although it is possible that individual property owners would choose not to do so. Futhermore, no off-site water facilities would be constructed. This **direct** impact would be **less than significant. No indirect** impact would occur. ***[Lesser]***

The SPA is traversed by two 230-kV, one 115 kV, and one 69-kV electrical transmission lines on steel lattice towers within a single 400-foot-wide right-of-way, with lines spread throughout the easement to approximately 50 feet from the edges of the right-of-way. Under the Proposed Project and the other four action alternatives, the transmission line easement would be developed into open space, which would be approximately 400 feet wide. Additional 69-kV transmission lines extend westward from this right-of-way towards Prairie City Road, and a 69-kV transmission line dead-ends in the SPA just east of Placerville Road. (Capitol Utility Specialists 2009.)

Common utility line setbacks generally incorporate a distance of approximately 50 feet on each side of the high-tension power lines; the open space area in the SPA would be 400 feet wide because three separate lines are present. California does not require additional housing setback requirements from electrical transmission lines that would take into account the generation of EMFs. However, ongoing research shows that once emitted from the source, an EMF dissipates rapidly in a circular pattern and weakens with distance from the emitting source. For instance, at a distance of 200 feet from a 230 kV line, the EMF drops to a level of 1.8 mG (NIEHS 2002).

A few organizations have taken active steps to limit exposure to EMFs, while other organizations have issued guidelines to reduce EMF exposure. For example, the National Association of Certified Home Inspectors cites the Office of Technology Assessment of the U.S. Congress, which recommends a policy of "prudent avoidance" with respect to EMFs. "Prudent avoidance" means to measure fields, determine the sources, and act to reduce exposure. The National Association of Certified Home Inspectors suggests that exposure to EMFs should be limited to 2.5 mG or less. CDE has taken the position that K–12 schools may not be constructed within 150 feet of an easement for a 230-kV transmission line (approximately 200 feet from the power line itself). This effectively reduces school-site exposures to 2 mG or less. Since new schools constructed on the project site would require CDE approval, no schools could be constructed within 150 feet of a 230-kV transmission line easement, and no school-site exposures in excess of 2 mG would occur.

Under the Proposed Project and action alternatives, residential developments are planned adjacent to the 400-foot-wide easement, which could place houses within 200 feet of the 230-kV transmission line and within 150 feet of a 69 kV or 115 kV transmission line.

The radio towers located in the eastern portion of the SPA are registered with the FCC, and must conform with rules and regulations involving exposure of the general public to EMFs. Tower operators must comply with Federal regulations for continued registration of these radio towers. By complying with the FCC's safety standards, the general public would not be exposed to unacceptable EMF levels from the towers.

Because the Proposed Project and the four action alternatives would not provide at least 200 feet of separation between 230-kV transmission lines (and 150 feet of separation between any 69 kV or 115 kV transmission lines) and any residential developments, the **direct** impact of exposure of the general public to EMFs would be **potentially significant**. There would be **no indirect** impacts. ***[Similar]***

Mitigation Measure 3A.8-6: Prudent Avoidance and Notification of EMF Exposure.

A policy of "prudent avoidance" to EMF exposure shall be incorporated into planning activities for residential developments near the transmission lines, which shall include consideration of up-to-date information on potential hazards of EMF, especially information from the California Public Utilities Commission.

In addition, potential purchasers of properties near the transmission lines shall be made aware of the controversy surrounding EMF exposure. The California Department of Real Estate shall be requested to insert an appropriate disclosure statement into the applicant's final Subdivision Public Report application,

which shall be provided to purchasers of properties within 100 feet from the 100-115kV power line easement, or within 150 feet from the 220-230 kV power line easement.

Implementation: Project applicant(s) of all project phases in the vicinity of high-tension transmission lines.

Timing: At the submission of tentative map applications.

Enforcement: 1. City of Folsom Community Development Department.

2. Folsom Cordova Unified School District.

Implementation of Mitigation Measure 3A.8-6 would reduce the potentially significant impact related to adverse health effects from the possible exposure to EMFs to a **less-than-significant** level because prudent avoidance of high tension power lines would result in residential housing being relocated where possible, and disclosure would be required for any residences which were less than 200 feet from the 230-kV transmission line and 150 feet from the 69-kV and 115-kV transmission lines.

Off-Site Elements

NCP, PP, RIM, CD, RHD

The off-site elements would not include construction of sensitive land uses that could be affected by EMFs. Therefore, **no direct** or **indirect** impacts would occur.

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.8-7 Potential for Public Health Hazards from Mosquitoes Associated with Project Water Features. *Project implementation would include construction of 16 on-site detention basins and 1 off-site detention basin, which could attract mosquitoes and other waterborne vectors, thereby potentially creating a public health hazard.*

On-Site Elements

NP

Under the No Project Alternative, no new detention facilities or off-site water facilities would be constructed, resulting in no increase in mosquito habitat. In addition, potential development of up to 44 rural residences under the existing AG-80 zoning would not result in a concentration of a large new human population in close proximity to mosquito habitat; thus, **no direct** or **indirect** impacts would occur. ***[Lesser]***

On-Site and Off-Site Elements

NCP, PP, RIM, CD, RHD

The Sacramento-Yolo Mosquito and Vector Control District recognizes a variety of stormwater-related structures to be common mosquito development sites. Implementation of the Proposed Project and the four action alternatives includes a variety of features that are considered to be mosquito attractants, including 16 detention basins, storm drains, and roadside ditches. Typical stormwater facilities create habitat for mosquitoes that are attracted to above-ground, clean water sources, and underground, polluted (nutrient rich) sources. Because stormwater infrastructure would be located in close proximity to proposed development, diseases, such as West Nile Virus, could be easily spread within the population through mosquito vectors (Sacramento-Yolo Mosquito and Vector Control District 2008).

To reduce the threat from mosquito-borne threats to human health, the District maintains a best management practices manual (Sacramento-Yolo Mosquito and Vector Control District 2008). This manual details preventive measures to reduce mosquito populations, production rates, or the timing of mosquito hatching. However, the project does not incorporate BMPs that would control mosquitoes. Because the potential for mosquito-borne health hazards would occur with development of the project and the project currently does not include any mosquito prevention BMPs, this **direct** impact would be **potentially significant**. **No indirect** impacts would occur ***[Similar].***

Mitigation Measure 3A.8-7: Prepare and Implement a Vector Control Plan in Consultation with the Sacramento-Yolo Mosquito and Vector Control District.

To ensure that operation and design of the stormwater system, including multiple planned detention basins, is consistent with the recommendations of the Sacramento-Yolo Mosquito and Vector Control District regarding mosquito control, the project applicant(s) of all project phases shall prepare and implement a Vector Control Plan. This plan shall be prepared in coordination with the Sacramento-Yolo Mosquito and Vector Control District and shall be submitted to the City for approval before issuance of the grading permit for the detention basins under the City's jurisdiction. For the off-site detention basin, the plan shall be submitted to Sacramento County for approval before issuance of the grading permit for the off-site detention basin. The plan shall incorporate specific measures deemed sufficient by the City to minimize public health risks from mosquitoes, and as contained within the Sacramento-Yolo Mosquito and Vector Control District BMP Manual (Sacramento-Yolo Mosquito and Vector Control District 2008). The plan shall include, but is not limited to, the following components:

- Description of the project.
- Description of detention basins and all water features and facilities that would control on-site water levels.
- Goals of the plan.
- Description of the water management elements and features that would be implemented, including:
    - BMPs that would implemented on-site;
    - public education and awareness;
    - sanitary methods used (e.g., disposal of garbage);
    - mosquito control methods used (e.g., fluctuating water levels, biological agents, pesticides, larvacides, circulating water); and
    - stormwater management (consistent with Stormwater Management Plan).
- Long-term maintenance of the detention basins and all related facilities (e.g., specific ongoing enforceable conditions or maintenance by a homeowner's association).

  To reduce the potential for mosquitoes to reproduce in the detention basins, the project applicant(s) shall coordinate with the Sacramento-Yolo Mosquito and Vector Control District to identify and implement BMPs based on their potential effectiveness for SPA conditions. Potential BMPs could include, but are not limited to, the following:

    - build shoreline perimeters as steep and uniform as practicable to discourage dense plant growth;

- perform routine maintenance to reduce emergent plant densities to facilitate the ability of mosquito predators (i.e., fish) to move throughout vegetated area;

- design distribution piping and containment basins with adequate slopes to drain fully and prevent standing water. The design slope should take into consideration buildup of sediment between maintenance periods. Compaction during grading may also be needed to avoid slumping and settling;

- coordinate cleaning of catch basins, drop inlets, or storm drains with mosquito treatment operations;

- enforce the prompt removal of silt screens installed during construction when no longer needed to protect water quality;

- if the sump, vault, or basin is sealed against mosquitoes, with the exception of the inlet and outlet, submerge the inlet and outlet completely to reduce the available surface area of water for mosquito egg–laying (female mosquitoes can fly through pipes); and

- design structures with the appropriate pumping, piping, valves, or other necessary equipment to allow for easy dewatering of the unit if necessary (Sacramento Yolo Mosquito and Vector Control District 2008).

The project applicant(s) of the project phase containing the off-site detention basin shall coordinate mitigation for the off-site with the affected oversight agency (i.e., Sacramento County).

Implementation: Project applicant(s) of all project phases containing water features.

Timing: Before issuance of grading permits for the project water features.

Enforcement:
1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.

2. For the off-site detention basin west of Prairie City Road: Sacramento-Yolo Mosquito and Vector Control District.

Implementation of Mitigation Measure 3A.8-7 would reduce significant impacts related to potential public health hazards from mosquitoes under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives to a **less-than-significant** level because a site plan, which would require identification of remediation activities, implementation of BMPs to reduce mosquito breeding habitats, and coordination with the District to ensure that mosquito attractants are avoided to the extent possible, would be developed and implemented. However, the off-site detention basin would fall under the jurisdiction of Sacramento County; therefore, neither the City nor the project applicant(s) would have control over its timing or implementation.

3A.8.4 RESIDUAL SIGNIFICANT IMPACTS

Implementation of mitigation measures contained in this section would reduce all impacts to a less-than-significant level for the Proposed Project and all action alternatives. Therefore, project implementation would not result in any residual significant impacts related to hazards and hazardous materials. However, some of the off-site elements (two roadway connections in El Dorado County and detention basin in Sacramento County) fall under the jurisdiction of El Dorado and Sacramento Counties; therefore, neither the City nor the project applicant(s) would have control over the timing or implementation of mitigation measures for these off-site

elements. Because the City does not control implementation of mitigation measures for off-site improvements constructed in areas under the jurisdiction of El Dorado and Sacramento Counties, Impacts 3A.8-2, 3A.8-3, 3A.8-5, and 3A.8-7 are considered potentially significant and unavoidable for off-site improvements that would be located in Sacramento or El Dorado County jurisdiction.

This section was prepared by RMC Water and Environment.

3B.8 HAZARDS AND HAZARDOUS MATERIALS – WATER

3B.8.1 AFFECTED ENVIRONMENT

As provided in Chapter 2, "Alternatives," the placement of new structural facilities as part of the Off-site Water Facility Alternatives would be limited to Zone 4 of the "Water" Study Area and, therefore, the description of the affected environment for hazards and hazardous materials is focused to Zone 4. No new facilities are proposed within Zones 1, 2, and 3 and, therefore, no additional description of Zones 1, 2, and 3 is necessary to support the analysis of potential impacts to hazards and hazardous materials.

A material is considered hazardous if it appears on a list of hazardous materials prepared by a Federal, state, or local agency, or if it has characteristics defined as hazardous by such an agency. Title 22 of the CCR defines a hazardous material as:

> A substance that, because of physical or chemical properties, quantity, concentration, or other characteristics, may either (1) cause an increase in mortality or an increase in serious, irreversible, or incapacitating illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of, or otherwise managed" (CCR, Title 22, Division 4.5, Chapter 10, Article 2, Section 66260.10).

Hazardous wastes are defined in the same manner. Hazardous wastes are hazardous materials that no longer have practical use, such as substances that have been discarded, discharged, spilled, contaminated, or are being stored prior to proper disposal. According to Title 22 of the CCR, hazardous materials and hazardous wastes are classified according to four properties: toxic, ignitable, corrosive, and reactive (CCR, Title 22, Chapter 11, Article 3). Toxicity, ignitability, corrosivity, and reactivity are defined in the CCR, Title 22, Sections 66261.20 through 66261.24, as summarized below:

- Toxic substances may cause short-term or long-lasting health effects, ranging from temporary effects to permanent disability, or death. For example, toxic substances can cause disorientation, acute allergic reactions, asphyxiation, skin irritation, or other adverse health effects if human exposure exceeds certain levels that depend on the substances in question. Carcinogens (substances known to cause cancer) are a special class of toxic substances (e.g., pesticides, heavy metal ions).

- Ignitable substances (e.g., gasoline and methane gas) are hazardous because of their ability to burn.

- Corrosive materials (e.g., chlorine gas, sulfur dioxide gas, and strong acids and bases) can cause severe burns or damage materials.

- Reactive materials (e.g., dynamite and pressurized gases) may cause explosions or generate toxic gases.

Toxic, ignitable, corrosive, and reactive materials are types of hazardous materials. A chemical that poses a significant hazard upon a single exposure is considered acutely hazardous if it is so designated by a regulatory agency (California Health and Safety Code, Section 25531). A hazardous waste is any hazardous material that is discarded, abandoned, or to be recycled. The criteria that render a material hazardous also make a waste hazardous (California Health and Safety Code, Section 25117).

Factors that influence the health effects of exposure to a hazardous material include the dose to which the person is exposed, the frequency of exposure, the exposure pathway, and individual susceptibility.

HAZARDS AND HAZARDOUS MATERIAL DATABASE SEARCH

Agency Database Search

As part of this EIR/EIS, the City completed an agency database search to identify known areas containing hazardous materials or waste within portions of Zone 4 of the "Water" Study Area where ground disturbance is proposed as part of the Off-site Water Facility Alternatives. The Federal database search included a review of the U.S. Environmental Protection Agency's (EPA) National Priorities List (NPL), EPA's Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS), EPA's Resource Conservation and Recovery Act (RCRA) Information System, and EPA's Emergency Response Notification System (ERNS) database. Additionally, the review included various state hazardous material databases including, but not limited to, Office of Environmental Health Hazard Assessment's (OEHHA) Hazardous Waste and Substances List (Cal SITES), the RWQCB Central Valley Tank Tracking System database, and the Cal-EPA's Active Annual Workplan Sites list.

A review of these databases identified numerous sites within 1/4 mile of the alternative alignments and WTP facilities (TrackInfo Services 2008). Table 3B.8-1 provides more detailed information for each of the Off-site Water Facility Alternatives. Of all the sites identified, two are listed on the National Priorities List (NPL) for groundwater contamination associated with past operations at the Aerojet Property and Mather Airport, respectively (TrackInfo Services 2008). These regional sources of groundwater contamination are discussed in more detail in Section 3B.9, "Hydrology and Water Quality – Water." Additionally, the database search revealed the presence of several solid waste handling facilities, leaking underground storage tanks, and registered above or underground storage tanks (AST/USTs) located within Zone 4 of the "Water" Study Area. A complete summary of the database search is provided in Appendix M-VII. The complete Database Report covering each of the Off-site Water Facility Alternatives can be reviewed at the City's Community Development Department office at 50 Natoma Street in Folsom during business hours.

Table 3B.8-1
Hazardous Materials Database Search Results – Zone 4 of the Off-site Water Facility Study Area

Alternative	Number of Site(s) Within ¼ Mile						
	NPL	RCRA	Cal SITES	LUST	ERNS	AST/UST	SWL
Proposed Off-site Water Facility Alternative	1	--	--	1	1	1	2
Off-site Water Facility Alternative 1	1	--	--	1	1	1	2
Off-site Water Facility Alternative 1A	1	--	--	1	1	1	2
Off-site Water Facility Alternative 2	2	12	1	--	3	6	2
Off-site Water Facility Alternative 2A	2	12	1	--	3	6	2
Off-site Water Facility Alternative 2B	1	3	1	--	1	1	0
Off-site Water Facility Alternative 3	2	12	1	--	3	6	2
Off-site Water Facility Alternative 3A	2	11	1	--	5	6	2
Off-site Water Facility Alternative 4	2		1	1	3	6	3
Off-site Water Facility Alternative 4A	2	6	1	1	3	6	4

Notes:
NPL National Priorities List
RCRA Resource Conservation and Recovery (Note: Includes all generators, transporters, and disposers of hazardous waste)
Cal Sites Site Mitigation and Brownfields Reuse Program Database (SMBRPD), includes Cortese List; does not include SWLs
LUST Leaking Underground Storage Tanks Tracking System
AST/UST Above-ground/Underground Storage Tanks
ERNS Emergency Response Notification System
SWL Solid Waste Landfill
Source: TrackInfo Services 2008, Complete Summary Report provided in Appendix M-VII.

Aerojet Superfund Site and Landfill

A detailed description of the Aerojet Superfund site, listed on the NPL, is provided in Sections 3A.8, "Hazards and Hazardous Materials – Land," of this EIR/EIS. In the mid-1960s, Aerojet developed a landfill to dispose of non-hazardous waste (office waste and construction debris) and a small amount of asbestos waste. The landfill is located on a 234-acre parcel within the Aerojet property. More specially, the landfill is situated on the north side of Aerojet Road south of U.S. 50 and west of Prairie City Road. The treated-water pipeline alignment under Off-site Water Facility Alternative 4 and 4A would be constructed just to the north of the existing landfill. Aerojet has proposed removal and clean closure of the landfill and has completed a Closure Modification Plan (Sacramento County 2008a). Sacramento County prepared a Mitigated Negative Declaration to implement the removal and clean closure of the landfill.

Kiefer Landfill

Kiefer Landfill is located east of the intersection of Kiefer Road and Grant Line Road. The Kiefer Landfill is classified as a "major landfill," which is defined as a facility that receives more than 50,000 tons of solid waste per year. The landfill is over a quarter mile to the east of the Proposed Off-site Water Facility Alternative conveyance pipeline alignment.

Underground Storage Tanks

No underground storage tanks are known to exist at the two WTP sites under consideration. One documented leaking underground storage tank (LUST) is identified along the Off-site Water Facility Alternatives 1, 1A, 4, and 4A alignments; the specific location of these sites are provided in Appendix M-VII. No other LUST locations are identified within Zone 4 of the "Water" Study Area.

Past Agricultural Uses within Zone of the "Water" Study Area

The agricultural history of Zone 4 of the "Water" Study Area consists of rural residential and fallow land, hay crop, and grazing land. Given this agricultural history, surficial soils are unlikely to contain any significant residual concentrations of persistent pesticides based on the historic land use of the site. Hay cropland, dry-farmed grain sites, grazing and fallow lands, as well as hobbyist-size (homestead) orchards typically do not require applications of environmentally persistent pesticides.

High-Pressured Natural Gas Pipelines

Pacific Gas and Electric Company (PG&E) distributes natural gas to urban centers within the "Water" Study Area. There are high pressure natural gas pipelines housed within major thoroughfares that run parallel and cross the Off-site Water Facility Alternative alignments. Specific roadways containing high-pressured natural gas pipelines include Sunrise Boulevard, Folsom Boulevard, Douglas Road, and Florin Road.

Serpentine Rock/Asbestos

Sacramento County's geology is generally associated with alluvial processes and not an asbestos-bearing geologic formation, such as that identified in the Bear Mountain Fault Zone east of the Sacramento County. Based on maps produced by the California Geological Survey, Zone 4 of the "Water" Study Area does not intersect with an asbestos-containing geologic formation (Churchill et al., 2000).

Radon Potential

Radon isotope-22 is a colorless, odorless, tasteless radioactive gas that is a natural decay product of uranium. Uranium and radon are present in varying amounts in rocks and soil, and radon is present in background concentrations in the atmosphere. Current evidence indicates that increased lung cancer risk is directly related to

radon-decay products. At this time, the EPA has recommended an "action" level for indoor radon concentrations at or exceeding 4 pico-curies per liter of air (pCi/l). Because the Off-site Water Facility Alternatives would not include structures for human habitation, this issue is not discussed further.

Wildland Fires

Zone 4 of the "Water" Study Area includes urbanized areas, urbanizing rural areas, and rural agricultural areas. Based on fire severity zone maps prepared by the California Department of Forestry and Fire Protection, Zone 4 of the Off-site Water Facility Study Area is located within a Local Responsibility Area (LRA) and within a moderate fire hazard severity zone (FRAP 2008). Given that the Off-site Water Facility Alternatives would involve the use of construction equipment in close proximity to areas containing large quantities of fuels (e.g., dry grasslands), this issue is discussed further in this EIR/EIS.

Public/Private Airports

The "Water" Study Area is situated to the south and east of the Planning Area boundary of the Airport Land Use Plan (ALUP) for Mather Field. The Off-site Water Facility Alternatives would not involve the erection of any structures within the ALUP planning area that could interfere with existing air traffic patterns or place sensitive land uses (e.g., single-family residential) within a flight hazard zone. For these reasons, no additional discussion of this issue is provided.

DRINKING WATER QUALITY AND PUBLIC HEALTH

Contaminants in drinking water can be benign or harmful to human health, depending on their chemical properties and the concentrations at which they are present. Many contaminants that present a known adverse risk to public health in drinking water are regulated at the Federal and state levels. There are many other contaminants without drinking water regulations, and the EPA has ongoing studies of certain contaminants to determine if health standards for them are warranted in the future (EPA 2001). However, the total removal of harmful contaminants from sources of drinking water normally is infeasible or impossible (EPA 2001).

The ability to detect trace levels of contaminants is improving with the advancement of analytical techniques. At this time, most contaminants are measured at the parts-per-million (ppm) level, However, the scientific community is discovering and detecting more contaminants in drinking water supplies at trace amounts, often at the parts-per-billion (ppb) or parts-per-trillion (ppt) level. Many of these contaminants are a result of a combination of agricultural, municipal wastewater, urban runoff, and industrial sources. Quantifying the threat posed to a population by any single contaminant (a health risk assessment) relies on substantial amounts of data from epidemiological and toxicological studies, and may take years, sometimes decades to develop.

Water Quality of the Sacramento River

Untreated water quality at the Bryte Bend WTP, located on the Sacramento River and approximately 8 miles upstream from the Freeport Project diversion is generally good, as indicated in Table 3B.9-2 in Section 3B.9, "Hydrology and Water Quality – Water" of this document. The untreated water routinely meets all municipal drinking water maximum concentration levels (MCLs), as established by Federal and state regulations, except for turbidity and odor. These latter constituents are reduced to below MCLs during water treatment. Sacramento River water is also expected to contain elevated bacterial counts, as is typical in a non-disinfected surface water source. Bacterial levels at the Bryte Bend WTP are reduced to acceptable levels during water treatment. No regulated volatile organic chemicals or synthetic organic chemicals were detected. For additional information about the water quality of the Sacramento River, refer to Section 3B.9, "Hydrology and Water Quality – Water."

Water Quality Parameters of Concern and Potential Treatment Solutions

Although Sacramento River water quality is generally good, the water may contain numerous contaminants pertinent to human health if used as a drinking water supply. This section summarizes known contaminant levels in Sacramento River water that may present potential health risks to end users within the City's service area. This section also summarizes the conventional drinking water treatment processes that would be needed to reduce specific contaminants or groups of contaminants. The following drinking water treatment processes are considered to be conventional: pH adjustment and disinfection; conventional sedimentation, filtration, pH adjustment, and disinfection for surface water. Other treatment processes required to treat certain contaminants, above and beyond these basic steps, are discussed later in this section.

Table 3B.9-2 in Section 3B.9, Hydrology and Water Quality – Water," shows the primary water quality constituents that may pose a public health threat if present at excessive levels, and their sources. The importance of each of these drinking water constituents is discussed further in this section.

Turbidity

Turbidity is a Measurement of the degree to which light is obstructed by substances in water. It is used as a surrogate Measurement for the concentration of particulate matter in water. Turbidity occurs in surface waters, and often spikes in concentration as a consequence of surface runoff from storm events.

Turbidity is a problem for treated water because high levels may shield microorganisms from disinfectants. To ensure adequate disinfection, turbidity of treated water must never exceed one turbidity unit (NTU), and may not exceed 0.3 NTU in at least 95% of daily samples in any month. Turbidity is also a secondary standard for aesthetic reasons, and is limited to 5 NTU in treated water.

Elevated turbidity levels require higher coagulant doses at WTPs and result in greater sludge production, with increased operating costs and potentially reduced treatment capacity.

Total Organic Carbon

Total Organic Carbon (TOC) occurs naturally in Sacramento River waters and groundwater, and is derived from plant, animal, and microorganism decomposition or excretion. TOC does not directly affect health, but instead combines with chlorine during the drinking water disinfection process, creating byproducts that are carcinogenic (Dunnick & Melnick 1993). These disinfection byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). While there is no specific maximum contaminant level (MCL) for TOC, EPA's Enhanced Surface Water Treatment Rule (ESWTR) requires that conventional WTPs remove a percentage of the TOC present in the water supply. The percentage required for removal varies, with higher TOC levels requiring higher removal percentages. Municipal WTPs with more than 4 mg/L TOC in their source water are required to utilize enhanced coagulation in their treatment process.

Trihalomethanes, specifically chloroform, bromodichloromethane, and dibromochloromethane, have been detected within treated Sacramento River water from the Bryte Bend WTP (see Table 3B.9-2). However, total trihalomethanes did not exceed the MCL of 80 µg/L.

TOC can also indirectly affect the formation of an inorganic disinfection by-product (DBP), bromate, at WTPs that utilize ozone and have sufficient levels of bromide in the source water. However, bromide concentrations in the Sacramento River average 18 µg/L (CALFED 2000), which is well below levels expected to form disinfection by-products (e.g., approximately 100 µg/L; Huang et al., 2003). Water treatment plants receiving water with higher TOC concentrations may require treatment process improvements or incur greater operating costs to produce water that provides an equivalent level of public health protection.

Nitrates

Nitrogen not used up by plants or returned to the atmosphere is converted to nitrate in the soil, which is highly soluble in water and can easily leach into the water table. Nitrates in drinking water supplies are commonly derived from agricultural chemicals such as inorganic fertilizer and animal manure, but are also released into the atmosphere by automobiles and industrial plants that burn fossil fuels. While some amount of nitrate is present within surface water from the Sacramento River, levels are typically much lower than groundwater, primarily because nitrates originate with agriculture and remain on land as water infiltrates, are very diluted if discharged to surface waters, or are naturally attenuated in surface waters. The Federal MCL for nitrate is 10 mg/L.

Typical water treatment processes for surface water do not remove nitrate. If nitrate is a significant concern (i.e., if it is above or approaching regulatory limits), ion exchange or granular activated carbon filtration may be required at a substantial cost.

Chromium-6

Chromium is a naturally occurring element found in soils. Chromium-6 can be found in the environment, or more commonly in waste generated by industries, such as metal finishing, dying, electronics, metallurgy, and others. Chromium-6 may also be found naturally in groundwater. Chromium-6 is a suspected carcinogen and is regulated as total chromium in drinking water, with an MCL of 50 µg/L. Health concerns have prompted the CDPH to pursue an MCL that is specific for chromium-6, and the process is currently underway. Sacramento River water does not contain chomium-6 levels high enough to affect public health.

Selenium

Naturally occurring selenium is released through both natural processes (selenium deposits within soils are regional) and anthropogenic activities. Used mainly in the electronics and glass industries, selenium is also added as a trace nutrient in phosphate fertilizers. Selenium is toxic at high concentrations, and is therefore regulated, with a state MCL of 50 ppb in drinking water. Sacramento River water does not contain selenium levels high enough to affect public health.

Mercury

Historic gold mining practices in the 1850's to 1880's released substantial amounts of mercury into California waterways. Some of this mercury was carried to downstream environments, while more leaked from the manmade recovery troughs into the soils, leaving a legacy of water quality contamination in many watersheds. It has been estimated that 1,000 tons of mercury were lost in the mining processes in the gold rush, mostly in the Sierra Nevada (Alpers 2005). Localized areas of high concentration still exist today, with drainage and runoff contributions causing over 20 water bodies to have fish consumption advisories. However, in the Sacramento River, in the vicinity of the proposed Off-site Water Facilities, mercury concentrations are within applicable water quality standards (see Table 3B.9-2).

Agriculture-Related Constituents

Agriculture in the Sacramento River watershed is common, with irrigated agriculture covering a total area greater than 2 million acres, and livestock operations with more than 570,000 cattle and calves. Drainage and runoff from agriculture can be a source of pesticides, TOC, Cryptosporidium spp. bacteria, and other compounds.

Agricultural pesticides are synthetic chemicals often used in large-scale agricultural applications. Due to the prevalence of agriculture within the Sacramento River watershed, there is potential for pesticide contamination of surface water and groundwater. Although pesticides are typically designed to target the function of only specific pests, they may still have a range of effects on human health. Because agricultural pests develop pesticide resistance over time, and because regulations have required discontinuation of specific pesticides, the suite of

pesticides applied by the farm industry changes over time. Potential effects to human health are therefore difficult to quantify, and the health effects of many newer pesticides remain largely unknown. Pesticides in natural waters are minimized with Best Management Practices and other regulatory and voluntary measures (EPA 2005).

Major pesticides and herbicides that have been detected in the Sacramento River watershed at trace concentrations include those listed below (Domagalski 2000). Some concentrations were so low that the analytical methods used could not definitively quantify the levels detected. Both sampling sites considered in compiling the following list were along the Sacramento River, near the Yolo Bypass.

- Thiobencarb
- Carbofuran
- Diazinon
- Dacthal
- Ethyl dipropylthiolocarbamate (EPTC)
- Malathion
- Metribuzin
- Napropamide
- Pronamide
- Trifluralin
- Carbaryl
- Metolachlor
- Simazine
- Historical pesticides that have been restricted or eliminated (e.g., DDT, molinate)

Annual monitoring at the Bryte Bend WTP checks for dozens of pesticides. Although some were detected at low levels, all were below MCLs (City of West Sacramento 2007 and 2008). Typical drinking water treatment practices do not target pesticides for removal. Activated carbon or reverse osmosis filters can be effective at removing most pesticides from water at moderate to high additional costs.

Industrial Organic Pollutants

Industrial wastes can contain a broad range of chemicals such as petroleum-based contaminants, solvents, dry cleaning chemicals, chlorinated hydrocarbons, and many others. These compounds occur at hazardous levels more frequently in groundwater, where they accumulate and spread as a result of industrial seepage and groundwater flow.

Industrial wastes are a concern in groundwater because they have been detected in various portions of the South American Subbasin. These compounds can be detrimental to human health, and may or may not be regulated as constituents in drinking water supplies. Surface waters may also be susceptible to contamination by industrial organic pollutants. Industrial organic pollutants however, have not been detected in the Sacramento River, as indicated by water quality sampling at the Bryte Bend WTP (City of West Sacramento 2007 and 2008).

Typical treatment processes do not remove industrial organic pollutants, but they can be removed through granular activated carbon filtration or reverse osmosis at a significant cost. A more common approach to reducing industrial organic pollutants from groundwater used for drinking water supply is to remove contaminated wells from service.

Urban Runoff Contaminants

Urban runoff consists of water that has drained from non-porous surfaces in densely populated areas. Any form of precipitation and/or irrigation can wash away materials from these impervious surfaces, since urban terrain is non-porous and does not have the ability to filter or biodegrade contaminants like natural soil. Suspended sediment is the primary pollutant in urban runoff, and may contain oil, grease, pesticides, road salts, metals, bacteria and

viruses, and toxic chemicals from automobiles. While urban runoff contaminants are likely to be present in Sacramento River water at trace concentrations, as indicated by water quality sampling at the Bryte Bend WTP (City of West Sacramento 2007 and 2008).

Urban Wastewater Effluent-Related Constituents

There are at least eight major urban areas upstream of the Freeport Project: Redding, Red Bluff, Chico, Oroville, Yuba City/Marysville, Woodland, Sacramento, and West Sacramento. These urban areas represent potential sources of treated wastewater effluent in the Sacramento River. All wastewater effluent discharged to surface waters is regulated by the Central Valley RWQCB and must be adequately treated and monitored to minimize impacts to the receiving water. Permits are renewed periodically to ensure that they remain protective in the face of changing knowledge and regulations. Therefore, for conventional toxic compounds, treated wastewater contributions to surface water do not typically present a risk to human health, especially when combined with the surface water treatment process prior to human consumption.

Many constituents, however, that are commonly found within treated wastewater effluent, including pharmaceuticals and personal care products (PPCPs) and endocrine disrupting compounds (EDCs) are still not regulated. Typical examples of these compounds found at trace levels in wastewater effluent include:

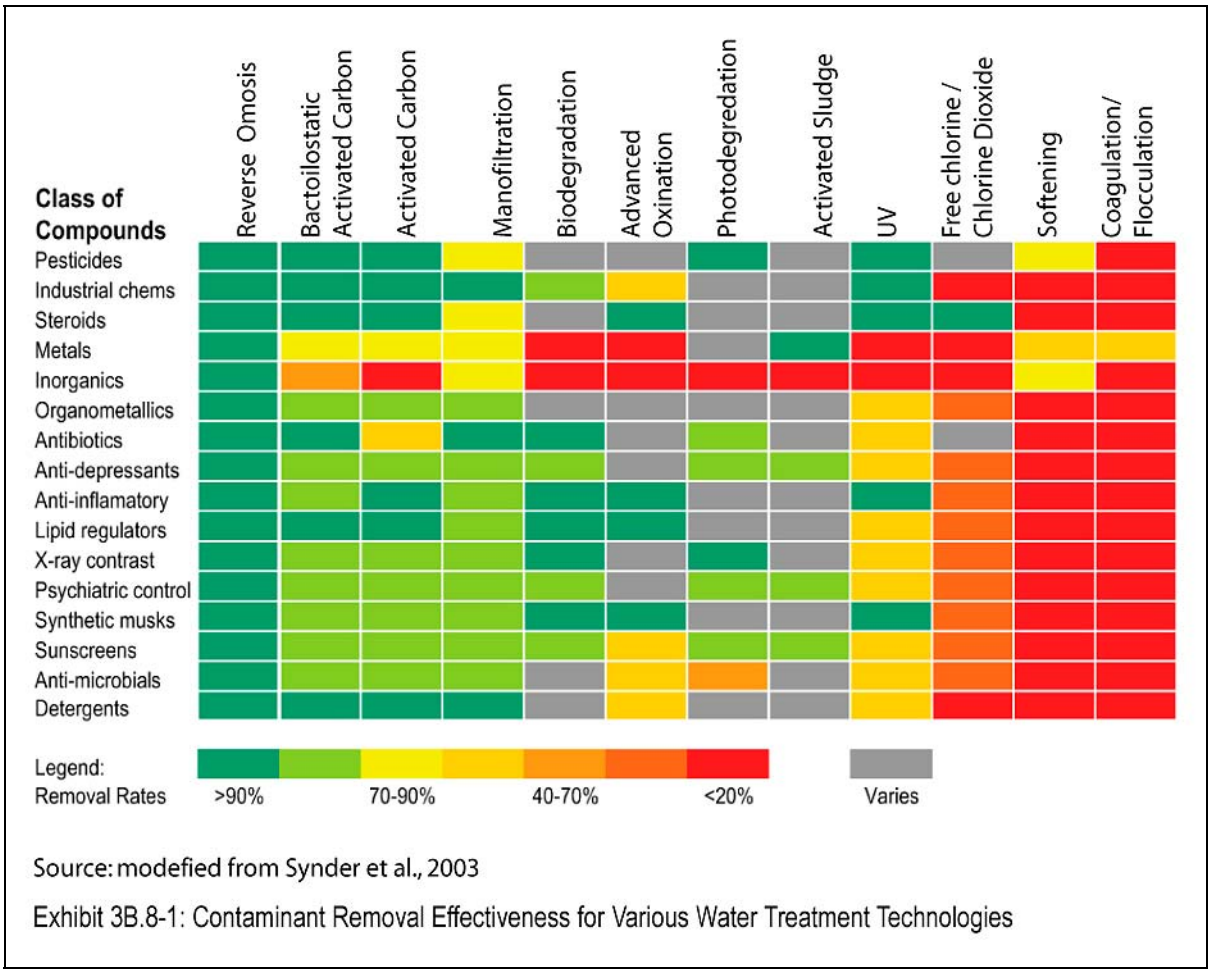
- veterinary and human antibiotics;
- prescription drugs (e.g., antacids, analgesics, antidepressants);
- nonprescription drugs (e.g., caffeine, acetaminophen);
- personal care products (e.g., fragrances, antioxidants);
- household products (e.g., solvents, disinfectants, detergents);
- industrial products in the household (e.g., plasticizers, fire retardants, insecticides); and
- steroids and hormones.

The USGS completed a water quality survey in 1999–2000 to study the levels of pharmaceuticals, hormones, and other organic wastewater contaminants in surface waters across the United States subject to the treated wastewater discharges of urban areas (Kolpin, et al., 2002). In this study, 95 compounds were analyzed, representing a wide range of compounds likely to be present in treated wastewater effluent, including those groups listed above. One of the sampling sites was on the Sacramento River, near the discharge from the Sacramento Regional Wastewater Treatment Plant located downstream of the Freeport Project diversion. Trace concentrations of three PPCPs (acetaminophen, cholesterol, and mestranol) were detected in the samples from the Sacramento River. The other 92 compounds tested were not detected at levels the USGS was capable of measuring. Concentrations of acetaminophen, cholesterol, and mestranol were very low, and would have required ingestion of 1,200 to over 5 million gallons of untreated wastewater to amount to the equivalent of a single dose of mestranol or acetaminophen, respectively.

Typical water treatment processes for surface water are not designed to remove EDCs and PPCPs, although some incidental removal does take place. To target their removal, reverse osmosis is considered the best available technology, but can only be implemented at a high cost.

Water Treatment Options for Water Pollutants

Exhibit 3B.8-1 below outlines potential treatment measures for several classes of compounds considered in this EIR/EIS. Typical water treatment processes may include pH adjustment, chlorine disinfection, sedimentation, and filtration. Of the treatments shown on Exhibit 3B.8-1, UV and Coagulation/Flocculation would be present at the WTP. Advanced technologies such as activated carbon filtration and reverse osmosis are generally not applied because of high cost.



Source: Modified from Synder et al., 2003

Contaminant Removal Effectiveness for Various Water Treatment Technologies **Exhibit 3B.8-1**

Hazardous materials presently used at the City's existing WTPs include those common to water treatment processes. The use of these hazardous materials would also be expected at the new WTP, if constructed. The Hazardous Material Management Plan (HMMP) for the WTPs lists all hazardous materials located and used on-site. Such materials include: Aluminum Sulfate, Aluminum Sulfate Acidized, Argon, Polymer, Diesel Fuel, Non Ionic Polymer, Sodium Ortho/Polyphosphate, Sodium Hydroxide, and Sodium Hypochlorite. Each of these materials is described in more detail below.

- **Aluminum Sulfate, or Liquid Alum** is used in the water and waste treatment industry, and the production of aluminum chemicals. Liquid Alum is generally used in soaps, greases, drugs, cosmetics, some food additives, and fire extinguisher compounds. Mist inhalation of Liquid Alum may irritate the nose, throat, and lungs. Ingestion of Liquid Alum may irritate the gastrointestinal tract and cause nausea, vomiting, and purging.

- **Argon Gas** is used in critical industrial processes such as the manufacturing of high quality stainless steels and production of impurity-free silicon crystals for semi-conductor manufacture. Argon is also used as an inert filler gas for light bulbs and as a dry, heavier-than-air-or-nitrogen filler for the space between glass panels in high-efficiency multi-pane windows. Inhalation of high concentrations of Argon gas may cause asphyxiation. Symptoms may include loss of mobility and consciousness.

- **Polymer (CAT-FLOC)** is a commercially available flocculating agent used in many settings because it is a highly effective polymer. It acts in much the same way that Alum does, except that it is faster. Water Polymer is made up of cations, and since most suspended particles are negatively charged, Cat-Floc neutralizes these negative-repulsive forces and allows the suspended particles to flocculate together (forming larger, denser particles) which settle more quickly. This agent creates a gel like web that, as it settles, traps small suspended particles, and forces them to settle with the gel. The primary routes of exposure to polymer are through the eyes and the skin. Prolonged contact may cause irritation in both the eyes and the skin. Ingestion and inhalation are not likely routes of exposure.

- **Diesel Fuel No. 2** is a colorless to brown liquid with a kerosene-like odor. Diesel is a central nervous system depressant. Chronic dermal exposure may result in dermatitis, erythema (reddening of the skin), and eczematous lesions. Diesel fuel causes an aspiration hazard if swallowed and can cause damage if it gets in the lungs. In addition to diesel fuel's health hazards it is highly flammable in the liquid and vapor form.

- **Non-ionic Polymer** is a flocculation and filter aid in the water treatment process. The primary routes of exposure are through the eyes and skin. Prolonged exposure may cause irritation to the eyes and the skin. Inhalation of non-ionic polymer can occur by breathing in the dust. Ingestion is not a likely route of exposure.

- **Sodium Ortho/Polyphosphate** is used in potable water and industrial water treatment for corrosion control, lead and copper control, scale control and sequestering. They are generally effective in the pH range of 6.0 to 8.5. Blends improve the range and reliability of phosphate based inhibitors and represent the most vigorous growth opportunities. Ingestion may cause irritation to the mouth and throat, or cause nausea and vomiting. Contact with the skin and eyes may also cause irritation. If inhaled irritation to the respiratory tract may occur.

- **Sodium Hydroxide or Caustic Soda Liquid** is used in industry to neutralize acids; to precipitate alkaloids; in metal finishing; in cleaners; and to precipitate most metals as hydroxides from aqueous solutions. Inhalation of mists may be severely irritating or corrosive to the nose, mouth, throat, and lungs. Exposure may cause burns to the respiratory tract with the production of lung edema, which can result in shortness of breath, sneezing, choking, chest pain, and impairment of lung function. Exposure to the skin or eyes may cause severe irritation or burns characterized by redness, swelling, and pain. Ingestion can cause severe irritation or burns to the entire gastrointestinal tract, including the stomach and intestines.

- **Sodium Hypochlorite or bleach** is used as a disinfectant in the treatment process. A major drawback to using chlorine gas or sodium hypochlorite, however in the disinfection process is that they react with organic compounds in the water to form potentially harmful levels of the chemical by-products THMs and HAAs, both of which are carcinogenic and regulated by the EPA. Mist inhalation can irritate the nose and throat. Chemical burns may result from exposure of the skin to sodium hypochlorite. In addition, exposure of the eyes can cause severe irritation. Ingestion may cause irritation, pain, and inflammation of the mouth and stomach, vomiting, shock, confusion, delirium, coma and in severe cases death.

3B.8.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

The following Federal plans, policies, regulations, and laws related to hazards and hazardous materials are relevant to the Off-site Water Facilities alternatives, and are described in detail in Section 3A.8, "Hazards and Hazardous Materials – Land:"

- Hazardous Materials Handling Resource Conservation and Recovery Act (RCRA),
- Worker Safety Requirements,
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA),

- Superfund Amendments and Reauthorization Act,
- National Oil and Hazardous Substances Pollution Contingency Plan, and
- Clean Air Act.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

The following state plans, policies, regulations, and laws related to hazards and hazardous materials are relevant to the Off-site Water Facilities alternatives, and are described in detail in Section 3A.8 "Hazards and Hazardous Materials – Land:"

- Hazardous Material Handling – California Hazardous Materials Release Response Plans and Inventory Law of 1985 (Business Plan Act);
- Worker Safety Requirements, California OSHA (Cal-OSHA);
- Hazardous Materials Transport, California Department of Transportation (Caltrans);
- Government Code Section 65962.5 (Cortese List);
- Asbestos Abatement, Sacramento Metropolitan Air Quality Management District, Rule 902; and
- California Public Resources Code Section 21151.4.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

The following regional and local plans, policies, regulations, and laws related to hazards and hazardous materials are relevant to the Off-site Water Facilities alternatives, and are described in detail in Section 3A.8 "Hazards and Hazardous Materials – Land:"

- Sacramento County Multi-Hazard Mitigation Plan

Unified Hazardous Waste and Hazardous Management Regulatory Program

The Unified Hazardous Waste and Hazardous Management Regulatory Program (SB 1082, 1993) is a state and local effort to consolidate, coordinate, and make consistent existing programs regulating hazardous waste and hazardous materials management. Cal/EPA adopted implementing regulations for the Unified Program (CCR, Title 27, Division 1, Subdivision 4, Chapter 1) in January 1996. The Unified Program is implemented at the local level by Certified Unified Program Agencies (CUPAs).

Sacramento County General Plan

The Sacramento County General Plan Hazardous Materials Element (Sacramento County 1993) provides a hazardous materials policy plan to manage hazardous materials and minimize their effects on humans and the environment. The General Plan policies include measures to educate and inform the public about hazardous waste management, implement public health and safety programs, and coordinate with other agencies to enforce hazardous materials regulations. The General Plan also provides details on emergency response plans for responding to hazardous material spills and other emergency actions.

In addition to the County General Plan policies identified in Section 3A.8, "Hazards and Hazardous Materials – Land," the following General Plan policies, are relevant to the Off-site Water Facilities alternatives:

- **Policy SA-22:** The County shall require that all new development meets the local fire district standards for adequate water supply and pressure, fire hydrants, and access to structures by fire fighting equipment and personnel.

- **Policy SA-23:** The County shall require, unless it is deemed infeasible to do so, the use of mechanical vegetation control in lieu of burning or the use of chemicals in areas where hazards from natural cover must be eliminated, such as levees and vacant lots.

- **Policy SA-25:** During the Development Plan Review process, the County shall require, where appropriate, the use of fire resistant landscaping and building materials for new developments that are cost effective.

- **Policy SA-26:** The County shall require, to the maximum extent feasible, on-site fire suppression systems for all new commercial and industrial development to reduce the dependence on fire department equipment and personnel.

- **Policy SA-28:** The County shall continue its coordinative efforts, including evacuation planning, with service agencies, the cities within the County, and cities within surrounding counties.

Area Plan for Emergency Response to Hazardous Materials Incidents in Sacramento County

In 2003, the County adopted the Area Plan for Emergency Response to Hazardous Materials Incidents in Sacramento County (Sacramento County 2003). This plan provides information on the response protocol by governmental agencies and other response organizations in a hazardous materials incident and provides details on the hazardous materials response plans in the County.

Sacramento County Environmental Management Department

The Sacramento County Environmental Management Department (EMD) is responsible for enforcing state regulations governing hazardous waste generators, hazardous waste storage, hazardous waste disposal, and underground storage tanks. The Sacramento County Department of Waste Management and Recycling is responsible for implementing the County's solid waste management and recycling programs.

City of Rancho Cordova

Applicable policies of the City of Rancho Cordova's General Plan relating to hazards and hazardous materials are provided below.

- **Policy S.1.5:** The City shall require written confirmation from applicable local, regional, state, and federal agencies that known contaminated sites have been deemed remediated to a level appropriate for land uses proposed prior to the City approving site development or provide an approved remediation plan that demonstrates how contamination will be remediated prior to site occupancy. This documentation will specify the extent of development allowed on the remediated site as well as any special conditions and/or restrictions on future land uses.

- **Policy S.5.2:** Consider the potential impact of hazardous facilities on the public and/or adjacent or nearby properties posed by reasonably foreseeable events. The City considers an event to be "reasonably foreseeable" when the probability of the event occurring is greater than one in one million per year.

- **Policy S.5.3:** Regulate the storage of hazardous materials and waste consistent with State and Federal law.

- **Policy S.5.5:** Separate hazardous or toxic materials from the public.

- **Policy S.5.6:** Ensure that procedures are in place to reduce the chance of accidents in the transport of hazardous materials.

- **Policy S.9.1:** Cooperate with the Sacramento Metropolitan Fire District (SMFD) to reduce fire hazards, assist in fire suppression, and ensure efficient emergency medical response.

Drinking Water Regulations

Enhanced Surface Water Treatment Rule

The Enhanced Surface Water Treatment Rule (ESWTR) is an EPA regulation that protects against microbial organisms in drinking water, particularly Cryptosporidium, and health threats from disinfection by-products. This rule includes a set of requirements aimed at reducing effects from these threats. Specifically, the rules address acceptable limits for Cryptosporidium methods for reducing potential for presence of Cryptosporidium, and techniques to reduce risks associated with disinfection byproducts. Implementation of the Rule was required by January 1, 2002 (EPA 2007b).

California Department of Health Services' Drinking Water Program

The California Department of Public Health's (CDPH) Drinking Water Program regulates public water systems, provides permits for water treatment devices, certifies drinking water treatment and distribution operators, and supports and promotes water system security. CDPH enforces the California Safe Drinking Water Acts including field inspections of water systems, issuance of operating permits, reviewing plans and specifications for new facilities, taking enforcement actions for non-compliance, and reviewing water quality results.

Local

The Sacramento County Health and Human Services Department is responsible for implementing policies and procedures within Sacramento County related to drinking water quality. These include: (1) oversight of groundwater well construction and abandonment in order to prevent groundwater contamination, (2) water quality testing and regulation of procedures to remove coliform bacteria from public and private water supplies, (3) oversight of sewage disposal in order to prevent water contamination and the spread of disease, and underground/aboveground storage tank permitting, inspection, and compliance.

3B.8.3 Environmental Consequences and Mitigation Measures

Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. These thresholds also encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. For the purposes of this analysis, an impact related to hazards and hazardous materials would be considered significant if the Off-site Water Facilities would:

- create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;

- create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment;

- create a significant public health risk through the introduction of contaminants to the drinking water supply at concentrations with known adverse effect;

- emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;

- be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment;

- for a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working the project area;

- for a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area;

- impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or

- expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

ANALYSIS METHODOLOGY

To evaluate the potential for encountering existing hazards and hazardous waste, this analysis used a combination of field reconnaissance of Zone 4 by RMC Water and Environment in November 2008, a review of aerial photographs for Zone 4, and a search of state and Federal databases TrackInfo Services (TrackInfo Services 2008). Site-specific documents used in the impact analysis are included in Appendix M-VII of this EIR/EIS. Issues related to existing hazards within the SPA, include the Island Operating Unit (OU) of the Aerojet Superfund site are discussed in Section 3A.8, "Hazards and Hazardous Materials – Land," of this EIR/EIS.

In order to evaluate the use of water supplies from the Sacramento River as a public drinking water supply and determine whether the use of this supply could result in a significant impact to public health, numerous surface water constituents were considered within this analysis. These include compounds for which primary or secondary MCLs have been established, total organic carbon, agriculture-related constituents including pesticides, industrial organic pollutants, chemicals derived from urban runoff, and endocrine disrupting compounds and pharmaceuticals/personal care products found in urban wastewater effluent.

Concentrations of regulated constituents from treated water from the Bryte Bend WTP in West Sacramento, located upstream of, but in the same vicinity of, the Off-site Water Facilities was compared to applicable drinking water standards. Until operation of the Freeport Project, West Sacramento's WTP raw and treated water provides the best characterization as to the quality of this surface water supply. For the purposes of this analysis, it was assumed that the Off-site Water Facilities WTP would operate similar to or better than the Bryte Bend WTP. This analysis also considers the potential for unregulated constituents to occur at levels relevant to human health within the proposed water supplies.

ISSUES NOT DISCUSSED FURTHER IN THIS EIR/EIS

Safety Issues Related to Proximity to Airports—The Off-site Water Facilities would not involve the construction of habitable structures within an adopted ALUP or within two miles of a public airport or public use airport. Although NCMWC's service area includes lands within the Sacramento International Airport ALUP boundary, the Off-site Water Facility Alternatives would not involve physical changes to NCMWC's service area (or Zone 1 of the Off-site Water Facilities Study Area) and, therefore, would not increase or create new safety hazards for people residing or working the ALUP area. Similarly, Zone 4 of the "Water" Study Area is located to the south of the Mather Airfield and borders the southern portion of that airfield's ALUP area.

Only underground facilities (e.g., pipeline) would be installed within the vicinity of the ALUP. The locations of the two WTP under evaluation are both situated at distances of greater than 2 miles from the ALUP and, based on these findings, it is reasonable to conclude that all the Off-site Water Facility Alternatives would have no impacts on existing and future airport operations. For reasons identified above, the Off-site Water Facility Alternatives would not be expected to result in an increased or new safety hazard for people residing or working within the vicinity of a private airstrip. No impact is expected. Therefore, this issue area is not discussed further this EIR/EIS.

IMPACT ANALYSIS

Impacts that would occur under each of the Off-site Water Facility Alternatives are identified as follows:

NCP (No USACE Permit Alternative)

PA (Proposed Off-site Water Facility Alternative)

1 (Off-site Water Facility Alternative 1 – Raw Water Conveyance – Gerber/Grant Line Road Alignment and White Rock WTP)

1A (Off-site Water Facility Alternative 1A Raw Water Conveyance – Gerber/Grant Line Road Alignment Variation and White Rock WTP)

2 (Off-site Water Facility Alternative 2 Treated Water Conveyance – Douglas Road Alignment and Vineyard SWTP)

2A (Off-site Water Facility Alternative 2A Treated Water Conveyance – Excelsior Road Alignment Variation and Vineyard SWTP)

2B (Off-site Water Facility Alternative 2B Treated Water Conveyance – North Douglas Tanks Variation and Vineyard SWTP)

3 (Off-site Water Facility Alternative 3 Raw Water Conveyance – Excelsior Road Alignment and White Rock WTP)

3A (Off-site Water Facility Alternative 3A Raw Water Conveyance – Excelsior Road Alignment Variation and White Rock WTP)

4 (Off-site Water Facility Alternative 4 Raw Water Conveyance – Easton Valley Parkway Alignment and Folsom Boulevard WTP)

4A (Off-site Water Facility Alternative 4A Raw Water Conveyance – Easton Valley Parkway Alignment Variation and Folsom Boulevard WTP).

The impacts for each alternative are compared relative to the PA at the end of each impact conclusion (i.e., similar, greater, lesser).

IMPACT 3B.8-1 **Accidental Spill from Routine Transport, Use, or Disposal of Hazardous Materials.** *Accidental spills of hazardous materials could result during routine transport, use, or disposal activities as part of the implementation of the Off-site Water Facility Alternatives.*

NCP, PA, 1, 1A, 3, 3A, 4, and 4A

Construction of the Off-site Water Facilities would routinely involve the use of fuels, oils, and/or solvents, which could be accidentally spilled or released from containment. Such release could expose individuals and the environment to hazardous materials. During excavation and construction activities, it is anticipated that gasoline, diesel fuel, and hydraulic fluid would be handled on the construction site. Equipment fueling and maintenance requirements would likely use temporary aboveground bulk storage tanks as well as storage in sheds or trailers.

The potential for an accidental release exists during handling and transfer of these materials. If a significant spill were to occur, the accidental release could pose a hazard both to construction employees and the environment, depending on the relative hazard of the material released. Although typical construction management practices limit and often eliminate the impact of such accidental releases, there is a possibility of a spill or a release with the temporary on-site storage of hazardous materials. Therefore, construction-related **direct** and **indirect** impacts are considered **potentially significant**. ***[Similar]***

Operation of the proposed WTP would involve routine transport, use, or disposal of hazardous or potentially hazardous materials. The materials described in the setting discussion would be utilized at the WTP to help remove suspended solids, control and adjust pH, and disinfect untreated surface water, in order to consistently achieve mandated drinking water limitations (primary and secondary drinking water standards) and provide customers with a quality drinking water product. In addition to the chemicals listed in the setting discussion, paints, paint thinners, waste oils, miscellaneous lubricating oils, laboratory solvents, compressed acetylene and oxygen gas, and diesel fuel would be stored in various small quantities at the WTP site. Additionally, proprietary polymers would be stored in bulk and may include: cationic polymer used as a coagulation agent, anionic polymer used as a flocculation agent, and nonionic polymer used as a filter aid.

Chlorine or liquid sodium hypochlorite would be used for disinfection of the drinking water and to comply with state laws requiring residual chlorine within water distribution systems. Identical to common household bleach except with regards to concentration of the active ingredient (sodium hypochlorite), liquid sodium hypochlorite would be delivered to the site in tank trucks as a 12.5% (trade) solution. Liquid sodium hypochlorite is inherently safer and far less hazardous than compressed chlorine gas, commonly used in the drinking water treatment industry. Liquid sodium hypochlorite is moderately corrosive. However, liquid sodium hypochlorite in its natural liquid state poses far less severe inhalation hazard than chlorine gas.

Because there is a possibility of a spill or a release with the on-site storage of hazardous materials, this **direct** impact is considered **potentially significant**. **No indirect** impacts would occur. ***[Similar]***

> Mitigation Measure 3B.8-1a: Transport, Store, and Handle Construction-Related Hazardous Materials in Compliance with Relevant Regulations and Guidelines.
>
> The City shall ensure, through the enforcement of contractual obligations, that all contractors transport, store, and handle construction-related hazardous materials in a manner consistent with relevant regulations and guidelines, including those recommended and enforced by Caltrans, Central Valley RWQCB, local fire departments, and the County environmental health department.
>
> Recommendations shall include as appropriate transporting and storing materials in appropriate and approved containers, maintaining required clearances, and handling materials using applicable Federal, state and/or local regulatory agency protocols. In addition, all precautions required by the Central Valley RWQCB-issued NPDES construction activity stormwater permits shall be taken to ensure that no hazardous materials enter any nearby waterways.
>
> In the event of a spill, the City shall ensure, through the enforcement of contractual obligations, that all contractors immediately control the source of any leak and immediately contain any spill utilizing appropriate spill containment and countermeasures. If required by the local fire departments, the local environmental health department, or any other regulatory agency, contaminated media shall be collected and disposed of at an off-site facility approved to accept such media.
>
> The storage, handling, and use of the construction-related hazardous materials shall be in accordance with applicable Federal, state, and local laws. Construction-related hazardous materials and hazardous wastes (e.g., fuels and waste oils) shall be stored away from stream channels and steep banks to prevent these materials from entering surface waters in the event of an accidental release. These materials shall be kept

at sufficient distance (at least 500 feet) from nearby residences or other sensitive land uses. This includes materials stored for expected use, materials in equipment and vehicles, and waste materials.

Implementation: City of Folsom Utilities Department

Timing: Prior to construction and operation of all Off-site Water Facilities

Enforcement:

1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.

2. For the off-site water facilities constructed within Sacramento County or the City of Rancho Cordova: Sacramento County Environmental Management Department.

3. Other regulatory agencies, such as California Department of Toxic Substances Control, or Central Valley Regional Water Quality Control Board, as appropriate.

Mitigation Measure 3B.8-1b: Prepare and Implement a Hazardous Materials Management Plan.

The City shall prepare a Hazardous Materials Management Plan (HMMP) for the proposed WTP. The HMMP shall provide for safe storage, containment, and disposal of chemicals and hazardous materials related to WTP operations, including waste materials. The plan shall include, but shall not be limited to, the following:

- a description of hazardous materials and hazardous wastes;
- a description of handling, transport, treatment, and disposal procedures, as relevant for each hazardous material or hazardous waste;
- preparedness, prevention, contingency, and emergency procedures, including emergency contact information;
- A description of personnel training including, but not limited to: (1) recognition of existing or potential hazards resulting from accidental spills or other releases; (2) implementation of evacuation, notification, and other emergency response procedures; (3) management, awareness, and handling of hazardous materials and hazardous wastes, as required by their level of responsibility;
- Instructions on keeping Materials Safety and Data Sheets (MSDS) on-site for each on-site, hazardous chemical;
- Identification of the locations of hazardous material storage areas, including temporary storage areas, which shall be equipped with secondary containment sufficient in size to contain the volume of the largest container or tank; and
- A description of equipment maintenance procedures.

The HMMP shall be made a condition of contractual obligation and shall be available for review by construction inspectors and implementation compliance shall be monitored.

Implementation: City of Folsom Utilities Department

Timing: Prior to construction and operation of all Off-site Water Facilities

Enforcement:

1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.

2. For the off-site water facilities constructed within Sacramento County or the City of Rancho Cordova: Sacramento County Environmental Management Department.

3. Other regulatory agencies, such as California Department of Toxic Substances Control, or Central Valley Regional Water Quality Control Board, as appropriate.

2, 2A, and 2B

Construction-related impacts associated with Off-site Water Facility Alternatives 2, 2A, and 3B would be similar to the alternatives listed above. Although typical construction management practices limit and often eliminate the impact of such accidental releases, there is a possibility of a spill or a release with the temporary on-site storage of hazardous materials. Therefore, construction-related **direct** and **indirect** impacts are considered **potentially significant**. ***[Similar]***

The main difference between Off-site Water Facility Alternatives 2, 2A, and 2B is relation to those listed above is that these alternatives would involve the purchasing of capacity within SCWA's Vineyard SWTP and, therefore, would not require the construction of a new WTP. For this reason, the operational impacts identified for the alternatives listed above would not apply to Off-site Water Facility Alternatives 2, 2A, and 2B and a **less-than-significant direct** operational impact would occur. **No indirect** impacts would occur. ***[Lesser]***

Mitigation Measure: Implement Mitigation Measure 3B.8-1a.

Implementation of Mitigation Measure 3B.8-1a would reduce potentially significant impacts under the No USACE Permit Alternative, Proposed Off-site Water Facility Alternative, and Off-site Water Facility Alternatives 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A to a **less-than-significant** level by ensuring the transport, storage, and use of construction-related hazardous materials complies with applicable Federal, state, and local regulations. Implementation of Mitigation Measure 3B.8-1b would reduce potentially significant impacts under the No USACE Permit Alternative, Proposed Off-site Water Facility Alternative, and Off-site Water Facility Alternatives 1, 1A, 3, 3A, 4, and 4A to a **less-than-significant** level through preparation of an HMMP for the WTP.

IMPACT 3B.8-2 Create Accident Conditions Involving Potential Release of Hazardous Materials. *Construction and operation of the Off-site Water Facilities could create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment.*

NCP, PA, 1, 1A, 3, 3A, 4, and 4A

As previously indicated in Impact 3B.8-1, construction and operation of the proposed WTP under the No USACE Permit Alternative, Proposed Off-site Water Facility Alternative, and Off-site Water Facility Alternatives 1, 1A, 3, 3A, 4, and 4A would involve the use of a variety of hazardous materials such as fuels, motor oils, paints, compressed gases, and chemicals. In addition, construction of the Off-site Water Facilities has the potential to disrupt existing utilities and infrastructure (e.g., natural gas). As provided in Section 3B.16, "Utilities and Service Systems – Water," high-pressure natural gas pipelines are housed in major roadways including Mather Boulevard, Sunrise Boulevard, Douglas Road, and Florin Road. Because there is a possibility of a hazardous spill or a release of hazardous substances (e.g., natural gas) during the construction and on-site storage of hazardous materials at the WTP, this **direct** impact is considered **potentially significant**. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure: Implement Mitigation Measures 3B.8-1b, 3B.16-3a, and 3B.16-3b.

2, 2A, and 2B

Under Alternatives 2, 2A, and 2B, the Off-site Water Facilities would likely involve a minor increase in the use and transport of hazardous materials at the Vineyard SWTP. However, this increase is not considered to be significant in relation to existing conditions and this **direct** impact would be **less than significant**. **No indirect** impacts would occur. ***[Lesser]***

However, similar, to the Proposed Alternative, these alternatives could result in a hazardous spill or release during construction, and therefore, these **direct** impacts could be **potentially significant**. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure: Implement Mitigation Measures 3B.8-1b, 3B.16-3a, and 3B.16-3b.

Implementation of Mitigation Measure 3B.8-1b would reduce potentially significant impacts under the No USACE Permit Alternative, Proposed Off-site Water Facility Alternative, and Off-site Water Facility Alternatives 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A to a **less-than-significant** level through preparation of an HMMP for the WTP and coordination with utility providers. Implementation of Mitigation Measures 3B.16-3a and 3B.16-3b would minimize risks related to the potential for rupturing high-pressure natural gas lines during construction and, therefore, this impact would be reduced to a **less-than-significant** level following mitigation implementation.

IMPACT 3B.8-3 Introduction of Drinking Water Contaminants. *Operation of the Off-site Water Facility Alternatives would not create a significant public health risk through the introduction of contaminants into a drinking water supply at concentrations with known adverse health effects.*

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A

Surface Water Supplies

A review of water data from West Sacramento's Bryte Bend WTP, which treats Sacramento River water upstream of the Freeport Project intake, shows no exceedance of drinking water standards. Table 3B.9-2 in Section 3B.9, "Hydrology and Water Quality – Water," shows the water quality parameter concentrations grouped by regulations, along with primary and secondary MCLs. At Bryte Bend WTP, the concentration of regulated constituents in treated water has not exceeded the applicable MCLs. None of the regulated or unregulated VOCs or synthetic organic chemicals were detected in treated water. While the THMs bromodichloromethane and chloroform were detected, the concentrations detected were low ($\leq$ 20 µg/L), and did not exceed the applicable MCL. Similarly, pesticides were not detected within treated water from the Bryte Bend WTP.

The primary water quality constituents of concern in the untreated Sacramento River water were turbidity and TOC, and only turbidity exceeded the State Primary MCL. EDCs and PCPPs are not commonly measured constituents, and have not been measured by the City of West Sacramento at the Bryte Bend WTP. It is therefore unknown to what extent EDCs and PCPPs would be present within treated Sacramento River water. However, because the three EDC/PCPP compounds that have been detected in untreated water in the Sacramento River were at levels far below their effective doses (Table 3B.11-3), their effects on public health would be very limited, if any. The issue of emerging contaminants in drinking water has received increasing attention nationally; however, given that these constituents are not routinely tested and, that even if they were, there is no formal Federal or state standard for the City to consider the data against.

The concentrations of other non-regulated chemical compounds, including agricultural, industrial, and urban-related pollutants, remain largely unknown. It is also unknown to what extent these chemicals could affect human

health. However, treated Sacramento River water from the Bryte Bend WTP does not exceed any MCLs. Therefore, adverse impacts to public health and safety resulting from the introduction of a new drinking water supply source are not anticipated to occur. This **indirect** impact is considered **less than significant**. **No direct** impact would occur. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

IMPACT 3B.8-4 Use of Hazardous Materials within One-Quarter Mile of Schools. *Operation of the Off-site Water Facilities could emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.*

NCP, PA, 1, and 1A

The proposed WTP site under these alternatives would be sited to the south of White Rock Road and would be located over 3/4 mile to the south of an elementary school and Country Day School planned within the southern portion of the SPA. Similarly, the On-site WTP would be sited according to the requirements of the Folsom Specific Plan, which is required to comply with state law. Likewise, the conveyance pipeline alignment under these alternatives would not be constructed within a quarter mile of an existing or planned school facility. Based on these findings, **no direct** or **indirect** impacts associated with the handling of hazards or acutely hazardous materials, substances, or wastes near a school would occur under these alternatives. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

2, 2A, 2B, 3, and 3A

Under these alternatives, the City would either construct a new WTP at the same location as the White Rock WTP or purchase capacity within the Vineyard WTP. **No direct** or **indirect** impact would be expected in relation to water treatment facilities for any of these alternatives.

In relation to the conveyance pipeline alignments for these alternatives, the portion of the alignments along Douglas Road would be constructed within one quarter of a mile of the Sunrise Elementary School. Additionally, the conveyance pipeline alignments for Off-site Water Facility Alternatives 2A and 3A would pass within a quarter mile of the Mather Youth Academy and Mather Heights Elementary Schools along Excelsior Road. As previously indicated in Impact 3B.8-1, construction activities would involve the routine use of fuels, oils, and solvents which could be accidentally spilled or released from containment. Although unlikely, if any of these materials were accidentally released, they could pose a hazard to the nearby school. Therefore, this **indirect** impact is considered **potentially significant**. **No direct** impact would occur. ***[Greater]***

Mitigation Measure: Implement Mitigation Measure 3B.8-1a and 3B.8-1b.

4 and 4A

Under Off-site Water Facility Alternatives 4 and 4A, the WTP would be located at a location south of Folsom Boulevard, east of Sunrise Boulevard. No existing or planned educational facilities are located within a quarter mile of the Folsom Boulevard WTP site. Therefore, **no direct** or **indirect** impact from the WTP would occur. ***[Similar]***

Off-site Water Facility Alternative 4A would follow the same initial route as Off-site Water Facility Alternative 2A and 3A, and therefore, carries the potential to release hazardous materials or substances during construction within 1/4 mile of the Mather Youth Academy and Mather Heights Elementary Schools. Therefore, this **indirect** impact is considered **potentially significant**. **No direct** impact would occur. ***[Greater]***

Mitigation Measure: Implement Mitigation Measure 3B.8-1a and 3B.8-1b.

Implementation of Mitigation Measures 3B.8-1a and 3B.8-1b would reduce potentially significant impacts under Off-site Water Facility Alternatives 2, 2A, 3, 3A, and 4A to a **less-than-significant** level by ensuring the transport, storage, and use of construction-related hazardous materials complies with applicable Federal, state, and local regulations.

IMPACT 3B.8-5 Create a Significant Hazard to the Public or the Environment. *Construction of the Off-site Water Facilities could encounter one or more sites listed as containing hazardous materials or wastes and, as a result, could create a significant hazard to the public or the environment.*

NCP, PA, 1, and 1A

The Off-site Water Facility Alternatives 1 and 1A would be constructed in a rural portion of the County where the conveyance pipeline alignment would not directly cross a site which is known to be included on a list of hazardous materials sites compiled pursuant to California Government Code Section 65962.5 (TrackInfo Services 2008). As indicated in Table 3B.8-1, six listed sites were identified within a quarter-mile of the alignment in the database search; however, these sites are located at a sufficient distance (e.g., greater than 100 feet) away from the actual roadway where construction activities would occur. Nonetheless, as Off-site Water Facilities construction commences, it is possible that contaminated soil or groundwater could be encountered during excavation thereby posing a health threat to construction workers, the public, and the environment. Therefore, this **indirect** impact is considered **potentially significant**. **No direct** impact would occur. ***[Similar]***

Mitigation Measure 3B.8-5a: Conduct Phase 1 Environmental Site Assessment for Selected Alignment.

Prior to construction, the City shall conduct a Phase 1 Environmental Site Assessment according to American Society for Testing and Materials (ASTM) protocol for the selected conveyance pipeline alignment, pump station, well, and WTP site. If any hazardous materials or waste sites are identified during the Phase 1 Environmental Site Assessment, the City shall implement Mitigation Measure 3.8-5b.

Implementation: City of Folsom Utilities Department

Timing: Prior to construction of all Off-site Water Facilities

Enforcement:

1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For the off-site water facilities constructed within Sacramento County or the City of Rancho Cordova: Sacramento County Environmental Management Department.
3. Other regulatory agencies, such as California Department of Toxic Substances Control, or Central Valley Regional Water Quality Control Board, as appropriate

Mitigation Measure 3B.8-5b: Develop and Implement a Remediation Plan.

If determined necessary to mitigate for potential hazards resulting from disturbance of existing contaminated areas based on the results of the Phase 1 Environmental Site Assessment, the extent of contamination from hazardous materials sites within or adjacent to the Off-site Water Facilities construction area shall be delineated during final design. Disturbance to contaminated areas during Off-site Water Facilities construction shall be avoided, or any work done within contaminated areas shall be undertaken in compliance with standards approved by the DTSC or Sacramento County Department of

Environmental Health to ensure that hazardous materials will not be released as a result of the ground disturbance.

Additionally, if unidentified contaminated soil or groundwater are encountered, or if suspected contamination is encountered during any construction activities, work shall be halted in the area of potential exposure, and the type and extent of contamination shall be identified. A qualified professional, in consultation with appropriate regulatory agencies, will then develop and implement a plan to remediate the contamination and properly dispose of the contaminated material.

Implementation: City of Folsom Utilities Department

Timing: Prior to construction of all Off-site Water Facilities

Enforcement:

1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.

2. For the off-site water facilities constructed within Sacramento County or the City of Rancho Cordova: Sacramento County Environmental Management Department.

3. Other regulatory agencies, such as California Department of Toxic Substances Control, or Central Valley Regional Water Quality Control Board, as appropriate

2, 2A, 2B, 3, 3A, 4, and 4A

Construction of the conveyance pipelines under each of these alternatives would involve excavation, soil stockpiling, grading, installation of the pipelines, and backfilling. These alternatives would be constructed in urbanizing portions of Rancho Cordova and along developing roadway corridors. Various forms of soil and groundwater contamination have been documented along portions of Florin, Excelsior, and Douglas Roads, Sunrise Boulevard, and Folsom Boulevard. Table 3B.8-1 provides a summary of the listed sites for each alternative. The types of contamination along these roadways range from minor spills of gasoline or diesel to more extensive spills of industrial chemicals, including PAHs, polychlorinated by-phenols (PCBs), and VOCs. In addition, agricultural uses of Sunrise Avenue and, Douglas Boulevard could have also resulted in soil or groundwater contamination from pesticides or other chemicals extending beneath the portions of the construction area.

If contaminated soil and groundwater were encountered without taking proper precautions, construction workers could be exposed to hazards that would potentially cause significant adverse health effects. Further, dewatering during construction would lead to extraction of contaminated groundwater. The quality of the groundwater would pose a concern if the water were discharged into a storm drain, sanitary sewer system, or surface water without treatment. Section 3B.17, "Groundwater Resources – Water," provides a further discussion of discharged groundwater. Human health risks include exposure of on-site workers to chemicals in surface soil through incidental contact with the skin, ingestion of soil, inhalation of soil particles, or fumes during construction activities at contaminated sites, or adjacent property occupants or trespassers who come in contact with contaminated soil. This would be a **potentially significant indirect** impact. **No direct** impact would occur. ***[Similar]***

Mitigation Measure: Implement Mitigation Measures 3B.8-5a and 3B.8-5b.

Implementation of Mitigation Measures 3B.8-5a and 3B.8-5b would reduce potentially significant impacts associated with the accidental discovery of hazardous materials or wastes under the No USACE Permit Alternative, Proposed Off-site Water Facility Alternative, and Off-site Water Facility Alternatives 1, 1A, 2, 2A,

2B, 3, 3A, 4, and 4A to a **less-than-significant** level through preparation of an environmental site assessment and development and implementation of a remediation plan, where appropriate.

IMPACT 3B.8-6 Impair or Interfere with an Adopted Emergency Response Plans or Emergency Evacuation Plans. *Implementation of the Off-site Water Facilities would impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.*

NCP, PA 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A

The Sacramento Metropolitan Fire District provides fire protection and emergency medical services to 417 square miles of Sacramento County, including the Off-site Water Facilities Study Area. The closest fire stations to Zone 4 of the "Water" Study Area are Stations 63 and 58. Station 63 is located in the northern portion of Zone 4 within the "Water" Study Area at 12395 Folsom Boulevard in the City of Rancho Cordova. Station 58 is located just south of Zone 4 of the "Water" Study Area at 7250 Sloughhouse Road in the community of Sloughhouse. Both stations serve as typical response teams with equipment and staffing for two engines, one ladder truck, and seven firefighters, including one battalion chief. Each fire station also provides emergency medical service personnel. Additionally, the City's Fire Department acts as a mutual aid responder for incidents within the northern portion of Zone 4 of the "Water" Study Area.

According to the County's General Plan, the targeted response time is five minutes for fire and emergency response. The long-term operation of the Off-site Water Facilities is not expected to involve any activities that would interfere with existing response times or emergency response plans in place through the California OES and Sacramento County. However, during construction of the Off-site Water Facilities, construction activities could block access to nearby residences for emergency vehicles or result in temporary blockages thereby increasing emergency response times. In most instances, construction equipment could be moved relatively quickly to facilitate the necessary emergency vehicle movements. Based on these considerations, implementation of the No USACE Permit Alternative, Proposed Off-site Water Facility Alternative, and Off-site Water Facility Alternatives 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A are not expected to involve any activities that would permanently or substantially interfere with emergency response plans or evacuation plans in place through the California OES or Sacramento County. This **direct** impact is considered **less than significant**. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

IMPACT 3B.8-7 Exposure to Wildland Fire Hazards. *Implementation of the Off-site Water Facilities could expose people or structures to a significant risk of loss, injury or death involving wildland fires.*

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A

Zone 4 of the "Water" Study Area is located in a local responsibility area where the risk of grassland wildfires is moderate. Construction activities, including welding, vehicle refueling, and pipeline installation would occur in close proximity to areas containing dried vegetation or other materials that could serve as fire fuel. Any construction equipment that normally includes a spark arrester would be equipped with an arrester in good working order. Nonetheless, the potential for construction equipment and vehicles to come in contact with heavily vegetated areas, thereby igniting dry vegetation. This is a **potentially significant, direct** impact. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure 3B.8-7a: Keep Construction Area Clear of Combustible Materials.

The City shall ensure, through the enforcement of contractual obligations that during construction, staging areas, welding areas, or areas slated for development using spark-producing equipment shall be cleared of dried vegetation or other materials that could serve as fire fuel. The contractor shall keep these areas clear of combustible materials in order to maintain a firebreak. Any construction equipment that normally includes a spark arrester shall be equipped with an arrester in good working order. This includes, but is not limited to, vehicles, heavy equipment, and chainsaws.

Implementation: City of Folsom Utilities Department

Timing: Prior to construction and operation of all Off-site Water Facilities

Enforcement:
1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For the off-site water facilities constructed within Sacramento County or the City of Rancho Cordova: Sacramento County Fire Department

Mitigation Measure 3B.8-7b: Provide Accessible Fire Suppression Equipment.

Work crews shall be required to carry or have sufficient fire suppression equipment to ensure that any fire resulting from construction activities is immediately extinguished. All off-road equipment using internal combustion engines shall be equipped with spark arrestors.

Implementation: City of Folsom Utilities Department

Timing: Prior to construction and operation of all Off-site Water Facilities

Enforcement:
1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For the off-site water facilities constructed within Sacramento County or the City of Rancho Cordova: Sacramento County Fire Department.

Implementation of Mitigation Measures 3B.8-7a and 3B.8-7b would reduce impacts associated with wildland fire hazards under the No USACE Permit Alternative, Proposed Off-site Water Facility Alternative, and Off-site Water Facility Alternatives 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A to a **less-than-significant** level by requiring that construction areas are cleared of combustible materials and ensuring access to fire suppression equipment.

3B.8.4 RESIDUAL SIGNIFICANT IMPACTS

With the implementation of mitigation, the Off-site Water Facility Alternatives would not result in any residual significant and unavoidable impacts related to risks of upset or accidental release of hazards and hazardous materials. Similarly, with mitigation impacts related to the potential for wildland fires during construction would be minimized to a less-than-significant level. The use of surface water from the Sacramento River for use as a potable water supply within the SPA would not create a public hazard and impacts resulting from the use of this supply are considered less than significant. Therefore, project implementation would not result in any residual significant impacts related to hazards and hazardous materials.

3A.9 HYDROLOGY AND WATER QUALITY – LAND

3A.9.1 AFFECTED ENVIRONMENT

REGIONAL HYDROLOGY

The SPA is located at the eastern edge of the Sacramento River Hydrologic Region, and consists of gently rolling hills covered with grasslands, oak woodlands, and areas of riparian forest and scrub. The far eastern portion of the SPA, east of Empire Ranch Road, extends into San Joaquin Hydrologic Region. Alder Creek and its tributaries, and other natural seasonal drainages are present throughout the site. Shallow soils and little groundwater render the site incapable of supporting full-scale agricultural operations. As a result, the SPA has historically been (and is currently) used for cattle grazing purposes. The SPA is currently zoned for agricultural use by Sacramento County.

The topography of the SPA consists of gently rolling terrain located at the base of the Sierra Nevada foothills between Placerville Road on the east, U.S. Highway 50 (U.S. 50) on the north, White Rock Road on the south, and Prairie City Road on the west. Elevations vary from 440 feet above sea level in the western portion of the SPA to 800 feet in the eastern hillside. The majority of slopes within this region range between 0% and 15%, however, some isolated steeper slopes exist along the edges of Alder Creek and its associated tributaries.

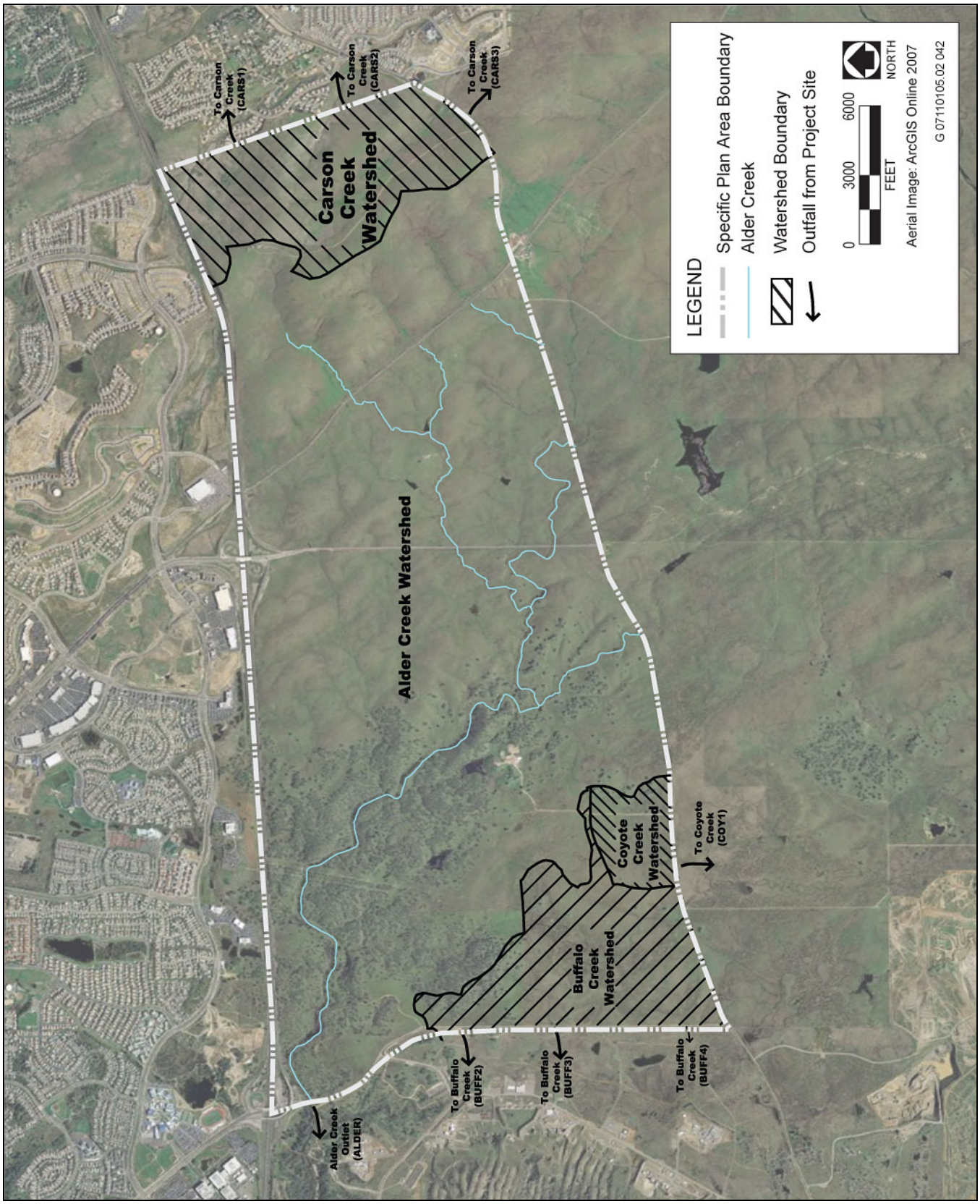
The climate in the region is Mediterranean, characterized by hot, dry summers, and cool, moist winters. Slightly over half of the total average annual precipitation of 23 to 26 inches occurs from November through February (City and County of Sacramento 1996:4-10). During this period, measurable quantities of precipitation occur about 10 days out of every month. Thunderstorms are rare, and when they do occur it is usually in the fall, late spring, or late summer. Temperatures in July vary from an approximate average daily high of 94 degrees Fahrenheit (°F) to an average daily low of 60°F, while temperatures in January vary from an approximate average daily high of 54°F to an average daily low of 40°F. Extreme temperatures in Sacramento County have been recorded as low as 17°F in December 1932 and as high as 114°F in July 1925 (Bevan and Cline 2005:1–5).

LOCAL SURFACE WATER HYDROLOGY

The SPA lies within four separate watersheds: Alder Creek, Buffalo Creek, Coyote Creek, and Carson Creek (Exhibit 3A.9-1). Alder Creek and Buffalo Creek are tributaries to the American River; Coyote Creek and Carson Creek are tributaries to the Cosumnes River. Several irrigation/cattle water ponds exist on the SPA. These ponds are generally on-stream impoundments and appear to contain water throughout the year.

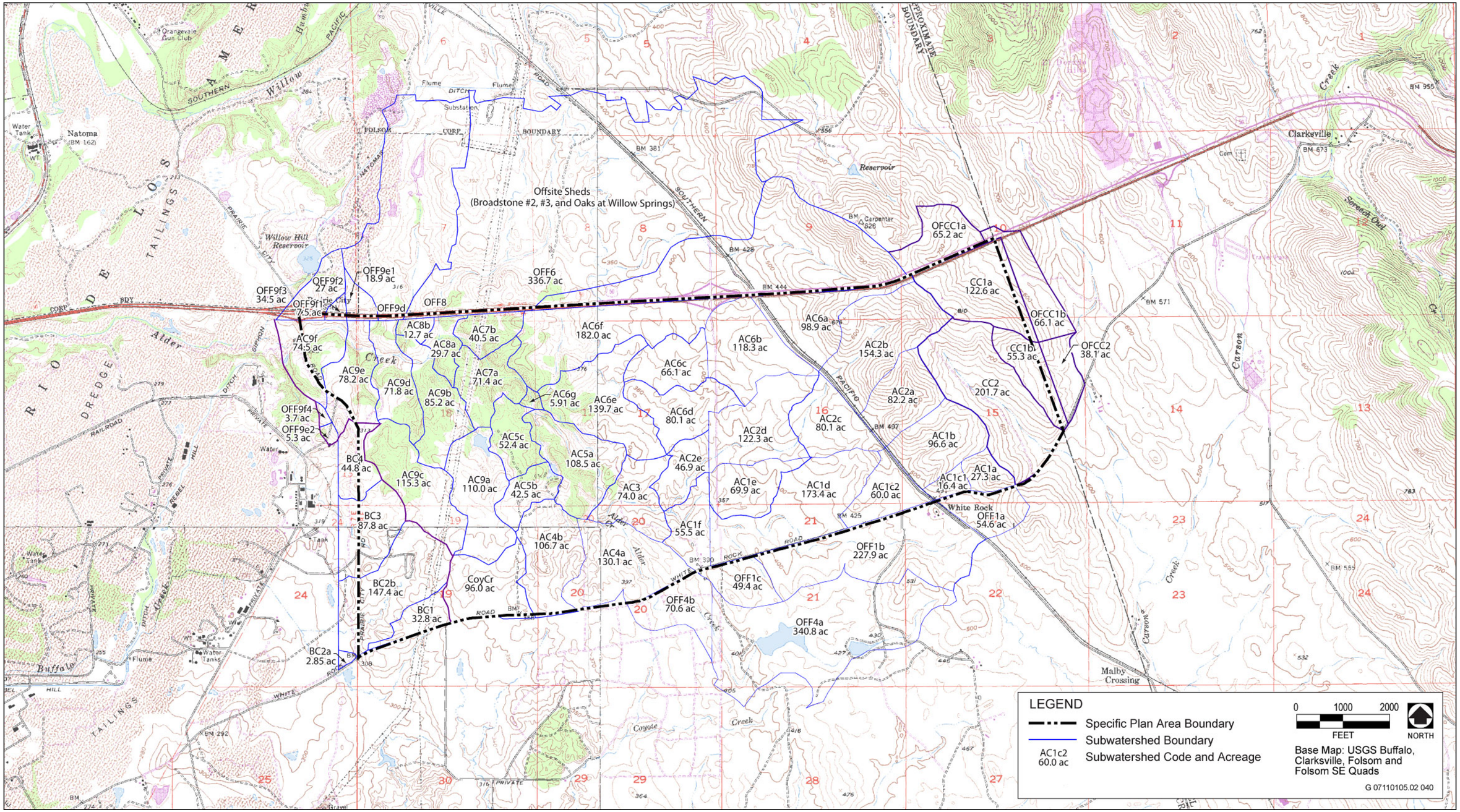
The majority of the runoff from the SPA originates within the Alder Creek watershed. Alder Creek and its tributaries generally flow east to west and eventually join the American River three miles west of Prairie City Road at Lake Natoma. The headwater tributaries of Alder Creek can generally be characterized as ephemeral and intermittent. Off-site tributary subwatersheds also contribute flow to Alder Creek, including areas where the recent Broadstone and Willow Springs developments are located north of U.S. 50. These tributaries are generally characterized as having perennial flows due to the developed nature of their respective subwatershed areas. As a result, flows in the Alder Creek mainstem within the SPA, transition from ephemeral to perennial with inputs from the tributaries originating in the developed areas north of U.S. 50.

In addition to the Alder Creek watershed, there are three small subbasins within the boundary of the SPA that contribute flow to neighboring creeks, as shown on Exhibit 3A.9-2. Runoff from the southwest corner of the SPA flows across Prairie City Road and eventually joins Buffalo Creek. An area along the southern boundary of the SPA drains off-site to Coyote Creek. Lastly, runoff from the east side of the SPA drains off-site to Carson Creek in El Dorado County (MacKay & Somps 2007:4).



Source: Domenichelli & Associates 2007

Project Site Watershed and Outfall Locations **Exhibit 3A.9-1**



Source: Domenichelli & Associates Civil Engineering, 2007

On- and Off-Site Subwatersheds **Exhibit 3A.9-2**

Existing surface flow data is generally lacking for the creeks within the SPA due to the lack of flow gaging stations or other hydrologic data collection facilities. As a result, flows were modeled based on procedures outlined in the Sacramento City/County Drainage Manual (Sacramento County 1996; MacKay & Somps 2007). Methodology from this manual was used to develop a HEC-HMS (version 3.1.0) model for the project to determine the peak flows for the 2-year, 5-year, 10-year, and 100-year 24-hour design storms. For modeling purposes, the SPA was delineated into subwatershed basins with a total of eight associated outfall locations where water leaves the boundaries of the SPA (MacKay & Somps 2007 [Figure 7]). As discussed above, the Alder Creek watershed, with one main outfall location, is the primary watershed in the SPA. Upper Buffalo Creek is located along the west project boundary on the east side of Prairie City Road. There are two main and one minor outlet locations from the SPA into the Buffalo Creek watershed. Coyote Creek watershed begins within the southwest project boundary. Runoff leaves this watershed at one location. A portion of the Carson Creek watershed is located on the east side of the SPA. There are four onsite subbasins and two off-site subbasins of Carson Creek in the SPA model. The Carson Creek watershed has three outfall locations from the SPA. All outfall locations are shown on Exhibit 3.9-1. Existing flows were determined using the HEC-HMS model at these locations for comparison to proposed conditions results. A primary objective is to maintain proposed conditions flows at or below the existing peak flows at these locations (MacKay & Somps 2007:12). Hydrologic modeling and associated results are described in detail under the "Environmental Consequences and Mitigation Measures" section below.

The SPA, encompassing portions of the Federal Emergency Management Agency (FEMA; see additional discussion below) Flood Insurance Rate Maps (FIRM) number 060262 panels 0120D, 0150B, 0250C, and 0275D, has been designated as Zone X, areas that have been determined to be outside the 100- and 500-year floodplains; however, the SPA has not been studied for the purpose of drafting an effective Flood Insurance Study (FIS). The California Department of Water Resources (DWR), under the Awareness Flood Mapping Program, has recently prepared area floodplain maps. The area along Alder Creek flowing through the SPA has been designated by DWR as lying within a 100-year floodplain (see Exhibit 3.9-3). Waterways within the SPA have not been studied in order to define a 200-year floodplain by California Water Code Section 9610(a) (DWR 2008).

GROUNDWATER HYDROLOGY

Most of the SPA lies over the Sierra Nevada hydrogeologic province, an undefined groundwater basin, with the exception of the South American groundwater basin in the western portion of the SPA underlying the Buffalo Creek watershed (DWR 2003:156-158). Only a relatively small portion of the land area of Sacramento County and the southeastern edge of El Dorado County is underlain by geologic materials with sufficient area extent, depth, and infiltration capability to provide natural groundwater recharge. These areas occur mostly along active stream channels. Most of the stream channel deposits in Sacramento County and the southeastern edge El Dorado County occur along the courses of the Cosumnes and American Rivers. In the project vicinity, the low permeability of soils containing hardpan or organic clays inhibits infiltration and the area has a poor capacity for significant groundwater recharge (Sacramento County 2007b: 8-9). Groundwater volumes typically vary locally throughout the SPA. Seasonal perched groundwater may be present in the fractures of the weathered bedrock found beneath the SPA at varying times of the year, as evidenced by the presence of vernal pools (Youngdahl Consulting Group Ltd 2003:2–3).

The South American Subbasin aquifer system, part of the larger Sacramento Valley Groundwater Basin, comprises continental deposits of Late Tertiary to Quaternary age. These deposits include younger alluvium (consisting of flood basin deposits, dredge tailings, and Holocene stream channel deposits), older alluvium including the Laguna Formation, and Miocene/Pliocene volcanics consisting of the Mehrten Formation. The cumulative thickness of these deposits increases from a few hundred feet at the SPA to over 2,500 feet along the western margin of the subbasin. The subbasin is bounded on the east by the Sierra Nevada, on the west by the Sacramento River, on the north by the American River, and on the south by the Cosumnes and Mokelumne Rivers. These perennial rivers generally create a groundwater divide in the shallow subsurface, and the

groundwater of adjacent subbasins interacts at greater depths. The Mehrten and Laguna Formations are the principal water-bearing rock strata (DWR 2004:1).

WATER QUALITY

Surface Water

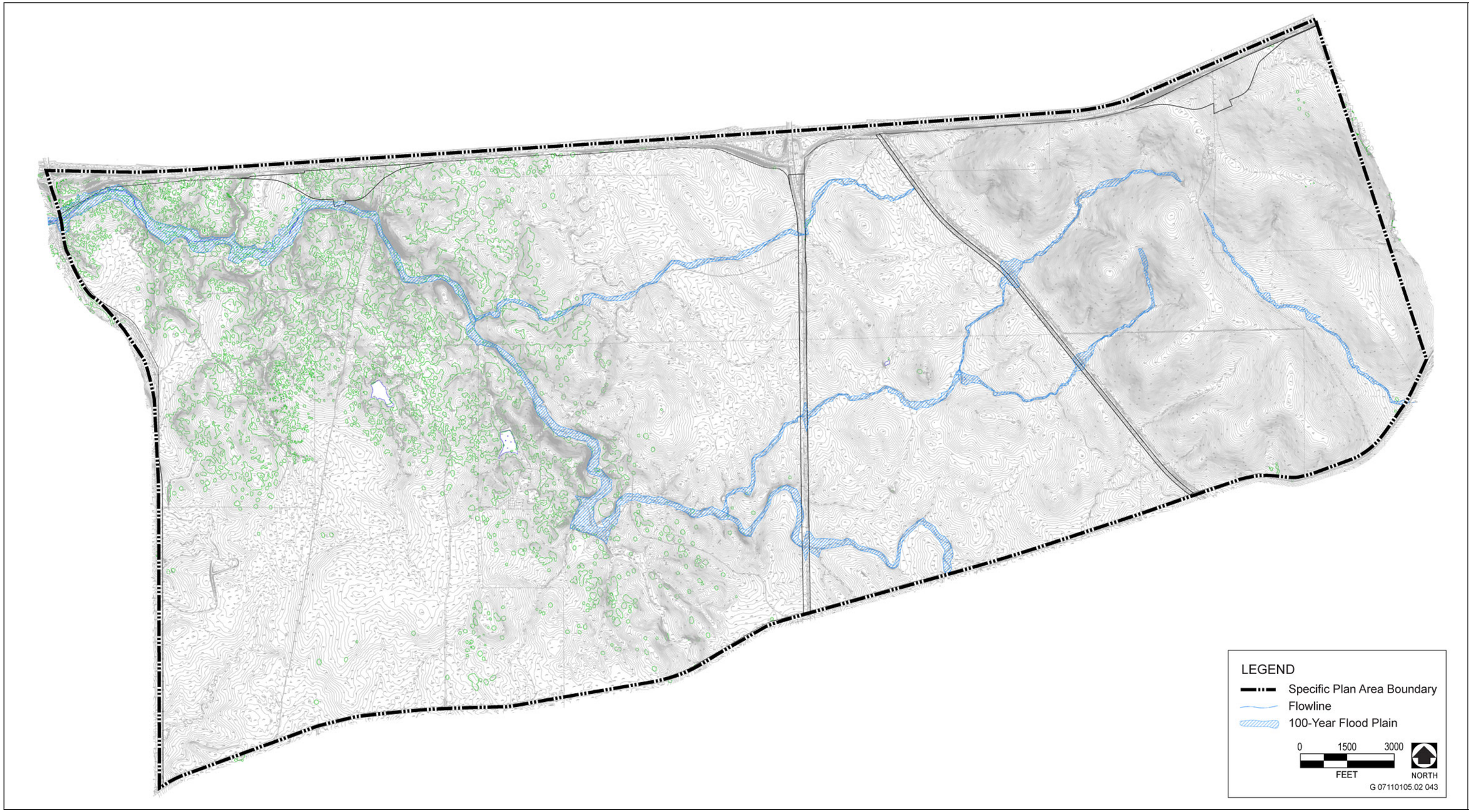
Alder Creek, Buffalo Creek, Coyote Creek, and Carson Creek do not currently have any specific designated beneficial uses attributed to them in the water-quality control plan (Basin Plan) adopted by the Central Valley Regional Water Quality Control Board (RWQCB) (described in the "Regulatory Framework" section below). Consequently, the Central Valley RWQCB applies the Basin Plan's "tributary rule" and assigns to these creeks the beneficial uses designated for the nearest downstream location. The Central Valley RWQCB also regulates waste discharges in undesignated streams to ensure that downstream water quality conditions and beneficial uses are not degraded. Thus, these creeks are subject to regulation for the existing designated uses in their receiving waterbodies. Designated beneficial uses for the American River, Lake Natoma, and Cosumnes River and their tributaries as defined by the Basin Plan (Central Valley RWQCB 2007) are:

- municipal, industrial, and agricultural supply;
- irrigation;
- contact and noncontact recreation;
- coldwater fish habitat, migration, and spawning;
- warmwater fish habitat, migration, and spawning;
- wildlife habitat;
- power generation; and
- navigation.

The segment of the American River that is the receiving water for the Alder Creek and Buffalo Creek watersheds is on the 303(d) list for mercury from resource extraction (Lake Natoma and Lower American River), and unknown toxicity (Lower American River). The segment of the Cosumnes River that is the receiving water for the Coyote Creek and Carson Creek watersheds is on the 303(d) list for Exotic Species (State Water Resource Control Board [SWRCB] 2007).

There is no comprehensive water quality monitoring station in the project vicinity, and water quality data are limited. Monitoring of water quality in the American River at Nimbus Dam is performed as part of the Sacramento Stormwater Quality Partnership (SSQP) Joint Program to comply with monitoring requirements specified in the Sacramento Municipal Separate Storm Sewer System National Pollutant Discharge Elimination System (NPDES) Stormwater Permit, and as described in the SSQP's Stormwater Quality Improvement Plan (SQIP; see below for additional information) (SSQP 2009a). Monitoring activities required by the permit included urban runoff (discharge) characterization, receiving water, urban tributary (creek), bioassessment, and additional pesticide monitoring including Diazinon and Chlorpyrifos.

For the 2006/2007 monitoring years, the American River at Nimbus Dam station (a location below the confluence of Alder Creek that is influenced by other upstream sources) showed a low level of dissolved oxygen in the December 10, 2006 sampling event (6.3 milligrams per liter [mg/L]), that was below the water quality objective of 7 mg/L for coldwater spawning and a pH of 6.2, that was below the Basin Plan range of 6.5 to 7.5. No other exceedances of water quality objectives were reported (SSQP 2007c:vol. 1-9). For the 2007/2008 monitoring year, the American River at Nimbus Dam station showed exceedances for *E. coli* (800 mpn/100 ml, above objective of 235 mpn/100 ml), fecal coliform (800 mpn/100 ml, above objective of 400 mpn/100 ml), total aluminum (951 and 528 mg/L, above objective of 200 mg/L), and dissolved lead (815 mg/L, above objective of 300 mg/L). No other exceedances of water quality objectives were reported (SSQP 2008:vol. 1-9). For the 2008/2009 monitoring year, the latest year available, the American River at Nimbus Dam station showed a single



Source: ECORP Consultants 2009

Existing 100-Year Floodplain **Exhibit 3A.9-3**

exceedance for fecal coliform (500 mpn/100 ml, above objective of 400 mpn/ 100 ml). No other exceedances of water quality objectives were reported (SSQP 2009b:2-16).

A history of gold mining in the area, and the use of mercury to process gold-bearing ore appears to be the cause of mercury in the American River watershed. Gold-dredging operations and operators of floating dredgers coated the sluices with mercury to amalgamate the gold particles, occasionally spilling the mercury into the surrounding environment.

Mercury can exist in many forms, most of which are stable and unavailable for biological uptake. However, inorganic mercury can be methylated by microbes and fungi into an organic form known as methylmercury (Baudo et al 1990, Domagalski et al 2000). Fish take in some methylmercury through their gills, but most of their intake is through their food. Once consumed by fish, methylmercury is retained in the fatty tissue and bioaccumulates so that older and larger fish contain a higher concentration of methylmercury than younger or smaller fish. Fish that predate on other fish tend to have higher concentrations of methylmercury than fish feeding at lower levels of the food chain. Humans who consume these fish are vulnerable to bioaccumulating methylmercury at levels potentially harmful to health. Methylmercury mainly attacks the nervous system causing loss of sensation in the extremities, tiredness, and blurred vision (Office of Environmental Health Hazard Assessment [OEHHA] 2004). The California Department of Health Services (undated brochure) recommends that pregnant and breast-feeding women eat no more than 0.5 pound (uncooked weight) of fish per week from freshwater sources in California. Children less than 6 years old are recommended to eat no more than 3 ounces of freshwater fish per week.

The U.S. Geological Survey (USGS) and the University of California at Davis (UCD) conducted a reconnaissance survey of mercury contamination in edible fish tissue taken from several sites in Lake Natoma, including the vicinity of the mouth of Alder Creek. These data were evaluated by the Office of Environmental Health Hazard Assessment, together with fish samples previously collected from the lower American River by the Toxic Substances Monitoring Program (TSMP) and the Sacramento River Watershed Program (SRWP), in an effort to determine whether there may be potential adverse health effects associated with consuming sport fish from these water bodies. Results from the study showed that elevated concentrations of mercury were found in fish tissues samples at high enough levels to warrant the publishing of a health advisory and fish consumption guidelines for Lake Natoma (including nearby creeks and ponds) and the lower American River (OEHHA 2004).

Groundwater

Groundwater underlying Area 40 at the western boundary of the SPA is contaminated with volatile organic compounds (VOCs) as a result of activities associated with the aerospace industry, in particular trichloroethene (TCE) and tetrachloroethene (PCE). As a result of this contamination, groundwater at the SPA may not be employed for beneficial uses, and under Proposed Project plans buildings for human occupancy would be restricted from areas overlying groundwater VOC contamination. Additional detail regarding groundwater contamination at the SPA is provided in Section 3A.8, “Hazards and Hazardous Materials - Land.”

3A.9.2 REGULATORY FRAMEWORK

Numerous Federal, state, regional, and local laws, rules, regulations, plans, and policies define the framework for regulating hydrology and water quality in the SPA and surrounding area. The following discussion focuses on hydrology and water quality requirements applicable to the project.

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Federal Clean Water Act

The Environmental Protection Agency (EPA) is the lead Federal agency responsible for managing water quality. The Clean Water Act (CWA) of 1972 is the primary Federal law that governs and authorizes EPA and the states to implement activities to control water quality. The various elements of the CWA that address water quality and are applicable to the project are discussed below. Wetland protection elements administered by the U.S. Army Corps of Engineers (USACE) under Section 404 of the CWA, including permits for the discharge of dredged and/or fill material into waters of the U.S., are discussed in Chapter 3A.4, "Biological Resources – Land."

Water Quality Criteria and Standards

Under Federal law, EPA has published water quality regulations under Volume 40 of the Code of Federal Regulations. Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the U.S. As defined by the CWA, water quality standards consist of two elements: (1) designated beneficial uses of the water body in question and (2) criteria that protect the designated uses. Section 304(a) requires EPA to publish advisory water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality standards must protect the most sensitive use. EPA is the Federal agency with primary authority for implementing regulations adopted under the CWA. EPA has delegated the State of California as the authority to implement and oversee most of the programs authorized or adopted for CWA compliance through the Porter-Cologne Water Quality Control Act of 1969 (Porter-Cologne Act), described below.

National Pollutant Discharge Elimination System Permit Program

The NPDES permit program was established in the CWA to regulate municipal and industrial discharges to surface waters of the U.S. A discharge from any point source is unlawful unless the discharge is in compliance with an NPDES permit. Federal NPDES permit regulations have been established for broad categories of discharges, including point-source municipal waste discharges and nonpoint-source stormwater runoff. NPDES permits generally identify effluent and receiving water limits on allowable concentrations and/or mass emissions of pollutants contained in the discharge; prohibitions on discharges not specifically allowed under the permit; and provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, and other activities.

In November 1990, EPA published regulations establishing NPDES permit requirements for municipal and industrial stormwater discharges. Phase 1 of the permitting program applied to municipal discharges of stormwater in urban areas where the population exceeded 100,000 persons. Phase 1 also applied to stormwater discharges from a large variety of industrial activities, including general construction activity if the project would disturb more than 5 acres. Phase 2 of the NPDES stormwater permit regulations, which became effective in March 2003, required that NPDES permits be issued for construction activity for projects that disturb 1 acre or more. Phase 2 of the municipal permit system (known as the NPDES General Permit for Small Municipal Separate Storm Sewer Systems [MS4s]) required small municipal areas of less than 100,000 persons to develop stormwater management programs. The nine RWQCBs in California are responsible for implementing the NPDES permit system (see additional information below).

Section 401 Water Quality Certification or Waiver

Under Section 401 of the CWA, an applicant for a Section 404 permit (to discharge dredged or fill material into waters of the U.S.) must first obtain a certificate from the appropriate state agency stating that the fill is consistent with the state's water quality standards and criteria. In California, the authority to either grant water quality certification or waive the requirement is delegated by the SWRCB to the nine RWQCBs. The Proposed Project

Alternative would require a Section 401 water quality certification because it would require a Section 404 permit and is under the jurisdiction of the Central Valley RWQCB.

Antidegradation Policy

The Federal antidegradation policy, established in 1968, is designed to protect existing uses, water quality, and national water resources. The Federal policy directs states to adopt a statewide policy that includes the following primary provisions:

- Existing in-stream uses and the water quality necessary to protect those uses shall be maintained and protected.
- Where existing water quality is better than necessary to support fishing and swimming conditions, that quality shall be maintained and protected unless the state finds that allowing lower water quality is necessary for important local economic or social development.
- Where high-quality waters constitute an outstanding national resource, such as waters of national and state parks, wildlife refuges, and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

Safe Drinking Water Act

Under the Safe Drinking Water Act (Public Law 93-523), passed in 1974, EPA regulates contaminants of concern to domestic water supply. Contaminants of concern relevant to domestic water supply are defined as those that pose a public health threat or that alter the aesthetic acceptability of the water. These types of contaminants are regulated by EPA's primary and secondary maximum contaminant levels (MCLs), which are applicable to treated water supplies delivered to the distribution system. MCLs and the process for setting these standards are reviewed triennially. Amendments to the Safe Drinking Water Act enacted in 1986 established an accelerated schedule for setting MCLs for drinking water.

EPA has delegated to the California Department of Public Health (CDPH) the responsibility for administering California's drinking-water program. CDPH is accountable to EPA for program implementation and for adopting standards and regulations that are at least as stringent as those developed by EPA. The applicable state primary and secondary MCLs are set forth in Title 22, Division 4, Chapter 15, Article 4 of the California Code of Regulations (CCR). Provisions of the Safe Drinking Water Act would apply to water supplies being sought for the project.

Section 303(d) Impaired Waters List

Under Section 303(d) of the CWA, states are required to develop lists of water bodies that would not attain water quality objectives after implementation of required levels of treatment by point-source dischargers (municipalities and industries). Alder Creek is not on the 303(d) list, but the receiving water bodies for Alder, Buffalo, Carson, and Coyote Creeks—Lower American River, Lake Natoma, and the Cosumnes River—are listed (see "Water Quality" section below). Section 303(d) requires that the state develop a total maximum daily load (TMDL) for each of the listed pollutants. The TMDL is the amount of loading that the water body can receive and still be in compliance with water quality objectives. The TMDL can also act as a plan to reduce loading of a specific pollutant from various sources to achieve compliance with water quality objectives. The TMDL prepared by the state must include an allocation of allowable loadings to point and nonpoint sources, with consideration of background loadings and a margin of safety. The TMDL must also include an analysis that shows links between loading reductions and the attainment of water quality objectives. The EPA must either approve a TMDL prepared by the state or, if it disapproves the state's TMDL, issue its own. NPDES permit limits for listed pollutants must be consistent with the waste load allocation prescribed in the TMDL. After implementation of the

TMDL, it is anticipated that the problems that led to placement of a given pollutant on the Section 303(d) list would be remediated.

Federal Emergency Management Agency

FEMA administers the National Flood Insurance Program to provide subsidized flood insurance to communities that comply with FEMA regulations that limit development in floodplains. FEMA also issues FIRMs that identify which land areas are subject to flooding. These maps provide flood information and identify flood hazard zones in the community. The design standard for flood protection covered by the FIRMs is established by FEMA, with the minimum level of flood protection for new development determined to be the 1-in-100 (0.01 annual exceedance probability [AEP]) (i.e., the 100-year flood event). As developments are proposed and constructed FEMA is also responsible for issuing revisions to FIRMs, such as Conditional Letters of Map Revision (CLOMR) and Letters of Map Revision (LOMR) through the local agencies that work with the National Flood Insurance Program. Requirements of California Senate Bill (SB) 5 regarding the 200-year flood (i.e. the 1-in-200 [0.005 AEP]) are discussed below.

U.S. Army Corps of Engineers Sacramento and San Joaquin River Basins Comprehensive Study

The Sacramento and San Joaquin River Basins Comprehensive Study is a joint effort by the Central Valley Flood Protection Board (CVFPB) (formerly the State Reclamation Board) and USACE, in coordination with Federal, state, and local agencies, groups, and organizations in California's Central Valley, to develop a comprehensive plan for flood damage reduction and environmental restoration for the Sacramento and San Joaquin River Basins. The study is a regionwide planning effort, rather than a regulatory program; however, consistency with its goals and objectives is important for any project affecting flood control in the Sacramento and San Joaquin River basins.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

In California, the SWRCB has broad authority over water-quality control issues for the state. The SWRCB is responsible for developing statewide water quality policy and exercises the powers delegated to the state by the Federal government under the CWA. Other state agencies with jurisdiction over water quality regulation in California include CDPH (for drinking-water regulations), the California Department of Pesticide Regulation, the California Department of Fish and Game (DFG), and OEHHA.

Regional authority for planning, permitting, and enforcement is delegated to the nine RWQCBs. The regional boards are required to formulate and adopt Basin Plans for all areas in the region and establish water quality objectives in the plans. California water quality objectives (or "criteria" under the Clean Water Act) are found in the Basin Plans adopted by the SWRCB and each of the nine RWQCBs. The Central Valley RWQCB is responsible for the regional area in which the SPA is located. State regulations applicable to the demonstration of adequate water supply for the future water demands resulting from implementation of the Proposed Project Alternative are addressed in Section 3A.18, "Water Supply - Land."

TITLE 22 STANDARDS

Water quality standards are enforceable limits composed of two parts: (1) the designated beneficial uses of water and (2) criteria (i.e. numeric or narrative limits) to protect those beneficial uses. Municipal and domestic supply (MUN) is among the "beneficial uses" as defined in Section 13050(f) of the Porter-Cologne Act, which defines them as uses of surface water and groundwater that must be protected against water quality degradation. Maximum contaminant levels, MCLs, are components of the drinking water standards adopted by the CDPH pursuant to the California Safe Drinking Water Act. California MCLs may be found in Title 22 of the CCR, Division 4, Chapter 15, Domestic Water Quality and Monitoring. The CDPH is responsible for Title 22 of the CCR (Article 16, Section 64449) as well, which also defines secondary drinking water standards, established primarily for reasons of consumer acceptance (i.e., taste) rather than because of health issues. Table 3A.9-1 lists

Table 3A.9-1
Surface Water and Groundwater Quality Standards of Conventional Contaminants for the Proposed Project Alternative

Constituent	Minimum Level Required for Detection[1]	Water Quality Objective (WQO) Source	WQO Value
Conventional Pollutants	mg/L [2]		
Oil and Grease	5	Basin Plan	Narrative (3)
Cyanide	0.005	Primary MCL, DPH Title 22 of CCR	150
pH	0–14	Basin Plan	6.5 to 8.5 (range)
Temperature	None	Basin Plan	Narrative (4)
Dissolved Oxygen	Sensitivity to 5 mg/L	Basin Plan	7.0
Bacteria			
Total coliform	<20 mpn/100ml	Basin Plan	Narrative (6)
Fecal coliform	<20 mpn/100ml	Basin Plan	Narrative (6)
E. coli (fresh waters)	<20 mpn/100ml	Basin Plan	Narrative (6)
General	mg/L [2]		
Total Phosphorus	0.05	--	--
Turbidity	0.1NTU	Basin Plan	Narrative (7)
Suspended Sediments	2	Basin Plan	Narrative (10)
Total Dissolved Solids	2	Secondary MCL, DPH Title 22 of CCR	500 mg/L
Total Petroleum Hydrocarbon	5	Basin Plan	Narrative (8)
Nitrate	0.1	Primary MCL, DPH Title 22 of CCR	45 mg/L (or 10 mg/L as N)
Nitrite	0.1	Primary MCL, DPH Title 22 of CCR	1 mg/L
Specific Conductance	1umho/cm	Secondary MCL, DPH Title 22 of CCR	900 µmhos/cm
Chloride	2	Secondary MCL, DPH Title 22 of CCR	250 mg/L
Fluoride	0.1	Primary MCL, DPH Title 22 of CCR	2 mg/L
Methyl tertiary butyl ether (MTBE)	1	Primary MCL, DPH Title 22 of CCR	13 µg/L
Metals	µg/L		
Aluminum	100	Primary MCL, DPH Title 22 of CCR	1000
Antimony	0.5	Primary MCL, DPH Title 22 of CCR	6
Arsenic	1	EPA Section 304(a)	10 (EPA MCL) 50 (DPH MCL)
Beryllium	0.5	Primary MCL, DPH Title 22 of CCR	4
Cadmium	0.25	Primary MCL, DPH Title 22 of CCR	5
Chromium (total)	0.5	Primary MCL, DPH Title 22 of CCR	50
Copper	0.5	Primary MCL, DPH Title 22 of CCR	1300
Iron	NA	Secondary MCL, DPH Title 22 of CCR	300
Lead	0.5	Primary MCL, DPH Title 22 of CCR	15
Manganese	NA	Secondary MCL, DPH Title 22 of CCR	50
Magnesium		EPA Section 304(a)	10 (EPA MCL) 50 (DPH MCL)

Table 3A.9-1
Surface Water and Groundwater Quality Standards of Conventional Contaminants for the Proposed Project Alternative

Constituent	Minimum Level Required for Detection(1)	Water Quality Objective (WQO) Source	WQO Value
Mercury	0.5	Primary MCL, DPH Title 22 of CCR	2
Nickel	1	Primary MCL, DPH Title 22 of CCR	100
Selenium	1	Primary MCL, DPH Title 22 of CCR	50
Silver	0.25	Secondary MCL, DPH Title 22 of CCR	100
Thallium	1	Primary MCL, DPH Title 22 of CCR	2
Zinc	1	Secondary MCL, DPH Title 22 of CCR	5000
Organophosphate Pesticides	Ng/L		
Chlorpyrifos	10.0	DFG	83 (9)
Diazinon	50.0	DFG	17 (9)
Molinate	2	Primary MCL, DPH Title 22 of CCR	20
Carbofuran	2	Primary MCL, DPH Title 22 of CCR	18
Herbicides	µg/L		
Glyphosate	5	Primary MCL, DPH Title 22 of CCR	700
2,4-D	0.02	Primary MCL, DPH Title 22 of CCR	70
2,4,5-TP-SILVEX	0.2	Primary MCL, DPH Title 22 of CCR	50

Notes:
MCL = Maximum Contaminant Level
DPH = California Department of Public Health
CCR = California Code of Regulations
DPH = California Department of Public Health
EPA = U.S. Environmental Protection Agency
WDR = Waste Discharge Requirements
mg/L = milligrams per liter (parts per million)
µg/L = micrograms per liter (parts per billion)
ng/L = nanograms per liter (parts per trillion)
NA = not applicable

[1] From the State Implementation Plan of the California Toxics Rule (SIP CTR), Appendix 4. Note that some Water Quality Objective values are lower than the Minimum Level values.
[2] Unless otherwise noted.
[3] Waters shall not contain oils, greases, waxes, or other materials in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.
[4] The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Central Valley RWQCB that such alteration in temperature does not adversely affect beneficial uses.
[5] Placeholder.
[6] The most probable number of coliform organisms over any seven-day period shall be less than 2.2MPN/100 ml. This limit would only be applicable for groundwater used for domestic or municipal supply.
[7] The 30-day average for turbidity shall not exceed the following limits:
- More than 1 Nephelometric Turbidity Units (NTUs) where natural turbidity is between 0 and 5 NTUs.
- More than 20% where natural turbidity is between 5 and 50 NTUs.
- More than 10 NTUs where natural turbidity is between 50 and 100 NTUs.
- More than 10% where natural turbidity is greater than 100 NTUs.

[8] The Central Valley RWQCB has prohibited the discharge of oil or any residuary product of petroleum to the waters of the State, except in accordance with waste discharge requirements or other provisions of Division 7, California Water Code.
[9] Aquatic Life guidance Value for 4-Day Average Concentration.
[10] Central Valley RWQCB Basin Plan Narrative Objective: Water shall not contain constituent concentrations that would cause nuisance or adversely affect beneficial uses.

Source: Central Valley RWQCB 2007a, 2007b

the Title 22 constituent standards, as well as those for the Central Valley Basin Plan above and the California Toxics Rule described below.

Drinking water MCLs are directly applicable to water supply systems "at the tap ", i.e. at the point of use by consumers in their home, office, etc., and are enforceable by CDHS. California MCLs, both Primary and Secondary, are directly applicable to groundwater and surface water resources when they are specifically referenced as water quality objectives in the pertinent Basin Plan. In such cases, MCLs become enforceable limits by the State and Regional Water Boards. When fully health protective, MCLs may also be used to interpret narrative water quality objectives prohibiting toxicity to humans in water designated as a source of drinking water (MUN) in the Basin Plan.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Act is California's statutory authority for the protection of water quality. Under the act, the state must adopt water quality policies, plans, and objectives that protect the state's waters for the use and enjoyment of the people. The act sets forth the obligations of the SWRCB and RWQCBs to adopt and periodically update Basin Plans. Basin Plans are the regional water quality control plans required by both the CWA and Porter-Cologne Act in which beneficial uses, water quality objectives, and implementation programs are established for each of the nine regions in California. The act also requires waste dischargers to notify the RWQCBs of their activities through the filing of reports of waste discharge (RWDs) and authorizes the SWRCB and RWQCBs to issue and enforce waste discharge requirements (WDRs), NPDES permits, Section 401 water quality certifications, or other approvals. The RWQCBs also have authority to issue waivers to RWDs and/or WDRs for broad categories of "low threat" discharge activities that have minimal potential for adverse water quality effects when implemented according to prescribed terms and conditions.

California State Nondegradation Policy

In 1968, as required under the Federal antidegradation policy described above, the SWRCB adopted a nondegradation policy aimed at maintaining high quality for waters in California. The nondegradation policy states that the disposal of wastes into state waters shall be regulated to achieve the highest water quality consistent with maximum benefit to the people of the state and to promote the peace, health, safety, and welfare of the people of the state. The policy provides as follows:

- Where the existing quality of water is better than required under existing water quality control plans, such quality would be maintained until it has been demonstrated that any change would be consistent with maximum benefit to the people of the State and would not unreasonably affect present and anticipated beneficial uses of such water.

- Any activity which produces waste or increases the volume or concentration of waste and which discharges to existing high-quality waters would be required to meet waste discharge requirements, which would ensure (1) pollution or nuisance would not occur and (2) the highest water quality consistent with the maximum benefit to the people of the State would be maintained.

California Toxics Rule and State Implementation Plan

The California Toxics Rule (CTR) was issued in 2000 in response to requirements of the EPA National Toxics Rule (NTR), and establishes numeric water quality criteria for approximately 130 priority pollutant trace metals and organic compounds. The CTR criteria are regulatory criteria adopted for inland surface waters, enclosed bays, and estuaries in California that are subject CWA Section 303(c). The CTR includes criteria for the protection of aquatic life and human health. Human health criteria (water and organism based) apply to all waters with a Municipal and Domestic Water Supply Beneficial Use designation as indicated in the Basin Plans.

The Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California, also known as the State Implementation Plan (SIP), was adopted by the SWRCB in 2000. It establishes provisions for translating CTR criteria, NTR criteria, and Basin Plan water quality objectives for toxic pollutants into NPDES permit effluent limits, effluent compliance determinations, monitoring for 2,3,7,8-TCDD (dioxin) and its toxic equivalents, chronic (long-term) toxicity control provisions, initiating site-specific water quality objective development, and granting of exceptions for effluent compliance. The goal of the SIP is to establish a standardized approach for the permitting of discharges of toxic effluents to inland surface waters, enclosed bays, and estuaries in a consistent fashion throughout the state.

NPDES Permit System and Waste Discharge Requirements for Construction

The SWRCB and Central Valley RWQCB have adopted specific NPDES permits for a variety of activities that have potential to discharge wastes to waters of the state. The SWRCB's statewide stormwater general permit for construction activity (Order 99-08-DWQ, to be replaced by Order 2009-0009-DWQ in July 2010) is applicable to all land-disturbing construction activities that would disturb 1 acre or more. The Central Valley RWQCB's general NPDES permit for construction dewatering activity (Order 5-00-175) authorizes direct discharges to surface waters up to 250,000 gallons per day for no more than a 4-month period each year. All of the NPDES permits involve similar processes, including submittal to the Central Valley RWQCB of notices of intent (NOI) to discharge, and implementation of storm water pollution prevention plans (SWPPPs) that include best management practices (BMPs) to minimize those discharges. As mentioned above, the Central Valley RWQCB may also issue site-specific WDRs, or waivers to WDRs, for certain waste discharges to land or waters of the state. In particular, Central Valley RWQCB Resolution R5-2003-0008 identifies activities subject to waivers of RWDs and/or WDRs, including minor dredging activities and construction dewatering activities that discharge to land.

Construction activities subject to the general construction activity permit include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce non-stormwater discharges to storm sewer systems and other waters. The permit also requires dischargers to consider the use of permanent postconstruction BMPs that would remain in service to protect water quality throughout the life of the project. All NPDES permits also have inspection, monitoring, and reporting requirements. In response to a court decision, the Central Valley RWQCB also implemented mandatory water quality sampling requirements in Resolution 2001-046 for visible and nonvisible contaminants in discharges from construction activities. Water quality sampling is now required if the activity could result in the discharge of turbidity or sediment to a water body that is listed as impaired under Section 303(d) because of sediment or siltation, or if a release of a nonvisible contaminant occurs. Where such pollutants are known or should be known to be present and have the potential to contact runoff, sampling and analysis is required. NPDES permits require the implementation of design and operational BMPs to reduce the level of contaminant runoff. Types of BMPs include source controls, treatment controls, and site planning measures.

Discharges subject to the SWRCB NPDES general permit for construction activity are subject to development and implementation of a SWPPP. The SWPPP includes a site map and description of construction activities and identifies the BMPs that would be employed to prevent soil erosion and discharge of other construction-related pollutants (e.g., petroleum products, solvents, paints, cement) that could contaminate nearby water resources.

On September 2, 2009 the SWRCB approved a new construction general permit (Order 2009-0009-DWQ), which will become effective and replace Order 99-08-DWQ on July 1, 2010. The new permit differs from Order 99-08-DWQ in the following important ways:

- Risk-Based Permitting Approach: the new general permit establishes three levels of risk possible for a construction site. Risk is calculated in two parts: 1) Project Sediment Risk, and 2) Receiving Water Risk. Risk Level 1 is considered the lowest risk, and Level 3 is considered the highest.

- Rainfall Erosivity Waiver: the new general permit includes the option allowing a small construction site (>1 and <5 acres) to self-certify if the rainfall erosivity value (R value) for their project's given location and time frame compute to be less than or equal to 5.

- Project Site Soil Characteristics Monitoring and Reporting: the new general permit provides the option for dischargers to monitor and report the soil characteristics at their project location. The primary purpose of this requirement is to provide better risk determination and eventually better program evaluation.

- Minimum Requirements Specified: the new general permit imposes more minimum BMPs and requirements that were previously only required as elements of the SWPPP or were suggested by guidance.

- Technology-Based Numeric Action Levels (NAL): the new general permit includes daily average NALs for pH and turbidity, applicable to projects in Risk Level 2.

- Technology-Based Numeric Effluent Limitations (NEL): the new general permit contains daily average NELs for pH during any construction phase where there is a high risk of pH discharge and daily average NELs turbidity for all discharges in Risk Level 3. The daily average NEL for turbidity is set at 500 NTU to represent the minimum technology that sites need to employ (to meet the traditional Best Available Technology Economically Achievable (BAT)/ Best Conventional Pollutant Control Technology (BCT) standard) and the traditional, numeric receiving water limitations for turbidity.

- Effluent Monitoring and Reporting: the new general permit requires effluent monitoring and reporting for pH and turbidity in storm water discharges. The purpose of this monitoring is to determine compliance with the NELs and evaluate whether NALs included in the General Permit are exceeded.

- Receiving Water Monitoring and Reporting: the new general permit requires some Risk Level 3 dischargers to monitor receiving waters and conduct bio assessments.

- Post-Construction Storm Water Performance Standards: the new general permit specifies runoff reduction requirements for all sites not covered by a Phase I or Phase II MS4 NPDES permit, to avoid, minimize and/or mitigate post-construction storm water runoff impacts. These requirements would not apply to the project alternatives due to Phase 1 NPDES MS4 permit described below.

- Rain Event Action Plan: the new general permit requires certain sites to develop and implement a Rain Event Action Plan (REAP) that must be designed to protect all exposed portions of the site within 48 hours prior to any likely precipitation event.

- Annual Reporting: the new general permit requires all projects that are enrolled for more than one continuous three-month period to submit information and annually certify that their site is in compliance with these requirements. The primary purpose of this requirement is to provide information needed for overall program evaluation and pubic information.

- Certification/Training Requirements for Key Project Personnel: the new general permit requires that key personnel (e.g., SWPPP preparers, inspectors, etc.) have specific qualifications or certifications as well as attend state-approved training by September 2, 2011 to ensure their level of knowledge and skills are adequate to ensure their ability to design and evaluate project specifications that will comply with General Permit requirements.

- Linear Underground/Overhead Projects: the new general permit includes requirements for all Linear Underground/Overhead Projects (LUPs).

NPDES Municipal Stormwater Permit Program

The SWRCB Municipal Storm Water Permitting Program regulates storm water discharges from MS4s. MS4 permits are issued in two phases. Under Phase I, which started in 1990, the RWQCBs have adopted NPDES storm water permits for medium (serving between 100,000 and 250,000 people) and large (serving 250,000 people) municipalities. Most of these permits are issued to a group of co-permittees encompassing an entire metropolitan area. As part of Phase II, the SWRCB adopted a General Permit for the Discharge of Storm Water from Small MS4s (WQ Order No. 2003-0005-DWQ) to provide permit coverage for smaller municipalities. The MS4 permits require the discharger to develop and implement a Storm Water Management Plan/Program with the goal of reducing the discharge of pollutants to the maximum extent practicable (MEP). MEP is the performance standard specified in Section 402(p) of the CWA. The management programs specify what best management practices (BMPs) will be used to address certain program areas. The program areas include public education and outreach; illicit discharge detection and elimination; construction and post construction; and municipal operations. In general, medium and large municipalities are required to conduct water quality monitoring, though small municipalities are not.

Two NPDES MS4 permits exist which regulate urban runoff discharges and development activities in the project area. Sacramento County and the City of Folsom are co-permittees (along with other municipal entities) for a regional NPDES MS4 (Phase I) permit that would apply to the Proposed Project Alternative site. El Dorado County is a permittee for its own NPDES MS4 (Phase II) permit for the western portion of El Dorado County, including the area where the proposed off-site roadways would be constructed under the Proposed Project Alternative. Each of these permits is described separately below.

Sacramento County and City of Folsom Phase I National Pollutant Discharge Elimination System MS4 Permit

Sacramento County and the Cities of Folsom, Rancho Cordova, Elk Grove, Citrus Heights, Galt, and Sacramento are co-permittees to the Sacramento Areawide NPDES MS4 permit (Sacramento MS4 permit) issued and enforced by the Central Valley RWQCB. First issued in 1990, the latest permit was adopted on 11 September, 2008 (NPDES Permit No. CAS082597, WDR Order No. R5-2008-0142). The permittees formed the SSQP, described in more detail in the next section, to coordinate and implement permit compliance activities. A SQIP developed for compliance with the NPDES permit is the guiding document for the permittees (SSQP 2009a) and describes the activities that will be implemented to reduce pollutant discharges in urban runoff to the MEP. The SSQP, in association with the City of Roseville, published the "Stormwater Quality Design Manual for the Sacramento and South Placer Regions" in May 2007, which is currently the guiding technical design document for development and major redevelopment in the unincorporated County of Sacramento and City of Folsom (SSQP 2007b).

An important component of the Sacramento MS4 permit requires each permittee (including the City) to update and continue to implement the planning and new development element of its SQIP to minimize the short and long-term impacts on receiving water quality from new development and redevelopment. The permit requires the continued implementation of the permittees' development standards during the entitlement and CEQA process and the development plan review process. Specifically, the Sacramento MS4 permit identifies the need to address changes in the hydrograph, defined as hydrograph modification or hydromodification, which could result from urbanization of a watershed, and to require low impact development (LID) controls to more closely mimic the pre-developed hydrologic condition. To address hydromodification, the permit requires the permittees to prepare and implement a Hydromodification Management Plan (HMP), which will entail revising development standards and associated technical guidance (aka Stormwater Quality Design Manual). Technical guidance will also be updated to incorporate new LID requirements.

El Dorado County Phase II National Pollutant Discharge Elimination System MS4 Permit

El Dorado County has been covered under the SWRCB's own NPDES Phase II MS4 general permit since April 30, 2003. A Storm Water Management Plan (SWMP) was developed by El Dorado County for the purpose of describing the minimum procedures and practices to reduce the discharge of pollutants in effluent from storm drainage systems and for compliance with the NPDES permit (El Dorado County 2004). The SWMP addresses storm water pollution control related to project planning, design, construction, and maintenance activities throughout the unincorporated area of western El Dorado County (that portion of El Dorado County within the jurisdiction of the Central Valley RWQCB, excluding the Tahoe Basin). In addition, the SWMP addresses assignment of responsibilities for implementing storm water management procedures and practices as well as training, public education and outreach, monitoring and research, program evaluation, and reporting activities.

Recycled Wastewater Requirements

A reclaimed (i.e., recycled) water distribution system would be implemented as part of the Proposed Project Alternative. Wastewater recycling in California is regulated under Title 22, Division 4, of the CCRs under the jurisdiction of CDPH. The intent of these regulations is to ensure protection of public health associated with the use of recycled water. Because the Proposed Project Alternative includes a reclaimed water distribution system, also known as a "purple pipe" system, these regulations would apply (purple is the color commonly used to identify reclaimed water conveyance facilities). The regulations establish acceptable levels of constituents in recycled water for a range of uses and prescribe means for ensuring reliability in the production of recycled water. Using recycled water for nonpotable uses is common throughout the state and is an effective means of maximizing use of water resources. The Central Valley RWQCB establishes water reclamation requirements under the Title 22 regulations and is responsible for implementing wastewater recycling projects.

Senate Bill 5

SB 5, signed into law on October 10, 2007, enacts the Central Valley Flood Protection Act of 2008. Requirements of DWR and the CVFP Board (previously known as the State Reclamation Board) under SB 5 are:

- To prepare and adopt a Central Valley Flood Protection Plan (the Plan) (described below) by 2012.
- To establish 200-year (0.005 AEP) protection as the minimum urban level of flood protection, effective with respect to specific development projects as of 2015 or 2025, as explained below.
    - The DWR is directed to produce preliminary (i.e. Best Available) maps for 100-year (0.01 AEP) and 200-year (0.005 AEP) floodplains protected by project levees, and to make them available to cities and counties in the Sacramento-San Joaquin Valley ("Central Valley"). (California Water Code Section 9610[a]) These best available maps were made available on September 8, 2008, and can be found at the California Department of Water Resources http://www.water.ca.gov/floodmgmt/lrafmo/fmb/fes/best_available_maps/. The 200-year floodplain (0.005 AEP) as defined by California Water Code Section 9610[a], pursuant to SB 5 has not been delineated for the SPA.
- Sets deadlines for cities and counties in the Central Valley to amend their general plans and their zoning ordinances to conform to the Plan within 24 months and 36 months (i.e., approximately 2014 and 2015), respectively, of its adoption.
- Obligates Central Valley counties to develop flood emergency plans within 24 months of adoption of the Plan.

DWR must propose amendments to the California Building Standards Code (Building Code) to protect areas with flood depths anticipated to exceed three feet for the 200-year flood (0.005 AEP) event. SB 5 requires that the Building Code amendments are designed to reduce the risk of flood damage and increase safety.

No later than 2015, but potentially sooner depending on when the Central Valley Flood Protection Plan takes effect, SB 5 prohibits local governments from entering development agreements or approving entitlements or permits, including ministerial permits resulting in construction of a new residence in a flood hazard zone, which result in construction of a new residence in a flood zone unless one of three conditions are met:

- flood management facilities provide level of protection necessary to withstand 200-year flood event (0.005 AEP);
- the development agreement or other entitlements include conditions that provide protections necessary to withstand 200-year flood event (0.005 AEP); or
- the local flood management agency has made adequate progress on construction of a flood protection system that shall result in protections necessary to withstand 200-year flood event (0.005 AEP) by 2025.

Central Valley Flood Protection Plan

The Central Valley Flood Protection Plan (as set forth in California Water Code, Section 9614) is a descriptive document that includes the following elements:

- a description of the Flood Management System, its performance, and the challenges to modifying it;
- a description of the facilities included in the State Plan of Flood Control;
- a description of probable impacts of projected climate change, land-use patterns, and other potential challenges;
- an evaluation of needed structural improvements and a list of facilities recommended for removal; and
- a description of both structural and nonstructural methods for providing an urban level of flood protection to currently urbanized areas in the Central Valley.

California Water Code – Dam Safety Program

The California Water Code designates the regulatory Dam Safety Program to DWR, Division of Safety of Dams (DSOD). The principal goal of this program is to avoid dam failure and thus prevent loss of life and destruction of property. The DSOD reviews plans and specifications for the construction of new dams and for the enlargement, alteration, repair, or removal of existing dams, and must grant written approval before the owner can proceed with construction. Professional engineers and geologists from the DSOD evaluate each project, investigate proposed sites, and check available construction materials. Dams under DSOD jurisdiction include artificial barriers (together with appurtenant works) that are 25 feet or more in height or have an impounding capacity of 50 acre-feet or more. Any artificial barrier not in excess of 6 feet in height, regardless of storage capacity, or that has a storage capacity not in excess of 15 acre-feet, regardless of height, is not considered jurisdictional (DWR 2009). There is one impoundment located on a tributary to Alder Creek that may be considered under DSOD jurisdiction.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

Sacramento County General Plan

The following goals and policies of the *Sacramento County General Plan* (Sacramento County 2007a) are applicable only to the No Project Alternative.

Conservation Element

- **Policy CO-9:** Community and specific plans shall specify urban runoff control strategies and requirements, consistent with Master Drainage Plans and Public Work's urban runoff management program, for development in newly urbanizing areas and identify sites where retention and treatment are warranted consistent with discharge permit requirement and county-wide runoff measures.

- **Policy CO-11:** Hazardous materials shall not be stored in the 100-year (0.01 AEP) floodplain in such a manner as to pose a significant potential for surface water contamination.

- **Policy CO-13:** Roads and structures shall be designed, built and landscaped so as to minimize erosion during and after construction.

- **Policy CO-16:** Encourage the County and Cities of Folsom, Sacramento, and Galt to jointly participate in a long-term water quality monitoring program for receiving waters within the county.

- **Policy CO-17:** Inform the community on laws governing the proper handling of hazardous materials.

El Dorado County General Plan

The following goals and policies of the *El Dorado County General Plan* (2004) are applicable only to the two local roadway connections from the Folsom Heights property off-site into El Dorado Hills under the Proposed Project Alternative. There are no El Dorado County goals and policies that are applicable to the No Project Alternative or the other four action alternatives.

Transportation and Circulation Element

- **Policy TC-1q:** The County shall utilize road construction methods that seek to reduce air, water, and noise pollution associated with road and highway development.

Public Services and Utilities Element

- **Policy 5.4.1.1:** The County shall require storm drainage systems for discretionary development that protect public health and safety, preserve natural resources, prevent erosion of adjacent and downstream lands, prevent the increase in potential for flood hazard or damage on either adjacent, upstream or downstream properties, minimize impacts to existing facilities, meet the National Pollution Discharge Elimination System (NPDES) requirements, and preserve natural resources such as wetlands and riparian areas.

- **Policy 5.4.1.2:** Discretionary development shall protect natural drainage patterns, minimize erosion, and ensure existing facilities are not adversely impacted while retaining the aesthetic qualities of the drainage way.

Public Health, Safety, and Noise Element

- **Policy 6.4.1.2:** The County shall identify and delineate flood prone study areas discovered during the completion of the master drainage studies or plans.

City of Folsom General Plan

The following goals and policies of the *City of Folsom General Plan* (1993) are applicable to the Proposed Project and the other four action alternatives under consideration. There are no City of Folsom goals and policies that are applicable to the No Project Alternative.

Open Space and Conservation Element

- **Policy 25.1:** The surface and groundwater quality of Folsom shall not be degraded from City standards.
- **Policy 28.2:** The quality and quantity of surface water runoff from a property shall not exceed existing flows or existing quality or shall comply with City standards.

Health and Safety Element

- **Policy 28.2:** The quality and quantity of surface water runoff from a property shall not exceed existing flows or existing quality or shall comply with City standards for off-site drainage. The City shall implement a surface runoff water quality monitoring program to insure compliance with City standards.

Land Use Element

- **Policy 1.9:** Development proposed along streams shall be in conformance with a comprehensive development and management plan to be prepared for stream waterbeds prior to project approval.

City of Folsom Hillside Development Guidelines

On February 14, 1995, the Folsom Planning Department adopted Resolution No. 4604—Hillside Development Guidelines—the purpose of which is to illustrate key design principles and issues that City staff will use in evaluating applications for development of any site within hillside areas of the City. The guidelines address street design, grading, site design, parking, drainage, architecture, landscaping, visual impact, and preservation of natural features, and are based on the City's Hillside Development Procedures and Standards Ordinance (Ordinance No. 798).

Sacramento Stormwater Quality Partnership

The permittees of the NPDES Municipal Stormwater Permit described above, i.e. the Sacramento County and the Cities of Folsom, Sacramento, Citrus Heights, Elk Grove, Galt, and Rancho Cordova, have joined together to form SSQP. The SSQP is a collaborative partnership that protects and improves water quality in local waterways for the benefit of the community and the environment. The goals of the SSQP are to:

- improve the quality of urban runoff;
- increase public awareness about water quality and encourage pollution prevention behavior;
- strive for countywide consistency between permittee agency programs;
- improve internal communication and coordination to facilitate agency wide compliance;
- use public funds efficiently and effectively; and
- keep apprised of new and evolving regulations that may affect the Program in the future.

The permittees cooperatively participate in decision-making and goal-setting for the monitoring program, are involved in consultant selection and review, and comment on compliance reports and other work products. Annual Reports are produced that describe the activities conducted to comply with the NPDES permit.

The stormwater pollution prevention efforts needed to satisfy the NPDES permit requirements are implemented by the SSQP through its SQIP, either jointly or by the individual permittees. The major categories of SQIP activities, conducted jointly by the SSQP, are:

- program management – including legal authority and funding, inter- and intra-agency coordination, effectiveness assessment;
- target pollutant program (including implementation of plans to target mercury and pesticides);
- monitoring program to satisfy monitoring requirements specified in the monitoring and reporting program (MRP) portion of the NPDES permit;
- special studies; and
- regional public outreach.

Additionally, the permittees may share resources related to selected program element activities, such as commercial and/or industrial inspections. Program activities implemented by individual permittees (e.g., the City of Folsom) primarily involve activities related to program management (e.g., legal authority, funding, regulatory liaison, compliance reporting, training and coordination within and outside of the organization), construction, commercial/industrial inspections, municipal operations, illicit discharges, public outreach, and new development.

3A.9.3 Environmental Consequences and Mitigation Measures

Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. These thresholds also encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. The Proposed Project or alternatives under consideration were determined to result in a significant impact related to hydrology and water quality if they would do any of the following:

- violate any water quality standards or waste discharge requirements, including NPDES waste discharge or stormwater runoff requirements, state or Federal antidegradation policies, enforceable water quality standards contained in the Central Valley RWQCB Basin Plan or statewide water quality control plans, or Federal rulemakings to establish water quality standards in California;
- substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a substantial lowering of the level of the local groundwater table;
- substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on-site or off-site;
- create or contribute runoff water that would exceed the capacity (peak flow) of existing or planned stormwater drainage systems;
- substantially degrade water quality;
- place within a 100-year (0.01 AEP) flood hazard area structures that would impede or redirect flood flows; or
- expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.

ANALYSIS METHODOLOGY

This analysis relies on information provided by various public agencies, as well as site-specific technical planning studies generated to support proposed development. Hydrology and drainage–related studies reviewed in support of this analysis include the following documents:

- *Folsom Sphere of Influence Storm Drainage Master Plan.* Draft. (MacKay & Somps 2007, Appendix H1);
- *Sacramento City/County Drainage Manual Volume 2: Hydrology Standards*. County of Sacramento Department of Water Resources, December 1996 (Sacramento County 1996); and
- *Stormwater Quality Design Manual for the Sacramento and South Placer Regions* (SSQP 2007b).

Impacts associated with drainage, hydrology, and water quality that could result from construction and operational activities related to buildout of the SPA were evaluated based on expected construction practice, the materials used, and the locations and duration of the activities. The effects of the proposed development were compared to environmental baseline conditions (i.e., existing conditions) to determine the duration and magnitude of impacts.

IMPACT ANALYSIS

Impacts that would occur under each alternative development scenario are identified as follows: NP (No Project), NCP (No USACE Permit), PP (Proposed Project/Action), RIM (Resource Impact Minimization), CD (Centralized Development), and RHD (Reduced Hillside Development). The impacts for each alternative are compared relative to the PP at the end of each impact conclusion (i.e., similar, greater, lesser).

IMPACT 3A.9-1 Potential Temporary, Short-Term Construction-Related Drainage and Water Quality Effects. *Construction activities during project implementation would involve extensive grading and movement of earth, which would substantially alter on-site drainage patterns and could generate sediment, erosion, and other nonpoint source pollutants in on-site stormwater that could drain to off-site areas and degrade local water quality.*

On-Site and Off-Site Elements

NP

Under the No Project Alternative, no project-related construction disturbances would occur. However, development would continue to occur under the existing Sacramento County agricultural zoning classification, AG-80, and no off-site water facilities would be constructed. With a minimum lot size of 80 acres allowed under this classification, up to 44 rural residences would be possible in the SPA, with associated agricultural activities that could include on-site wells, grazing, and pesticide applications. These residences would be required to comply with appropriate Sacramento County erosion-control policies, Sacramento County and Section 13801 (California Water Code) well installation standards addressing aquifer contamination from surface water, and regulatory agency standards designed to avoid contaminated runoff and other waste discharges. Thus, **direct** and **indirect** construction-related drainage and water quality impacts would be **less than significant**. ***[Lesser]***

NCP, RIM

Under the No USACE Permit Alternative, because project components would be reconfigured to avoid the placement of dredged or fill material into wetlands and other waters of the U.S., approximately 450 fewer acres would be disturbed and developed. Impacts under the Resource Impact Minimization Alternative would also be less than those of the Proposed Project Alternative because an additional 375 acres of land across the SPA would

be designated as open space. This would result in fewer acres of development and associated disturbance than the Proposed Project Alternative. However, an infrastructure backbone and drainage system would be installed throughout the SPA under both alternatives and substantial temporary, construction-related alteration of the existing drainages would still occur. Temporary, short-term construction-related disturbances at the SPA would still have the potential to result in the discharge of polluted and/or contaminated stormwater or sedimentation. Therefore, the **direct** and **indirect** project-related erosion and water quality impacts would be **significant**. ***[Lesser]***

Mitigation Measure 3A.9-1: Acquire Appropriate Regulatory Permits and Prepare and Implement SWPPP and BMPs.

Prior to the issuance of grading permits, the project applicant(s) of all projects disturbing one or more acres (including phased construction of smaller areas which are part of a larger project) shall obtain coverage under the SWRCB's NPDES stormwater permit for general construction activity (Order 2009-0009-DWQ), including preparation and submittal of a project-specific SWPPP at the time the NOI is filed. The project applicant(s) shall also prepare and submit any other necessary erosion and sediment control and engineering plans and specifications for pollution prevention and control to Sacramento County, City of Folsom, El Dorado County (for the off-site roadways into El Dorado Hills under the Proposed Project Alternative). The SWPPP and other appropriate plans shall identify and specify:

- the use of an effective combination of robust erosion and sediment control BMPs and construction techniques accepted by the local jurisdictions for use in the project area at the time of construction, that shall reduce the potential for runoff and the release, mobilization, and exposure of pollutants, including legacy sources of mercury from project-related construction sites. These may include but would not be limited to temporary erosion control and soil stabilization measures, sedimentation ponds, inlet protection, perforated riser pipes, check dams, and silt fences

- the implementation of approved local plans, non-stormwater management controls, permanent post-construction BMPs, and inspection and maintenance responsibilities;

- the pollutants that are likely to be used during construction that could be present in stormwater drainage and nonstormwater discharges, including fuels, lubricants, and other types of materials used for equipment operation;

- spill prevention and contingency measures, including measures to prevent or clean up spills of hazardous waste and of hazardous materials used for equipment operation, and emergency procedures for responding to spills;

- personnel training requirements and procedures that shall be used to ensure that workers are aware of permit requirements and proper installation methods for BMPs specified in the SWPPP; and

- the appropriate personnel responsible for supervisory duties related to implementation of the SWPPP.

Where applicable, BMPs identified in the SWPPP shall be in place throughout all site work and construction/demolition activities and shall be used in all subsequent site development activities. BMPs may include, but are not limited to, such measures as those listed below.

- Implementing temporary erosion and sediment control measures in disturbed areas to minimize discharge of sediment into nearby drainage conveyances, in compliance with state and local standards in effect at the time of construction. These measures may include silt fences, staked straw bales or wattles, sediment/silt basins and traps, geofabric, sandbag dikes, and temporary vegetation.

- Establishing permanent vegetative cover to reduce erosion in areas disturbed by construction by slowing runoff velocities, trapping sediment, and enhancing filtration and transpiration.

- Using drainage swales, ditches, and earth dikes to control erosion and runoff by conveying surface runoff down sloping land, intercepting and diverting runoff to a watercourse or channel, preventing sheet flow over sloped surfaces, preventing runoff accumulation at the base of a grade, and avoiding flood damage along roadways and facility infrastructure.

A copy of the approved SWPPP shall be maintained and available at all times on the construction site.

For those areas that would be disturbed as part of the U.S. 50 interchange improvements, Caltrans shall coordinate with the development and implementation of the overall project SWPPP, or develop and implement its own SWPPP specific to the interchange improvements, to ensure that water quality degradation would be avoided or minimized to the maximum extent practicable.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties, or Caltrans).

Implementation: Project applicant(s) during all project phases and on-site and off-site elements.

Timing: Submittal of the State Construction General Permit NOI and SWPPP (where applicable) and development and submittal of any other locally required plans and specifications before the issuance of grading permits for all on-site project phases and off-site elements and implementation throughout project construction.

Enforcement:

1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.

2. For the two roadway connections in El Dorado Hills: El Dorado County Department of Transportation.

3. For the detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.

4. For the U.S. 50 interchange improvements: Caltrans.

5. For all construction activities subject to the state's Construction General Permit and violators of local ordinances referred to the state for enforcement: Central Valley Regional Water Quality Control Board.

PP, RHD

Implementation of the Proposed Project and Reduced Hillside Development Alternative would include substantial construction activity over more than 2,500 acres, including soil removal, trenching and pipe installation, fabrication of concrete channels, grading, and revegetation. An infrastructure backbone and drainage system would be installed throughout the SPA, as shown in Chapter 2, "Alternatives." Construction activities associated with development of the SPA would create the potential for soil erosion and sedimentation both within and downstream of the SPA. The construction process could also result in the accidental release of other pollutants to surface waters, including oil and grease, petroleum hydrocarbons, chemical substances used during construction, waste concrete, and wash water.

The substantial construction-related alteration of on-site drainages could result in soil erosion and stormwater discharges of suspended solids, increased turbidity, and potential release, mobilization, and exposure of other pollutants, including legacy sources of mercury from project-related construction sites. This contaminated runoff could enter Alder Creek, Buffalo Creek, Coyote Creek, Carson Creek, or other on-site drainage channels and ultimately drain off-site to downstream water bodies including Lake Natoma and the lower American River. Many construction-related wastes have the potential to degrade existing water quality and beneficial uses by altering the dissolved-oxygen content, temperature, pH, suspended-sediment and turbidity levels, or nutrient content, or by causing toxic effects in the aquatic environment. The presence and distribution of legacy mercury in upland areas and/or drainages is currently unknown; however, if it is present in the sediments where construction activities disturb soils, it could become mobilized and become exposed to the environment downstream. Therefore, project-related construction activities could violate water quality standards or cause direct harm to aquatic organisms.

Localized erosion hazards may be high where the SPA topography is steep. Intense rainfall and associated stormwater runoff in relatively flat areas could result in short periods of sheet erosion within areas of exposed or stockpiled soils. If uncontrolled, these soil materials could cause sedimentation and blockage of drainage channels. Further, the compaction of soils by heavy equipment may reduce the infiltration capacity of soils and increase the potential for runoff and erosion. Non-stormwater discharges could result from activities such as construction dewatering procedures, or discharge or accidental spills of hazardous substances such as fuels, oils, concrete, paints, solvents, cleaners, or other construction materials.

Although construction on areas of steep topography would be somewhat reduced under the Reduced Hillside Development Alternative, thereby reducing the potential for localized erosion from this source, the total acreage of development subjected to construction activities would be reduced by only approximately 64 acres, with an additional 19 acres of commercial and industrial development, resulting in a nearly identical area subject to construction activities as compared to the Proposed Project Alternative.

Because the Proposed Project and Reduced Hillside Development Alternatives would disturb large areas of land, substantially alter on-site drainage patterns, and could result in impacts on water quality within on-site drainage channels and ultimately off-site drainage channels as a result of temporary, short-term construction activities, the **direct** and **indirect** project-related erosion and water quality impacts would be **significant**. ***[Similar]***

Mitigation Measure: Implement Mitigation Measure 3A.9-1.

CD

Impacts under the Centralized Development Alternative would be less than those of the Proposed Project Alternative because there would be approximately 387 fewer acres of residential development and approximately 487 additional acres of the SPA (including areas of steep topography) would remain in its current undeveloped state and not be subject to construction activities. A large-scale infrastructure backbone and drainage system would be still installed throughout the SPA under this alternative and substantial temporary, construction-related alteration of the existing drainages would still occur. Temporary, short-term construction-related disturbances at the SPA would still have the potential to result in the discharge of polluted and/or contaminated stormwater or sedimentation. Therefore, project-related **direct** and **indirect** erosion and water quality impacts would be **significant**. ***[Lesser]***

Mitigation Measure: Implement Mitigation Measure 3A.9-1.

Implementation of Mitigation Measure 3A.9-1 would reduce the significant temporary, short-term construction-related drainage and water quality effects under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives to **a less-than-significant level** by requiring preparation and implementation of a SWPPP with appropriate BMPs such as source

control, revegetation, and erosion control, to maintain surface water quality conditions in adjacent receiving waters. However, some of the off-site elements fall under the jurisdiction of El Dorado and Sacramento Counties, or Caltrans; therefore, neither the City nor the project applicant(s) would have control over their timing or implementation.

Several technical studies have been conducted regarding the impacts of water quality control features on groundwater (e.g., City of Fresno Nationwide Urban Runoff Project [as summarized in EPA 1983] and *California Storm Water Best Management Practices Handbook* prepared by the California Stormwater Quality Association [CASQA] [CASQA 2003]) and surface water (e.g., *Preliminary Data Summary of Urban Storm Water Best Management Practices* [EPA 1999] and *Cumulative Water Quality Analysis Report for the Lahontan Development 1996–2002* [County of Placer 2007]). These studies have identified that water quality control features such as revegetation, erosion control measures detention/sedimentation, and infiltration basins have been successful in controlling water quality and avoiding water quality impacts (metals and organic compounds associated with stormwater are typically lost within the first few feet of the soil of the retention basins associated with groundwater). Further, technical studies associated with the Lahontan Development demonstrated that the use of a variety BMPs such as source control, detention/sedimentation basins, revegetation, and erosion control, have been able to maintain surface water quality conditions in adjacent receiving waters.

IMPACT 3A.9-2 Potential Increased Risk of Flooding and Hydromodification from Increased Stormwater Runoff. *Project implementation would increase the amount of impervious surfaces on the SPA, thereby increasing surface runoff. This increase in surface runoff would result in an increase in both the total volume and the peak discharge rate of stormwater runoff, and therefore could result in greater potential for on- and off-site flooding.*

On-Site and Off-Site Elements

NP

Under the No Project Alternative, the existing hydrology and drainage conditions at the SPA would not be altered except at a localized level with potential construction of up to 44 rural residences under the existing AG-80 Sacramento County zoning, and no off-site water facilities would be constructed. The existing land use classification would not change, overall drainage patterns in the SPA would not be substantially altered, no substantial increase in impervious surfaces would occur, and any construction activities would be required to comply with Sacramento County erosion control policies; thus, **direct** and **indirect** impacts would be **less than significant**. ***[Lesser]***

NCP, RIM

The amount of stormwater runoff would likely be lower under the No USACE Permit and Resource Impact Minimization Alternatives than under the Proposed Project Alternative because of the decreased development areas (approximately 375 and 450 acres, respectively) and associated decreases in impervious surfaces of residential, commercial, and industrial land uses, as shown in Exhibits 2-10 (RIM), and 2-17 (NCP) in Chapter 2, "Alternatives."

To eliminate any flow increase or unacceptable hydromodification caused by project development, stormwater detention facilities and other improvements (e.g., source controls, biotechnical stream stabilization) would be constructed to maintain peak storm flows at no greater than the level existing before development, as illustrated in Exhibits 2-11 (RIM) and 2-18 (NCP) in Chapter 2, "Alternatives." However, since final designs and specifications have not been submitted to or approved by the City, implementation of the No USACE Permit and Resource Impact Minimization Alternatives could result in **potentially significant, direct** and **indirect** impacts related to stormwater runoff and the subsequent risk of flooding. ***[Lesser]***

Mitigation Measure 3A.9-2: Prepare and Submit Final Drainage Plans and Implement Requirements Contained in Those Plans.

Before the approval of grading plans and building permits, the project applicant(s) of all project phases shall submit final drainage plans to the City, and to El Dorado County for the off-site roadway connections into El Dorado Hills, demonstrating that off-site upstream runoff would be appropriately conveyed through the SPA, and that project-related on-site runoff would be appropriately contained in detention basins or managed with through other improvements (e.g., source controls, biotechnical stream stabilization) to reduce flooding and hydromodfication impacts.

The plans shall include, but not be limited to, the following items:

- an accurate calculation of pre-project and post-project runoff scenarios, obtained using appropriate engineering methods, that accurately evaluates potential changes to runoff, including increased surface runoff;
- runoff calculations for the 10-year and 100-year (0.01 AEP) storm events (and other, smaller storm events as required) shall be performed and the trunk drainage pipeline sizes confirmed based on alignments and detention facility locations finalized in the design phase;
- a description of the proposed maintenance program for the on-site drainage system;
- project-specific standards for installing drainage systems;
- City and El Dorado County flood control design requirements and measures designed to comply with them;

  Implementation of stormwater management BMPs that avoid increases in the erosive force of flows beyond a specific range of conditions needed to limit hydromodification and maintain current stream geomorphology. These BMPs will be designed and constructed in accordance with the forthcoming SSQP Hydromodification Management Plan (to be adopted by the RWQCB) and may include, but are not limited to, the following:

  - use of Low Impact Development (LID) techniques to limit increases in stormwater runoff at the point of origination (these may include, but are not limited to: surface swales; replacement of conventional impervious surfaces with pervious surfaces [e.g., porous pavement]; impervious surfaces disconnection; and trees planted to intercept stormwater);
  - enlarged detention basins to minimize flow changes and changes to flow duration characteristics;
  - bioengineered stream stabilization to minimize bank erosion, utilizing vegetative and rock stabilization, and inset floodplain restoration features that provide for enhancement of riparian habitat and maintenance of natural hydrologic and channel to floodplain interactions;
  - minimize slope differences between any stormwater or detention facility outfall channel with the existing receiving channel gradient to reduce flow velocity; and
  - minimize to the extent possible detention basin, bridge embankment, and other encroachments into the channel and floodplain corridor, and utilize open bottom box culverts to allow sediment passage on smaller drainage courses.

- The final drainage plan shall demonstrate to the satisfaction of the City of Folsom Community Development and Public Works Departments and El Dorado County Department of Transportation that 100-year (0.01 AEP) flood flows would be appropriately channeled and contained, such that the risk to people or damage to structures within or down gradient of the SPA would not occur, and that hydromodification would not be increased from pre-development levels such that existing stream geomorphology would be changed (the range of conditions should be calculated for each receiving water if feasible, or a conservative estimate should be used, e.g., an Ep of 1 ±10% or other as approved by the Sacramento Stormwater Quality Partnership and/or City of Folsom Public Works Department).

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with El Dorado County.

Implementation: Project applicant(s) during all on-site project phases and off-site elements.

Timing: Before approval of grading plans and building permits of all project phases.

Enforcement:
1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Public Works Department.
2. For the two roadway connections in El Dorado Hills: El Dorado County Department of Transportation.

PP, RHD

Project implementation would include development on approximately 2,500 acres of land, most of which has not been previously developed. The Proposed Project Alternative includes residential and commercial development, and supporting facilities and services, including parks, schools, and major circulation and roadway infrastructure. The various types of proposed land uses would each contribute different relative amounts of stormwater runoff corresponding to the percentage of impervious surface associated with each land use category, which ranges from 2% (wetlands/open space) to 95% (major roads, parking, and stormwater detention) (City and County of Sacramento 1996: 5-7). This increase in impervious surface would increase the peak discharge rate of stormwater runoff generated on the SPA and from areas upstream (e.g., contribution of flow from off-site watersheds to Alder Creek within the SPA).

The Proposed Project Alternative would use an on-site conveyance and detention/water quality treatment system and the conveyance of off-site flows through the property. A Draft Storm Drainage Masterplan (Drainage Plan) has been prepared that details the proposed drainage system (MacKay & Somps 2007). The proposed stormwater drainage system has been designed to satisfy the design criteria of the SSQP, FEMA National Flood Insurance Program requirements, and the 2002-2008 NPDES requirements. As illustrated in Exhibit 2-4 (see Chapter 2, "Alternatives"), the Proposed Project Alternative has been designed to provide facilities that would maintain stormwater flows originating on the SPA during and after buildout, at a level equal to or less than predevelopment flows.

The hydrologic analysis in this study is based on procedures outlined in the Sacramento City/County Drainage Manual, Volume 2 Hydrology Standards (City and County of Sacramento 1996). Methodology from this Manual was used to develop a HEC-HMS (version 3.1.0) model for the Proposed Project Alternative, which contained project area subbasin properties, rainfall data, and pipe/channel routing information to determine the peak flows for the 2-year, 5-year, 10-year, and 100-year 24-hour design storms. Within the models, the following three scenarios were created:

1. Existing Conditions: This scenario establishes existing base flow conditions.

2. Proposed Conditions without Detention: This scenario includes the developed area without on-site detention basins.

3. Proposed Conditions with Detention: The scenario includes the developed area with the addition of on-site detention basins to mitigate for increased flows.

The subwatersheds in the SPA and immediate surrounding area were further delineated into 61 subbasins based on aerial topography for those within the Proposed Project Alternative site and USGS topographic maps for those outside of the limits of the aerial topography (MacKay & Somps 2007:10). See Exhibit 3A.9-2 and Table 3A.9-6 for subbasin locations and areas. The existing on-site and off-site subwatersheds used in the Drainage Plan hydrologic modeling are shown on Exhibit 3A.9-2.

Three off-site developments north of U.S. 50 contribute flow to the Alder Creek watershed within the SPA: Broadstone Unit #2, Broadstone Unit #3, and The Oaks at Willow Springs (see Exhibit 3A.9-2). These developments currently have detention basins that were designed to detain flows back to pre-project conditions pursuant to SSQP, FEMA, and NPDES requirements. The design outflow volumes from these detention basins that contribute flow to the watershed in the SPA were used in the Drainage Plan (see MacKay & Somps 2007 for additional detail). Additionally, off-site watersheds to the south of the SPA also contribute flow to the Alder Creek system. These watersheds would remain undeveloped under the Proposed Project Alternative. Physical parameters for these watersheds were estimated using USGS topographic maps. Data for areas north and south of the SPA, along with information on the overall watersheds, were used to simulate runoff through these areas/basins under the above three scenarios. The total estimated peak flow from these off-site watersheds are shown in Table 3A.9-2.

Table 3A.9-2
Modeled Peak 100-Year (0.01 AEP) Flow Rate Contributions from Off-Site Basins (Existing Conditions)

Off-site Watershed ID	Watershed Area (acres)	Peak Flow Rate (cfs)
OFF1A	55	100
OFF1B	228	190
OFF1C	49	74
OFF4A	341	236
OFF4B	71	69
OFF6	337	476
OFF8	1,030	1,160
OFF9D	371	444
OFF9E1	19	43
OFF9E2	5	14
OFF9F1	7	20
OFF9F2	27	51
OFF9F3	34	65
OFF9F4	4	8

Note: cfs = cubic feet per second
Source: MacKay & Somps 2007

Under current conditions, runoff leaves the boundaries of the SPA at eight main outfall locations (see Exhibit 3A.9-1). The Alder Creek watershed, the primary watershed in the SPA, has one main outfall location on the west side of Prairie City Road. The upper Buffalo Creek portion of that watershed, located along the west project boundary, has three outfall locations on the east side of Prairie City Road. The Coyote Creek watershed begins within the southwest project boundary. Runoff leaves this watershed at one location. Four on-site sub basins and

two off-site sub basins of the Carson Creek watershed are incorporated in the hydrologic analysis. The Carson Creek watershed, on the east side of the SPA, has three outfall locations.

Modeling results of peak flows at these main outfall locations from the SPA under the three Proposed Project Alternative scenarios described above were compared for the 100-year (0.01 AEP), 10-year, 5-year, and 2-year storm events, as shown in Table 3A.9-3.

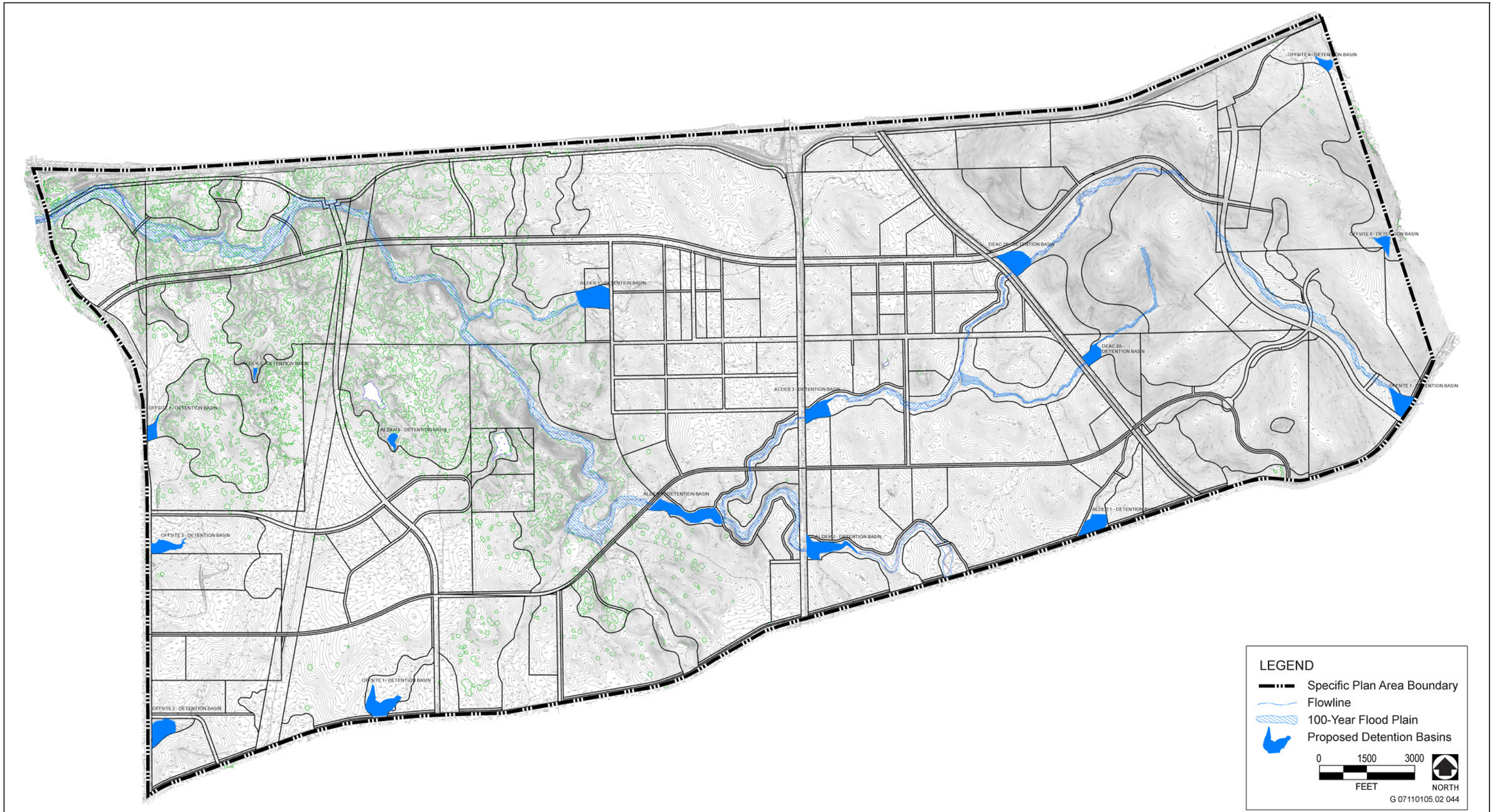
The results in Table 3A.9-4 show that with the detention basin facilities as proposed, the 100-year (0.01 AEP) and 10-year storm events under the Proposed Project Alternative development conditions would remain at or below existing conditions. During the 5-year and 2-year events, flow rates would increase at some locations under the Proposed Project Alternative. Although these increases in peak flow rates are minor and are not anticipated to affect downstream facilities, modified outlet facilities would be provided to reduce the flow to pre-project conditions of these 5-year and 2-year events if it was determined during detailed design studies that downstream facilities would be affected.

The proposed locations of the detention basins required to mitigate flow rate increases due to project development for the 100-year (0.01 AEP) storm event are shown on Exhibit 3A.9-4. Three basins would be located in the Buffalo Creek watershed, one in the Coyote Creek watershed, three in the Carson Creek watershed, and nine in the Alder Creek watershed. The applicants have stated that the basins were sized conservatively and may be refined during the design phase. The 100-year (0.01 AEP) storm detention capacities for the basins are shown in Table 3A.9-4.

The storm drain pipe alignments (see Exhibit 2-4 in Chapter 2, "Alternatives") were sized to convey the 10-year peak flow rate under gravity flow conditions (flowing full with no pressure flow). The 10-year flow volumes used to calculate pipe size were taken from the "with detention" analysis. Major trunk lines were assumed to have a slope of 1%, which was considered a conservative assumption based on the generally steep slopes in the project area, and generally resulted in oversized pipes. During a 100-year (0.01 AEP) storm event the storm drain pipes would flow under pressure, and flow not conveyed in the pipes would be allowed to flow in the streets. Because the design phase is not yet completed, alignments and detention facility locations have not been finalized.

Potential changes to the hydrologic and geomorphic processes in a watershed as a result of impervious surfaces and drainage infrastructure from urbanization include increased runoff volumes and dry weather flows, increased frequency and number of runoff events, increased long-term cumulative duration of flows, as well as increased peak flows. These changes are referred to as "hydromodification." Hydromodification intensifies the erosion and sediment transport process, and often leads to changes in stream channel geometry, streambed and streambank properties, which can result in degradation and loss of riparian habitat, and downgradient sediment deposition causing flooding problems (Geosyntec 2007:4-1). Studies have preliminarily evaluated the hydrologic and geomorphic impacts of hydromodification in the Alder Creek watershed and surrounding areas within the region (Geosyntec 2007; Northwest Hydraulics Consultants [NHC] 2009). The Alder Creek Watershed Management Action Plan (Alder Creek WMAP) (City of Folsom 2010), provides a more general assessment of the watershed, and indicates that shallow soils and prevalence of exposed bedrock limits the channel susceptibility to degradation (e.g., down cutting) within much of the presently undeveloped watershed (including areas within the SPA), and channel instability resulting from hydromodification in these areas would be generally anticipated to be restricted to bank erosion (City of Folsom 2010:4-6, NHC 2009:22-24).

One measurement used to evaluate the amounts of hydromodification in pre- and post-development scenarios is the erosion potential (Ep). The Ep measures the relative change in the amount of erosive force applied to the channel boundary under a given flow scenario, as well as sediment transport capacity, between any two watershed scenarios. An Ep of 1 would indicate no change in erosion potential due to hydromodification between two watershed scenarios, i.e. the pre-development erosion and sediment carrying capacity is maintained. A study based on 49 stream channel sites in four San Francisco Bay Area watersheds showed that as the Ep begins to exceed 1.2 (i.e., a 20 % increase) the probability of stream channel instabilities dramatically increases. The study



Source: MacKay & Somps 2007

Proposed 100-Year (0.01 AEP) Floodplain and Proposed Basin Locations **Exhibit 3A.9-4**

Table 3A.9-3
Modeled Peak Flow Results at Project Outfall Locations

Outfall Location	Existing Conditions (cfs)	Proposed Conditions Without Detention (cfs)	Proposed Conditions With Detention (cfs)	Outfall Description
100-Year (0.01 AEP) Peak Flow Results				
ALDER	4,321	4,854	3,866	Alder Creek flow leaving the study area
BUFF 2	185	299	140	Runoff leaving subbasin BCD2 to Buffalo Creek
BUFF 3	120	152	85	Runoff leaving subbasin BCD3 to Buffalo Creek
BUFF 4	58	86	43	Runoff leaving subbasin BCD4 to Buffalo Creek
COY 1	122	139	67	Runoff leaving subbasin CoyCrD to Coyote Creek
CARS 1	276	327	185	Runoff leaving Carson Creek subbasin CCD1
CARS 2	113	132	51	Runoff leaving Carson Creek subbasin CCD1b
CARS 3	205	317	104	Runoff leaving subbasin CCD2 to Carson Creek
10-Year Peak Flow Results				
ALDER	2,579	2,835	2,532	Alder Creek flow leaving the study area
BUFF 2	100	160	94	Runoff leaving subbasin BCD2 to Buffalo Creek
BUFF 3	63	82	61	Runoff leaving subbasin BCD3 to Buffalo Creek
BUFF 4	30	45	26	Runoff leaving subbasin BCD4 to Buffalo Creek
COY 1	65	74	41	Runoff leaving subbasin CoyCrD to Coyote Creek
CARS 1	150	177	135	Runoff leaving Carson Creek subbasin CCD1
CARS 2	59	69	40	Runoff leaving Carson Creek subbasin CCD1b
CARS 3	113	172	96	Runoff leaving subbasin CCD2 to Carson Creek
5-Year Peak Flow Results				
ALDER	2,073	2,265	2,096	Alder Creek flow leaving the study area
BUFF 2	78	124	82	Runoff leaving subbasin BCD2 to Buffalo Creek
BUFF 3	48	64	54	Runoff leaving subbasin BCD3 to Buffalo Creek
BUFF 4	23	34	21	Runoff leaving subbasin BCD4 to Buffalo Creek
COY 1	50	57	34	Runoff leaving subbasin CoyCrD to Coyote Creek
CARS 1	116	137	126	Runoff leaving Carson Creek subbasin CCD1
CARS 2	45	53	35	Runoff leaving Carson Creek subbasin CCD1b
CARS 3				Runoff leaving subbasin CCD2 to Carson Creek
2-Year Peak Flow Results				
ALDER	1,332	1,455	1,395	Alder Creek flow leaving the study area
BUFF 2	46	74	53	Runoff leaving subbasin BCD2 to Buffalo Creek
BUFF 3	28	38	35	Runoff leaving subbasin BCD3 to Buffalo Creek
BUFF 4	12	19	13	Runoff leaving subbasin BCD4 to Buffalo Creek
COY 1	30	34	25	Runoff leaving subbasin CoyCrD to Coyote Creek
CARS 1	69	83	82	Runoff leaving Carson Creek subbasin CCD1
CARS 2	26	31	25	Runoff leaving Carson Creek subbasin CCD1b
CARS 3	53	81	63	Runoff leaving subbasin CCD2 to Carson Creek

Note: cfs = cubic feet per second
Source: MacKay & Somps 2007

Table 3A.9-4
Modeled Peak 100-Year (0.01 AEP) Storm Detention Capacity

Detention Basin ID	Peak Discharge (cfs)	Peak Volume (acre-feet)
ALDER 1	88	4.31
ALDER 2	718	8.62
ALDER 3	463	7.39
ALDER 4	1156	20.6
ALDER 5	254	34.4
ALDER 6	116	1.57
ALDER 7	94	0.2
BUFF 2	140	8.22
BUFF 3	85	7.5
BUFF 4	43	4.5
COY 1	67	3.8
CARS 1	185	5.72
CARS 2	51	2.28
CARS 3	104	11.8
DEAC2A	87	2.79
DEAC2B	253	2.74

Notes: ID = Identification; cfs = cubic feet per second
Source: MacKay & Somps 2007

suggests that the effectiveness of BMPs can be evaluated by their ability to maintain a target Ep of 1 ±20%. A U.S. Army Corps of Engineers study suggests a more conservative Ep target of 1 ±10% (Geosyntec 2007:5-13). The Alder Creek WMAP provides additional guidance and recommendations related to assessment and protection of hydrologic and geomorphic processes and functions for Alder Creek (City of Folsom 2010:5-17).

The total acreage of development subjected to construction activities under the Reduced Hillside Development Alternative would be reduced by only approximately 64 acres, with an additional 19 acres of commercial and industrial development, resulting in a nearly identical area subject to construction activities as compared to the Proposed Project Alternative. Therefore, impacts under the Reduced Hillside Development Alternative would be similar to that of the Proposed Project Alternative because a similar number of acres would be developed under both scenarios, with a similar area of associated impervious surfaces, as shown in Exhibit 2-14 in Chapter 2, "Alternatives."

While it appears that the applicants' proposed Storm Drainage Masterplan (MacKay & Somps 2007) could appropriately convey upstream off-site runoff and would appropriately detain project-related on-site runoff in a manner that effectively meets current stormwater management criteria to acceptable levels, hydromodification is not addressed in the Storm Drainage Master Plan and final designs and specifications have not been submitted or approved by the City. Without the necessary information to demonstrate that all stormwater criteria and standards, including hydromodifcation management, are being met, it cannot be assumed that potentially significant impacts would not occur. Therefore, implementation of the Proposed Project or the Reduced Hillside Development Alternatives could result in **potentially significant**, **direct** and **indirect** impacts related to stormwater runoff and the subsequent risk of flooding and/or hydromodification. ***[Similar]***

Mitigation Measure: Implement Mitigation Measure 3A.9-2.

CD

The amount of stormwater runoff would likely be lower under the Centralized Development Alternative than under the Proposed Project Alternative because there would be approximately 387 fewer acres of residential development and approximately 487 additional acres of the SPA (including most of the areas of steep topography in the eastern foothills) would remain in its current undeveloped state. This would result in associated decreases in impervious surfaces as shown in Exhibit 2-12 in Chapter 2, "Alternatives." In addition, because steep slopes are in general more erodible, have higher runoff coefficients, and cannot have detention basin placement due to instability (SSQP 2007b: DB-2), reducing or eliminating development on these areas would reduce the potential for increases in stormwater runoff quantity or contaminants.

To eliminate any flow increase caused by project development under the Centralized Development Alternative, stormwater detention facilities and other improvements (e.g., source controls, biotechnical stream stabilization) would be constructed to maintain peak storm flows at no greater than the level existing before development, as illustrated in Exhibit 2-13 in Chapter 2, "Alternatives." However, since final designs and specifications have not been submitted to or approved by the City, implementation of the Centralized Development Alternative could result in **potentially significant, direct** and **indirect** impacts related to stormwater runoff and the subsequent risk of flooding. ***[Lesser]***

Mitigation Measure: Implement Mitigation Measure 3A.9-2.

Implementation of Mitigation Measure 3A.9-2 would reduce the potentially significant impact associated with the potential increased risk of flooding from increased stormwater runoff under the No USACE Permit, Proposed Project Alternative, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives to a **less-than-significant** level because the project applicant(s) would demonstrate to the appropriate regulatory agency that the project would conform with applicable state and local regulations regulating surface water runoff, including the procedures outlined in the Sacramento City/County Drainage Manual (City and County of Sacramento 1996) and the El Dorado County SWMP (El Dorado County 2004), which are designed to meet or exceed applicable state and local regulations pertaining to stormwater runoff. Specific project design standards as required in this mitigation measure would, when implemented, provide flood protection to meet FEMA 100-year (0.01 AEP) flood protection criteria, would safely convey on-site and off-site flows through the SPA, would reduce the effects of hydromodification on stream channel geomorphology, and would prevent substantial increased flood hazard on downstream areas by limiting peak discharges of flood flows to below pre-project levels. However, some of the off-site elements (two roadway connections in El Dorado County) fall under the jurisdiction of El Dorado County; therefore, neither the City nor the project applicant(s) would have control over their timing or implementation.

IMPACT 3A.9-3 Long-Term Water Quality and Hydrology Effects from Urban Runoff. *Project implementation would convert a large area of undeveloped land to residential and commercial uses, thereby changing the amount and timing of potential long-term pollutant discharges in stormwater and other urban runoff to Alder Creek, Buffalo Creek, Coyote Creek, Carson Creek, and other on- and off-site drainages.*

On-Site and Off-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residence could occur under the existing Sacramento County agricultural zoning classification AG-80, and no off-site water facilities would be constructed. Agricultural activities could include new on-site wells, grazing, and pesticide applications, with associated contaminant discharges. These residences would be required to comply with appropriate Sacramento

County erosion-control policies, Sacramento County and Section 13801 (California Water Code) well installation standards addressing aquifer contamination from surface water, Sacramento County on-site wastewater treatment system installation standards if septic systems are installed, and regulatory agency standards designed to avoid contaminated runoff and groundwater, and other waste discharges. Thus, **direct** and **indirect** impacts under the No Project Alternative would be **less than significant**. ***[Lesser]***

NCP, RIM, CD, RHD

The amount of contaminants discharged in stormwater drainage would likely be lower under the No USACE Permit, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives than under the Proposed Project Alternative because of the decreased density and areas of residential, commercial, and industrial land uses, as shown in Exhibits 2-10 (RIM) and 2-17 (NCP) in Chapter 2, "Alternatives." Further, the contaminant amounts would likely be lower in the eastern portion of the SPA because of the reduced amount of residential, commercial, and industrial land uses under both of these alternatives.

Water quality BMPs, including those to be used for the Proposed Project Alternative and shown in Table 3A.9-7, such as revegetation, erosion control measures, and detention basins, have been shown to be successful in controlling water quality and avoiding water quality impacts (metals and organic compounds associated with stormwater are typically lost within the first few feet of the soil of the retention basins associated with groundwater [EPA 1983:7-24]). Pollutants are removed from stormwater in detention basins through gravitational settling and biological processes depending on the type of basin. Permanent ponds (i.e., micropools) in dry weather may enhance pollutant removal through biological and chemical processes (SSQP 2007b:DB-2). To eliminate any flow increase caused by project development, and any erosion related to this increase, stormwater detention facilities would be constructed to maintain peak storm flows at the level existing before development, as illustrated in Exhibits 2-11 (RIM), 2-13 (CD), 2-15 (RHD), and 2-18 (NCP) in Chapter 2, "Alternatives."

However, because final design plans and specifications have not been submitted to or approved by the City, implementation of the No USACE Permit, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives could result in **potentially significant, direct** and **indirect** impacts related to the potential for contaminants to enter receiving waters, thus resulting in adverse effects from long-term urban runoff. ***[Lesser]***

Mitigation Measure 3A.9-3: Develop and Implement a BMP and Water Quality Maintenance Plan.

Before approval of the final small-lot subdivision map for all project phases, a detailed BMP and water quality maintenance plan shall be prepared by a qualified engineer retained by the project applicant(s) of all project phases. Drafts of the plan shall be submitted to the City of Folsom and El Dorado County for the off-site roadway connections into El Dorado Hills, for review and approval concurrently with development of tentative subdivision maps for all project phases. The plan shall finalize the water quality improvements and further detail the structural and nonstructural BMPs proposed for the project. The plan shall include the elements described below.

- A quantitative hydrologic and water quality analysis of proposed conditions incorporating the proposed drainage design features.
- Predevelopment and postdevelopment calculations demonstrating that the proposed water quality BMPs meet or exceed requirements established by the City of Folsom and including details regarding the size, geometry, and functional timing of storage and release pursuant to the '"Stormwater Quality Design Manual for Sacramento and South Placer Regions" ([SSQP 2007b] per NPDES Permit No. CAS082597 WDR Order No. R5-2008-0142, page 46) and El Dorado County's NPDES SWMP (County of El Dorado 2004).

- Source control programs to control water quality pollutants on the SPA, which may include but are limited to recycling, street sweeping, storm drain cleaning, household hazardous waste collection, waste minimization, prevention of spills and illegal dumping, and effective management of public trash collection areas.

- A pond management component for the proposed basins that shall include management and maintenance requirements for the design features and BMPs, and responsible parties for maintenance and funding.

- LID control measures shall be integrated into the BMP and water quality maintenance plan. These may include, but are not limited to:

  - surface swales;
  - replacement of conventional impervious surfaces with pervious surfaces (e.g., porous pavement);
  - impervious surfaces disconnection; and
  - trees planted to intercept stormwater.

- New stormwater facilities shall be placed along the natural drainage courses within the SPA to the extent practicable so as to mimic the natural drainage patterns. The reduction in runoff as a result of the LID configurations shall be quantified based on the runoff reduction credit system methodology described in "Stormwater Quality Design Manual for the Sacramento and South Placer Regions, Chapter 5 and Appendix D4" (SSQP 2007b) and proposed detention basins and other water quality BMPs shall be sized to handle these runoff volumes.

For those areas that would be disturbed as part of the U.S. 50 interchange improvements, it is anticipated that Caltrans would coordinate with the development and implementation of the overall project SWPPP, or develop and implement its own SWPPP specific to the interchange improvements, to ensure that water quality degradation would be avoided or minimized to the maximum extent practicable.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with El Dorado County and Caltrans.

Implementation: Project applicant(s) during all on-site project phases and off-site elements.

Timing: Prepare plans before the issuance of grading permits for all project phases and off-site elements and implementation throughout project construction.

Enforcement:

1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department and Public Works Department.

2. For the two roadway connections in El Dorado Hills: El Dorado County Department of Transportation.

3. For the U.S. 50 interchange improvements: Caltrans.

PP

The conversion of undeveloped land to urban land uses would alter the types, quantities, and timing of contaminant discharges in stormwater runoff. Overall, the potential for the Proposed Project Alternative to cause or contribute to long-term discharges of urban contaminants (e.g., oil and grease, fuel, trash) into the stormwater drainage system and ultimate receiving waters would increase compared to existing conditions. Some

contaminants associated with existing on-site agricultural activities (e.g., sediment, nutrients, pathogens, agricultural chemicals) would decrease as these uses are phased out during project development. The potential discharges of contaminated urban runoff from paved and landscaped areas could increase or could cause or contribute to adverse effects on aquatic organisms in receiving waters. Urban contaminants typically accumulate during the dry season and may be washed off when adequate rainfall returns in the fall to produce a "first flush" of runoff. The amount of contaminants discharged in stormwater drainage from developed areas varies based on a variety of factors, including the intensity of urban uses such as vehicle traffic, types of activities occurring on-site (e.g., office, commercial, industrial), types of contaminants used on-site (e.g., pesticides, herbicides, cleaning agents, petroleum byproducts), contaminants deposited on paved surfaces, and the amount of rainfall.

The storm drainage system for the Proposed Project Alternative, as described in the Folsom Plan Area Specific Plan (City of Folsom 2009) and Storm Drainage Masterplan (MacKay & Somps 2007), would be designed to direct runoff flows into on-site detention basins (and one off-site basin west of Prairie City Road), and would incorporate water quality treatment. The stormwater quality treatment configurations would use treatment methodologies as described in the Stormwater Quality Design Manual (SSQP 2007b) and approved by the City. The Sacramento NPDES MS4 Permit (described in above in the "Regulatory Framework" section), which applies to this project area, requires that "priority new development and redevelopment projects shall integrate LID principles early in the project planning and design process." The goal is to increase infiltration potential, evaporation, and surface storage while reducing excess stormwater runoff. The LID techniques would consist of a series of surface swales, catch basins, drainage inlets, underground pipes and detention basins. New stormwater facilities would be placed along the natural drainage courses within the SPA to the extent practicable so as to mimic the natural drainage patterns. The goal of the LID features would be to mimic the predevelopment hydrology at the SPA by using the above decentralized design techniques that infiltrate, filter, store, evaporate, and detain runoff close to the source of rainfall.

The proposed water quality detention basins were sized based on criteria outlined in the Stormwater Quality Design Manual for the Sacramento and South Placer Regions (MacKay & Somps 2007; SSQP 2007b). Table 3A.9-6 shows the preliminary water quality volumes required for each SPA subbasin (see Exhibit 3A.9-4) based on these criteria. At locations where subbasins discharge directly into a stormwater detention basin, the water quality volume could be added to the overall detention basin size. The water quality basin sizing and design configuration for each watershed would be finalized during the final design stages.

Water quality BMPs, including those to be used for the Proposed Project Alternative and shown in Table 3A.9-7, such as landscape/buffer strips, wetlands, infiltration trenches, swales, and detention basins have been shown to be successful in controlling water quality and avoiding water quality impacts (metals and organic compounds associated with stormwater are typically lost within the first few feet of the soil of the retention basins associated with groundwater [EPA 1983:7-24]). Pollutants are removed from stormwater in detention basins through gravitational settling and biological processes depending on the type of basin. Permanent ponds (i.e., micropools)

in dry weather may enhance pollutant removal through biological and chemical processes (SSQP 2007b:DB-2). To eliminate any flow increase caused by project development, and any erosion related to this increase, stormwater detention facilities would be constructed to maintain peak storm flows not to exceed the level existing before development, as shown on Table 3A.9-3 and illustrated in Exhibit 2-4 in Chapter 2, "Alternatives."

However, because final design plans and specifications have not been submitted to or approved by the City or El Dorado County (for off-site roadway connections), implementation of the Proposed Project Alternative could result in contaminants entering receiving waters, thus resulting in adverse effects from long-term urban runoff. Because the Proposed Project Alternative could result in impacts on water quality within on-site drainage channels and ultimately off-site drainage channels as a result of runoff from the SPA, the project-related water quality impacts would be both **direct** and **indirect**, and would be **potentially significant**.

Table 3A.9-6
Project Site Water Quality Subbasins and Volumes

Subbasin	Total Subbasin Area (acres)	Storage Volume (inches) [1]	Storage Volume (acre-feet) [1]
ACD9	40	0.16	0.52
ACD9a_1	84.1	0.28	1.98
ACD9a_2	14.7	0.24	0.3
ACD9c	53.7	0.16	0.71
ACD9e	8.79	0.21	0.16
ACD6a	142	0.65	7.65
ACD6b	97.1	0.54	4.4
ACD6d	158	0.56	7.41
ACD6f	89.5	0.75	5.61
ACD5a	25.3	0.21	0.45
ACD5b_1	16	0.27	0.36
ACD5b_2	10.8	0.47	0.42
ACD5b_3	7.1	0.18	0.11
ACD4a_1	56	0.38	1.78
ACD4a_2	21.7	0.05	0.09
ACD4a_3	13.2	0.4	0.44
ACD4a_4	36.4	0.35	1.07
ACD4a_5	4.42	0.08	0.03
ACD4b_1	26.3	0.46	1
ACD4b_2	51.1	0.25	1.07
ACD3a	89.4	0.39	2.88
ACD3b	33	0.33	0.9
ACD2a	83	0.16	1.1
ACD2b_1	105	0.39	3.43
ACD2b_2	45.3	0.13	0.5
ACD2c_1	65	0.21	1.14
ACD2d	81.8	0.48	3.25
ACD1a	28.1	0.21	0.49
ACD1c_1	89.1	0.32	2.38
ACD1c_2	9.26	0.13	0.1
ACD1d_1	10.8	0.37	0.34
ACD1d_2	23.2	0.61	1.19
ACD1d_3	61.1	0.38	1.96
ACD1e_1	247	0.36	7.47
ACD1f_1	22.2	0.68	1.26
CCD1	93.2	0.36	2.81
CCD1a	25	0.86	1.8
CCD1b	53.2	0.22	0.97
CCD2	203	0.25	4.24
BCD2	181	0.39	5.81
BCD3	124	0.16	1.7

Table 3A.9-6
Project Site Water Quality Subbasins and Volumes

Subbasin	Total Subbasin Area (acres)	Storage Volume (inches) [1]	Storage Volume (acre-feet) [1]
BCD4	39	0.13	0.42
ACDhwy_50	38.8	0.79	2.54
ACDhwy_50_a	10.9	0.86	0.78
CoyCrD	82.9	0.29	1.97
AC9a	30.1	0.05	0.12
AC9b	88	0.1	0.73
AC9d	66.4	0.15	0.81
AC9e	53	0.37	1.62
AC9f	74.4	0.51	3.18
AC8a	29.7	0.33	0.81
AC8b	12.6	0.67	0.7
AC7a	71.4	0.08	0.45
AC7b	40.5	0.2	0.67
AC6e	38.7	0.19	0.62
AC6f	86.5	0.45	3.28
AC6g	5.91	0.07	0.03
AC5a	66.3	0.05	0.27
AC5b	5.28	0.06	0.03
AC5c	51.1	0.05	0.21
AC4	36.8	0.08	0.26

Note: [1] This volume incorporates a 48-hour design drawdown period. This is the time that a volume of water must be detained to achieve the maximum extent practicable pollutant removal (SSQP 2007b:DB-2).
Source: MacKay & Somps 2007

Mitigation Measure: Implement Mitigation Measure 3A.9-3.

Implementation of Mitigation Measure 3A.9-3 would reduce the potentially significant impact associated with potential long-term water quality effects of urban runoff under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives to a **less-than-significant** level because the project applicant(s) of all project phases would develop and implement a BMP and water quality maintenance plan that would demonstrate to the City that the Proposed Project Alternative would conform to applicable state and local regulations restricting surface water runoff including the Stormwater

Quality Design Manual for the Sacramento and South Placer Regions (SSQP 2007b) and El Dorado County's SWMP (El Dorado County 2004). The permanent BMPs proposed for the stormwater treatment system and described in detail in the SSQP have been shown to be effective in reducing contaminant levels in urban runoff (EPA 1999, CASQA 2003). However, some of the off-site elements fall under the jurisdiction of El Dorado County and Caltrans; therefore, neither the City nor the project applicant(s) would have control over their timing or implementation.

Table 3A.9-7 Expected Pollutant Removal Efficiency of BMPs					
BMP Type	Typical Pollutant Removal (%)				
	Suspended Solids	Nitrogen	Phosphorus	Pathogens	Metals
Structural BMPs					
Dry detention basins	30–65	15–45	15–45	<30	15–45
Wet detention/retention basins	50–80	30–65	30–65	<30	50–80
Constructed wetlands	50–80	<30	15–45	<30	50–80
Infiltration basins	50–80	50–80	50–80	65–100	50–80
Infiltration trenches, dry wells	50–80	50–80	15–45	65–100	50–80
Porous pavement	65–100	65–100	30–65	65–100	65–100
Grassed swales	30–65	15–45	15–45	<30	15–45
Vegetated filter strips	50–80	50–80	50–80	<30	50–80
Surface sand filters	50–80	<30	50–80	<30	50–80
Other media filters	65–100	15–45	<30	<30	50–80
Construction Site BMPs					
Silt fence	50–80				
Sediment basin	55–100				
Sediment trap	60				
Note: BMP = best management practices Source: EPA 1999					

IMPACT 3A.9-4 Potential Exposure of People or Structures to a Significant Risk of Flooding as a Result of the Failure of a Levee or Dam. *The SPA is not in an area protected by levees and is not located within the Folsom Dam inundation zone; however, there are existing dams impounding water within and upstream of the SPA.*

On-Site and Off-Site Elements

NP

Under the No Project Alternative, limited development of up to 44 individual residences could occur under the existing Sacramento County zoning AG-80, and no off-site water facilities would be constructed. Because the SPA is not in an area protected by levees, is not within the identified flood hazard zone of the Folsom Dam, and is also within Sacramento County, which implements the Automated Local Evaluation in Real Time (ALERT) system, **direct** and **indirect** impacts related to flooding as a result of the failure of a levee or dam are considered **less than significant**. ***[Lesser]***

NCP, PP, RIM, CD, RHD

For planning purposes, the State Office of Emergency Services (OES), with information from the U.S. Bureau of Reclamation and DWR, has the responsibility to provide local governments with critical hazard response information, including information related to potential flooding from levee failure or dam inundation. The SPA is

not in an area protected by levees; however, Folsom Dam is located approximately 4.5 miles north of the SPA. The OES has mapped the dam inundation zones in Sacramento County for Folsom Dam. The map shows that while a relatively large portion of Sacramento County and the City of Folsom would be inundated with water in the event of a dam or dike failure, the SPA is outside of the mapped inundation area (Sacramento County 2007b:383-384, Figure III-4). In addition, a dam failure plan, the flooding ALERT system, and evacuation procedures are integrated into Sacramento County's Emergency Operations Plan (City of Sacramento 2005:7.2-10). Further, the occurrence of dam inundation (due to dam or dike failure) is based on extremely remote conditions (Sacramento County 2007b:383) and implementation of any of the project alternatives would do nothing to increase the potential for dam failure.

There are five ponds within and three ponds upstream (to the south of White Rock Road) of the SPA that appear to hold water throughout the year. They are formed behind existing dams in topographically low areas along existing drainages located within subwatersheds AC1d, AC2d, AC9a, AC5b, and OF 4a and OF 4b, respectively (see Exhibit 3A.9-2). The pond in subwatershed AC9a, estimated to be approximately 3 to 5 surface acres, is formed by an earthen dam approximately 15 to 20 feet in height on the north side of the pond; the depth and associated volume of the pond is unknown (GenCorp Realty Investments, LLC 2008). The height of the other dams and/or volume of water in the associated impoundments are unknown. Due to the unknown size of the dams and associated water impoundment volumes, it is currently unknown whether or not any of the dams are under the jurisdictional oversight of the DSOD. Additionally, evaluation of the dams has not been conducted to determine stability, potential for risk of failure, and/or estimated area of downstream inundation in the event of failure.

While unlikely based on field observation of what appear to be relatively small dimensions, is currently unknown whether or not the dams are within the jurisdictional oversight of the DSOD. Because the current condition (e.g., stability) of the dams within and upstream of the SPA are unknown and the area of downstream inundation in the event of failure is also uncertain, implementation of the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives could result in people or structures downstream of these features to be exposed to a significant risk of flooding if the dams were to fail. Therefore, project-related impacts related to the failure of a dam are considered **direct** and **potentially significant. No indirect** impacts would occur. ***[Similar]***

> Mitigation Measure 3A.9-4: Inspect and Evaluate Existing Dams Within and Upstream of the Project Site and Make Improvements if Necessary.
>
> Prior to submittal to the City of tentative maps or improvement plans the project applicant(s) of all project phases shall conduct studies to determine the extent of inundation in the case of dam failure. If the studies determine potential exposure of people or structures to a significant risk of flooding as a result of the failure of a dam, the applicants(s) shall implement of any feasible recommendations provided in that study, potentially through drainage improvements, subject to the approval of the City of Folsom Public Works Department.
>
> **Implementation:** Project applicant(s) of all on-site project phases and off-site elements.
>
> **Timing:** Prior to submittal to the City of tentative maps or improvement plans.
>
> **Enforcement:** City of Folsom Public Works Department.

Implementation of Mitigation Measure 3A.9-4 would reduce the potential for increased risk of flooding s a result of the failure of a dam under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives to a **less-than-significant level** because the project applicant(s) of all project phases would demonstrate that people or structures would not the small dams and associated impoundments within and upstream of the SPA meet minimum stability requirements and not exposure of people or structures to a significant risk of flooding.

IMPACT 3A.9-5 Potential Exposure to 200-Year (0.005 AEP) Flood Prior to Implementation of SB 5. *A delineation of the proposed 200-year (0.005 AEP) floodplain has been developed for the SPA and all development activities would be planned consistent with SB 5 requirements.*

On-Site and Off-Site Elements

NP

The 200-year (0.005 AEP) floodplain as defined by California Water Code Section 9610(a), pursuant to SB 5 (described in the "Regulatory Setting" section above) has not been delineated for the SPA for the No Project Alternative. Under the No Project Alternative, the agricultural activities that could occur under the existing Sacramento County AG-80 zoning, including the construction of up to 44 individual rural residences, would not appreciably alter the existing hydrology and drainage conditions at the SPA. Furthermore, no off-site water facilities would be constructed. Although it has not been determined what areas in the SPA are within the 200-year (0.005 AEP) floodplain under the existing condition, SB 5 prohibits local governments from approving entitlements or permits, including permits resulting in the construction of a new residence, in a flood hazard zone unless 200-year (0.005 AEP) flood protection is provided pursuant to implementation of the Central Valley Flood Protection Plan. Thus, **no direct** or **indirect** impacts would occur. ***[Similar]***

NCP, PP, RIM, CD, RHD,

A delineation of the proposed 200-year (0.005 AEP) floodplain has been developed for the SPA (see Exhibits 3A.9-5a and 3A.9-5b). All development activities associated with the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives would be planned consistent with SB 5 (described in the "Regulatory Framework" section above). Therefore, implementation of the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives would not subject people and/or structures to **direct** or **indirect** impacts related to flooding as a result of a 200-year (0.005 AEP) storm. This would be a **less-than-significant impact**. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.9-6 Potential Effects on Groundwater Recharge. *Shallow and deep percolation of rainwater and related runoff and consequent depth to groundwater could be affected locally by the development of additional impervious surfaces, which could limit infiltration and recharge.*

On-Site and Off-Site Elements

NP

Under the No Project Alternative, up to 44 rural residences could be developed and agricultural activities could continue under the existing AG-80 land use and zoning designation. Because no off-site water facilities would be constructed, new groundwater wells would likely be installed to support agricultural and/or rural residential development under the existing Sacramento County agricultural zoning classification, AG-80. Although well construction would be required to comply with appropriate Sacramento County well installation policies, in addition to Section 13801 of the California Water Code, localized groundwater use would be expected to increase over existing levels, and as compared to levels under the Proposed Project Alternative and the other four alternatives (since no on-site groundwater use is proposed). Thus, **direct** and **indirect** impacts to groundwater recharge under the No Project Alternative would be **potentially significant**. ***[Greater]***

NCP, RIM, CD

Impacts under the No USACE Permit and Resource Impact Minimization Alternatives would be less than those of the Proposed Project Alternative because an additional 375 acres and 500 acres, respectively, of land throughout the SPA would be designated as open space, thus increasing the area available for infiltration and recharge. Impacts under the Centralized Development Alternative would be less than those of the Proposed Project Alternative because the total acreage of residential development would be reduced by approximately 387 acres within the eastern portion of the SPA.

Those areas within the SPA that are most conducive to groundwater recharge, e.g. the Alder Creek stream and tributary corridors would generally be maintained in open space and the retention basins and the LID features described in Mitigation Measure 3A.9-3, would be sited and designed to maximize infiltration under the Resource Impact Minimization, Centralized Development, and No USACE Permit Alternatives. Furthermore, no wells would be established for domestic use, and increased seasonal groundwater recharge from landscape irrigation activities would occur. Therefore the **direct** and **indirect** impacts on groundwater recharge under these alternatives would be considered **less-than-significant.** ***[Lesser]***

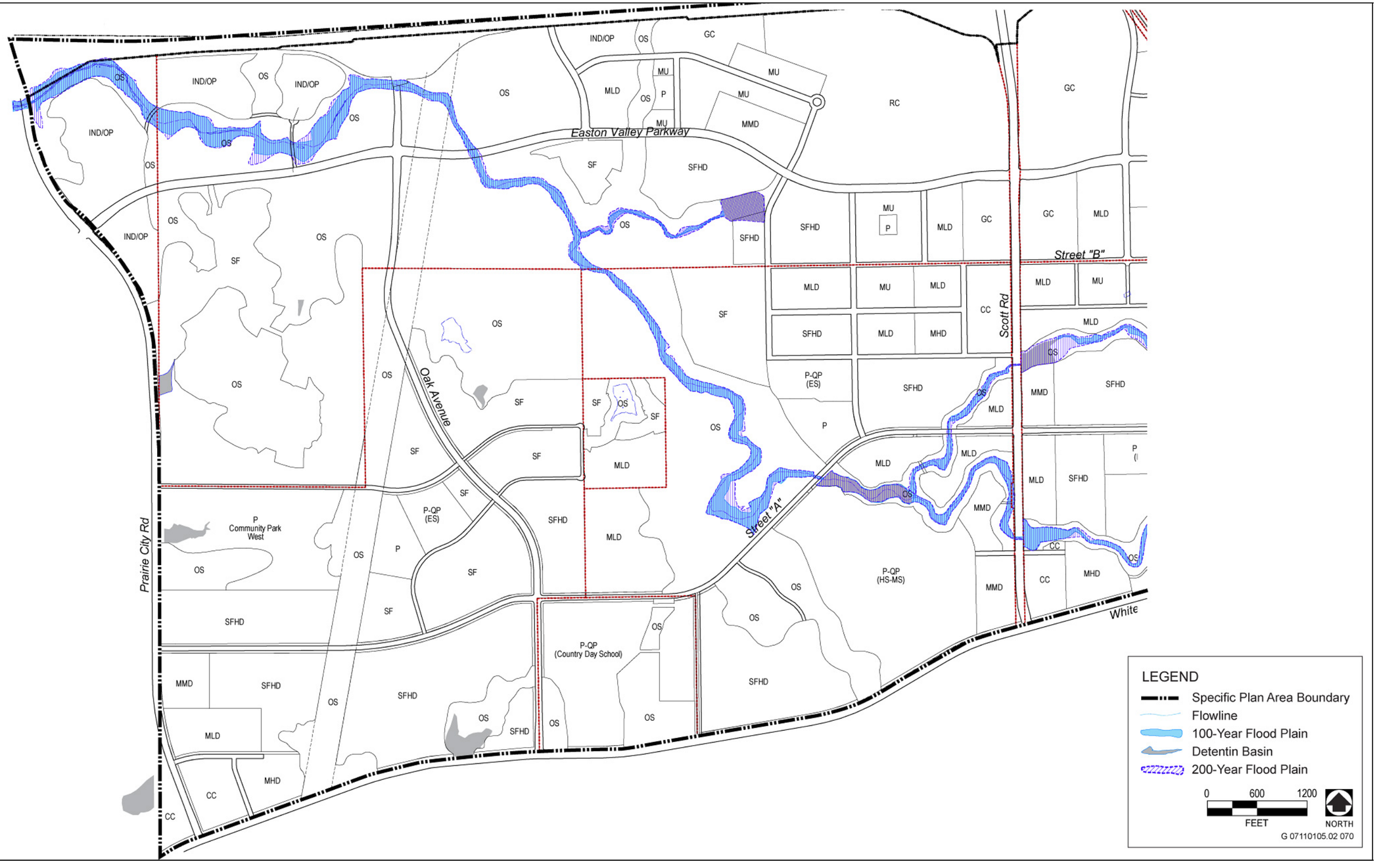
Mitigation Measure: No mitigation measures are required.

PP, RHD

Project-specific water utility, supply, and demand impacts are addressed in Section 3B.16, "Utilities and Service Systems – Water" of this EIR/EIS. This analysis focuses on the potential effects related to on-site groundwater recharge from proposed on-site development. Planned development of the Proposed Project Alternative would include increases in impervious surfaces and the amount of surface runoff generated by proposed development. Of the approximately 3,500 acres at the SPA, approximately 2,330 acres would be developed with residential and commercial land uses, and schools and infrastructure. The remaining 1,200 acres would be retained as open space, including the preservation and enhancement of the Alder Creek stream corridor and associated tributaries. The retention basins and LID features described in Mitigation Measure 3A.9-3 would provide some groundwater recharge through localized infiltration where subsurface conditions allow. The retention areas would be sited and designed to maximize infiltration into the ground. Under the Reduced Hillside Development Alternative, while the residential development on the eastern hillsides would be reduced, thereby providing some groundwater recharge in this area, the total acreage of development subjected to construction activities under this alternative would be reduced by only approximately 64 acres, with an additional 19 acres of commercial and industrial development, resulting in a nearly identical area subject to construction activities as compared to the Proposed Project Alternative.

As described in Subsection 3A.9.1, "Groundwater Hydrology" above, soils in the SPA and surrounding area have a poor capacity for groundwater recharge, with most of the substantial recharge occurring along active stream channels. Because there is little groundwater underneath the SPA, and the amounts vary locally and seasonally, it has traditionally been used for grazing as opposed to irrigation-dependent agriculture. Those areas within the SPA that are most conducive to groundwater recharge, e.g. the Alder Creek stream and tributary corridors would generally be maintained in open space and the retention basins, and the LID features described in Mitigation Measure 3A.9-3, would be sited and designed to maximize infiltration under the Proposed Project and Reduced Hillside Density Alternatives. Furthermore, no new wells would be established for domestic use, and increased seasonal groundwater recharge from landscape irrigation activities would occur. Therefore, **direct** and **indirect** impacts on groundwater recharge under the Proposed Project and Reduced Hillside Density Alternatives would be considered **less-than-significant.** ***[Similar]***

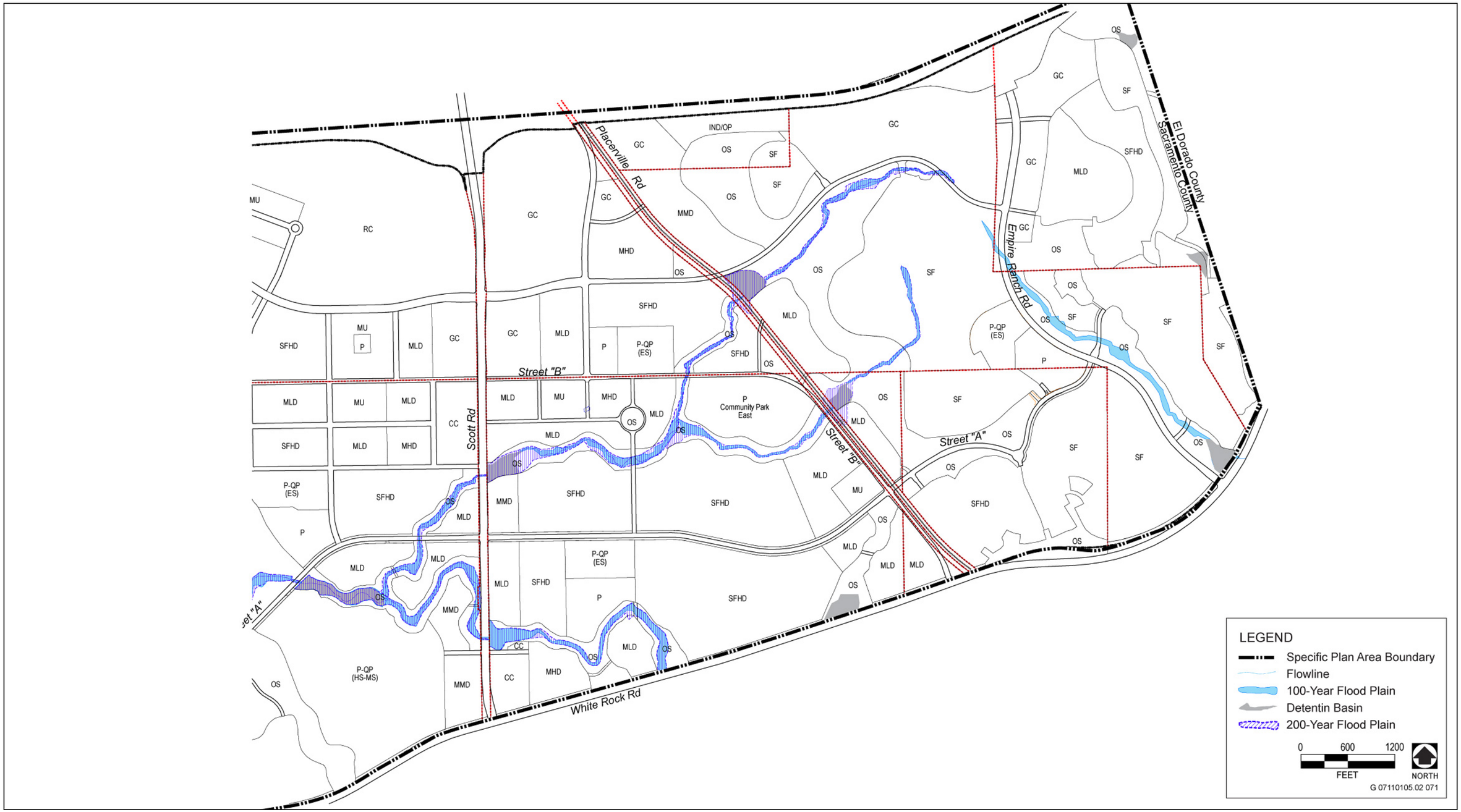
Mitigation Measure: No mitigation measures are required.



Source:MacKay & Somps 2010

Proposed 200-Year (0.01 AEP) Floodplains (Western Half of SPA)

Exhibit 3A.9-5a



Source: MacKay & Somps 2010

Proposed 200-Year (0.01 AEP) Floodplains (Eastern Half of SPA)

Exhibit 3A.9-5b

3A.9.4 RESIDUAL SIGNIFICANT IMPACTS

With implementation of the mitigation measures listed above, project implementation would not result in any residual significant impacts related to short-term alteration of drainages and associated surface water quality and sedimentation, increased risk of flooding or hydromodification from stormwater runoff, water quality and hydrology effects from long-term urban runoff, or groundwater recharge.

However, some of the off-site elements (two roadway connections in El Dorado County, detention basin in Sacramento County, and U.S. 50 interchange improvements) fall under the jurisdiction of El Dorado County, Sacramento County, and Caltrans, respectively; therefore, neither the City nor the project applicant(s) would have control over the timing or implementation of mitigation measures for these off-site elements. Because the City does not control implementation of mitigation measures for off-site improvements constructed in areas under the jurisdiction of El Dorado and Sacramento Counties, or Caltrans, Impacts 3.10-1, 3.10-2, 3.10-3, and 3.10-5 are considered potentially significant and unavoidable for off-site improvements which would be located in Sacramento County, El Dorado County, or Caltrans jurisdiction.

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This section was prepared by RMC Water and Environment.

3B.9 HYDROLOGY AND WATER QUALITY – WATER

3B.9.1 AFFECTED ENVIRONMENT

REGIONAL HYDROLOGY

The "Water" Study Area is characterized by a typical Mediterranean climate with wet, cool winters, and warm, dry summers. Most of the rainfall occurs between November and April with an average annual rainfall of 18 to 21 inches for the "Water" Study Area. The 10-year, 24-hour estimated precipitation amount for the "Water" Study Area is approximately 2.5 inches and the 100-year, 24-hour estimated precipitation is 3.75 inches (Western Regional Climate Center 2004).

The "Water" Study Area is located north of the Sacramento-San Joaquin Delta (Delta) within the Valley-American Hydrologic Unit, which is located at the southern end of the 27,210-square mile Sacramento River Basin. The Valley-American Hydrologic Unit is divided into two hydrologic areas, which are separated by the Lower American River, with the Coon-American Hydrologic Area (HA) located to the north and the Morrison Creek HA to the south. Natomas Central Mutual Water Company's (NCMWC's) service area or Zone 1 of the "Water" Facility Study Area, is situated in the western portion of the Coon-American HA along the Sacramento River. The conveyance improvements proposed by the City are located within Zone 4 of the "Water" Study Area and correspond with the northeastern section of the Morrison Creek HA. Exhibit 3B.9-1 illustrates this relationship. Section 3A.9, "Hydrology and Water Quality – Land" provides a description of the hydrologic conditions within the SPA.

In addition to these hydrologic areas, the "Water" Study Area includes an approximately 20-mile stretch of the Sacramento River; between River Miles 66 and 46. This portion of the Sacramento River corresponds with Zone 2 of the "Water" Study Area and would convey surface water not diverted by NCMWC to the south to the existing Freeport Project intake facility.

SACRAMENTO RIVER – ZONE 2 OF THE "WATER" STUDY AREA

Flows in the Sacramento River vary widely and are influenced by rainfall and upstream dams and diversions. Typically, the flow is highest during the winter and spring months and lowest in the summer and late fall. During the period of record (1949 through 2008), the maximum average daily flow at the Freeport gauging station was 115,000 cubic feet per second (cfs) on February 19, 1986 with a corresponding stage height of 25.00 feet; the minimum average daily flow was 3,970 cfs on October 15, 1977 (U.S. Geological Survey [USGS] 2003).

Over the past century, numerous water projects have been constructed as part of the Central Valley Project (CVP), the State Water Project (SWP), and other water storage and delivery projects developed by local water districts or purveyors. Total reservoir storage capacity in or affecting the Sacramento River basin is estimated at approximately 15,000,000 AF – or 15.0 MAF. Historically, these reservoirs have been operated to provide agricultural and domestic water supplies and flood control and, more recently, for other purposes including recreation and environmental releases (CALFED 2000).

To support agriculture and the urban populations of central and southern California, the CVP and State Water Project (SWP) were constructed to store and convey water from areas with surplus supplies to users in areas where demands exceed available local supplies. Exhibit 3B.9-1 shows the major components of the CVP and SWP that are located in the Sacramento River basin. The Sacramento River serves as the primary pathway to convey water southward to the Delta where water is re-diverted for agricultural and urban uses in the San Francisco Bay Area, San Joaquin Valley and southern California.

Over 400 water diversion intakes have been identified on the Sacramento River between Shasta Dam and the City of Sacramento. Of these diversion facilities, about 96% are reported to be unscreened or inadequately screened to protect anadromous fish from entrainment. The majority of these diversion intakes are located on the 140-mile reach between the City of Sacramento and the Colusa/Glenn County line (Herren and Kawasaki 2001).

Central Valley Project

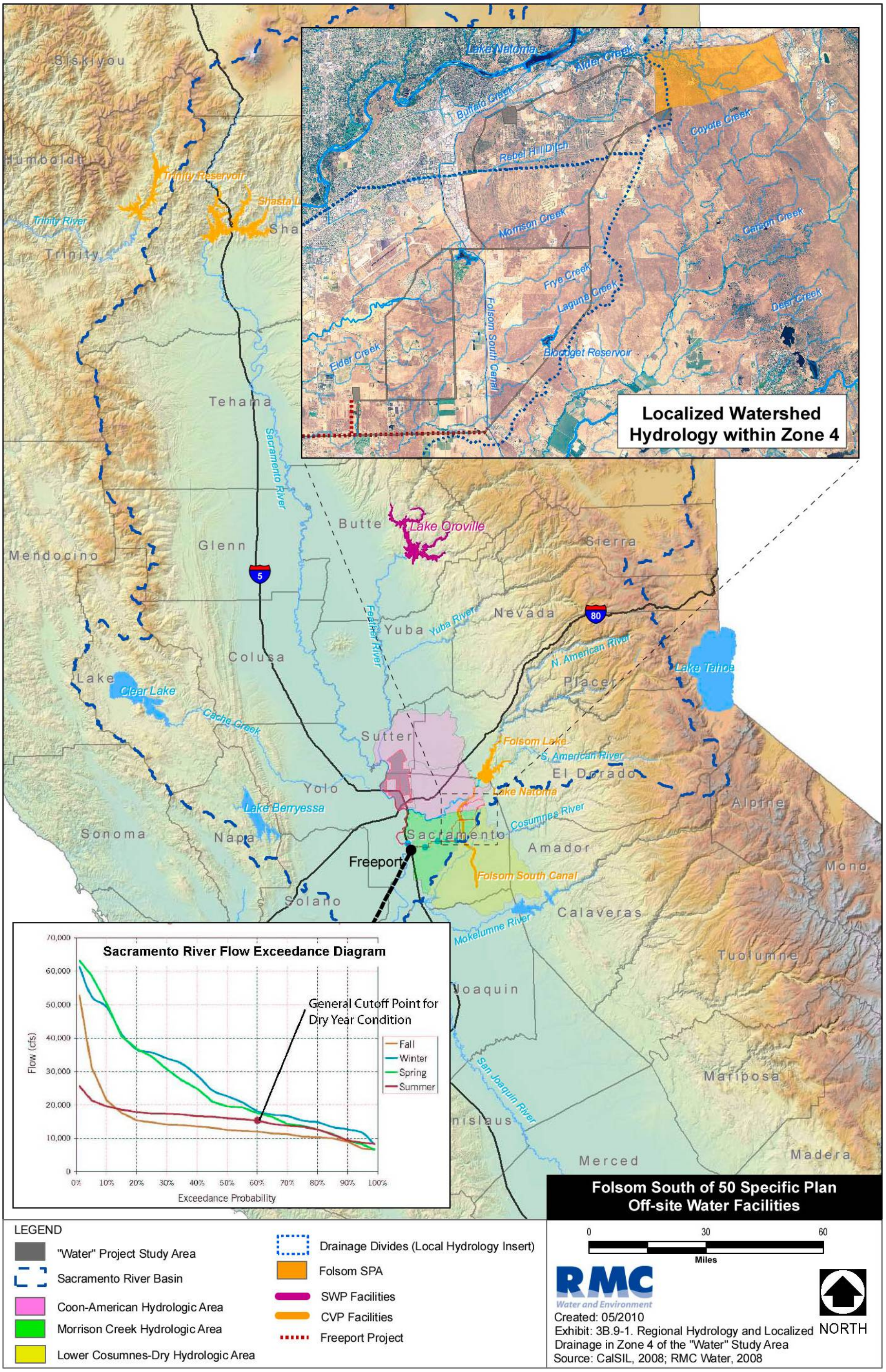
The CVP facilities consist of a series of reservoirs and conveyance canals on the Sacramento, American, Stanislaus, and San Joaquin Rivers. Major CVP reservoirs in the Sacramento River Basin are listed in Table 3B.9-1. The CVP is operated and maintained by the U.S. Bureau of Reclamation (Reclamation) and delivers approximately 7.0 MAF/yr of water to portions of the Sacramento and San Joaquin Valleys; communities in Placer, El Dorado, Sacramento Counties, the east and south San Francisco Bay areas; and fish hatcheries and wildlife refuges in the Central Valley.

Table 3B.9-1
Major Federal and State Reservoirs in the Sacramento River Basin

Reservoir Name	Stream	Capacity (TAF)	Owner
Shasta	Sacramento River	4,552	Recalamtion
Davis	Big Grizzly Creek	84	DWR
Antelope	Indian Creek	22	DWR
Frenchman	Little Last Chance Creek	55	DWR
Thermalito	Feather River	81	DWR
Oroville	Feather River	3,537	DWR
Folsom	American River	974	Reclamation
Stony Gorge	Stony Creek	50	Reclamation
East Park	Stony Creek	50	Reclamation
Whiskeytown	Clear Creek	241	Reclamation

Notes: Reclamation = U.S. Bureau of Reclamation; DWR = California Department of Water; TAF = thousand acre-feet
Source: SWRCB 1999

The CVP provides water to local users according to provisions of existing settlement contracts and water service contracts. Settlement contracts were executed with water users that hold senior water rights that were established before the CVP or were established independent of the CVP. These water rights include pre-1914 and post-1914 appropriative water rights. Generally, for these settlement contracts, Reclamation agreed to deliver a "base supply" corresponding to the estimated amount of the water contractor's prior-1914 water rights, and sometimes additional amounts of CVP water. Water service contracts were established with other parties who did not hold any prior rights to water on the Sacramento River or who desired to acquire additional water supplies beyond those provided by their water rights. The NCMWC holds a settlement contract with Reclamation that has both "base supply" and "project water" elements. The City would receive an assignment of part of that contract's project water.



Surface Water Hydrology and Localized Drainage **Exhibit 3B.9-1**

State Water Project

The SWP is administered by the California Department of Water Resources (DWR) and delivers water from northern California to users in portions of Butte and Sutter Counties, the San Francisco Bay area, San Joaquin Valley, and southern California. Twenty-nine entities have long-term water supply contracts for SWP water supplies with maximum delivery amounts totaling about 4.2 MAF, of which about 4.1 MAF are delivered to contracting agencies with service areas located south of the Delta.

Lake Oroville is used to store and regulate deliveries of SWP water (see Exhibit 3B.9-1). Water is released from Lake Oroville down the Feather and Sacramento Rivers and eventually flows into the Delta. Some of this water is diverted into the North Bay Aqueduct, which serves communities in Napa and Solano Counties. The remaining water travels further south in the Delta where it is re-diverted at the H.O. Banks Pumping Plant to the California Aqueduct.

Water-Year Classification and Flow Exceedance

The Sacramento Valley 40-30-30 Index (Index) was developed by the State Water Resources Control Board (SWRCB) as part of its Bay-Delta regulatory activities. The Index is computed as a weighted average of a water year's April-July unimpaired runoff (40%), the same water year's October–March unimpaired runoff (30%), and the previous water year's Index (30%). A cap of 10 MAF is put on the previous water year's index in order to account for required flood control reservoir releases.

A water year with a 40-30-30 Index equal to or greater than 9.2 MAF is classified as "wet," while a water year with an Index equal to or less than 5.4 MAF is classified as "critical." Water years with 40-30-30 index values between 5.4 and 9.4 MAF are classified as "above normal," "below normal," or "dry" (DWR 2004a).

Based on 30 years of data records (1968 through 1998) and spanning a variety of water year types, individual monthly average flows in the Sacramento River have ranged from a low of 4,500 cfs in October 1978 to a maximum of 87,000 cfs in January 1997. Overall, average monthly flows for the 30 years of record range between 13,000 and 40,600 cfs, with the lowest flows occurring in October and highest flows in February. The 30-year average monthly flow during the wetter months of December through May is 32,200 cfs. During the typically drier months of June through November the average monthly flow is 16,500 cfs. (Central Sacramento County Groundwater Management Plan [CSCGMP] 2006)

The exceedance diagram for the Sacramento River, based on 2020 forecasted conditions (this year is used in statewide surface water models), for each season is provided in Exhibit 3B.9-1. Forecasted conditions project the operation of reservoirs and regulation of stream flows into the future while imposing 73 years of historical hydrology on this operational scheme. For example, Exhibit 3B.9-1 indicates that up to approximately 15,000 to 27,000 cfs of Sacramento River water flows past Freeport Project diversion during the summer 60% of the time (see location of red dot on Exhibit 3B.9-1). This is the general cutoff point for a dry year condition. The remaining 40 percent of the time, approximately 8,000 cfs to 15,000 cfs flows past Freeport. More important is that approximately 8,000 cfs is flowing in the Sacramento River in all seasons (100% of the time), even in the most critically dry conditions (CSCGMP 2006).

California Simulation Model II

The California Simulation Model II (CALSIM II) is a water resources planning model for the CVP and SWP Systems[1], jointly developed by DWR and Reclamation. The primary purpose of CALSIM II is to evaluate the water supply reliability of the CVP and SWP with and without various assumed facilities, and with different modes of facility operations. Operations of many other local facilities were also incorporated at varying levels of

[1] CALSIM II's geographic coverage includes the valley floor drainage area of the Sacramento and San Joaquin Rivers, upper Trinity River, a portion of the Tulare Basin, and Southern California areas served by the CVP and SWP.

detail. For this analysis, the CALSIM II model includes the operation of the Freeport Project and applies the Long-Term CVP and SWP Operations Criteria and Plan (OCAP) as the modeling base. Detailed modeling assumptions can be found in the OCAP Biological Assessment (Reclamation 2009) and in the Benchmark Studies Assumptions Document (Reclamation/DWR 2002).

LOCALIZED DRAINAGE FOR ZONE 4 OF THE "WATER" STUDY AREA

Morrison Creek Stream Group

Much of Zone 4 of the "Water" Study Area is located within the drainage are comprising the Morrison Creek Stream Group, which drains an area of approximately 53.4 square miles. These drainage features are illustrated in the insert of the upper right-hand corner of Exhibit 3B.9-1. Stream flow data has been collected from 1959 through 1987 and again in 1997 through present. Based on these periods of measurement, the maximum discharge for Morrison Creek was 2,730 cubic feet per second (cfs), which occurred on February 17, 1986. No observed flow occurred during the summers of 1960, 1962, and 1965 (USGS 2003).

Morrison Creek and the other contributing streams (Elder, Frye, and Laguna Creeks) are mostly channelized west of Sunrise Boulevard. Each drainage feature has been significantly altered from its original drainage path into a more-or-less linear, trapezoidal cross-section containing little or no riparian vegetation. Flows within the winter months generally consist of localized stormwater runoff. During the summer months, two of the creeks experience low-velocity return flows from a wide-range of urban uses. Typically, the flow is highest during the winter and spring months and lowest in the summer and late fall. Flows within Morrison Creek either empty into Beach-Stone Lakes or are pumped into the Sacramento River by a series of pumps operated by the City of Sacramento.

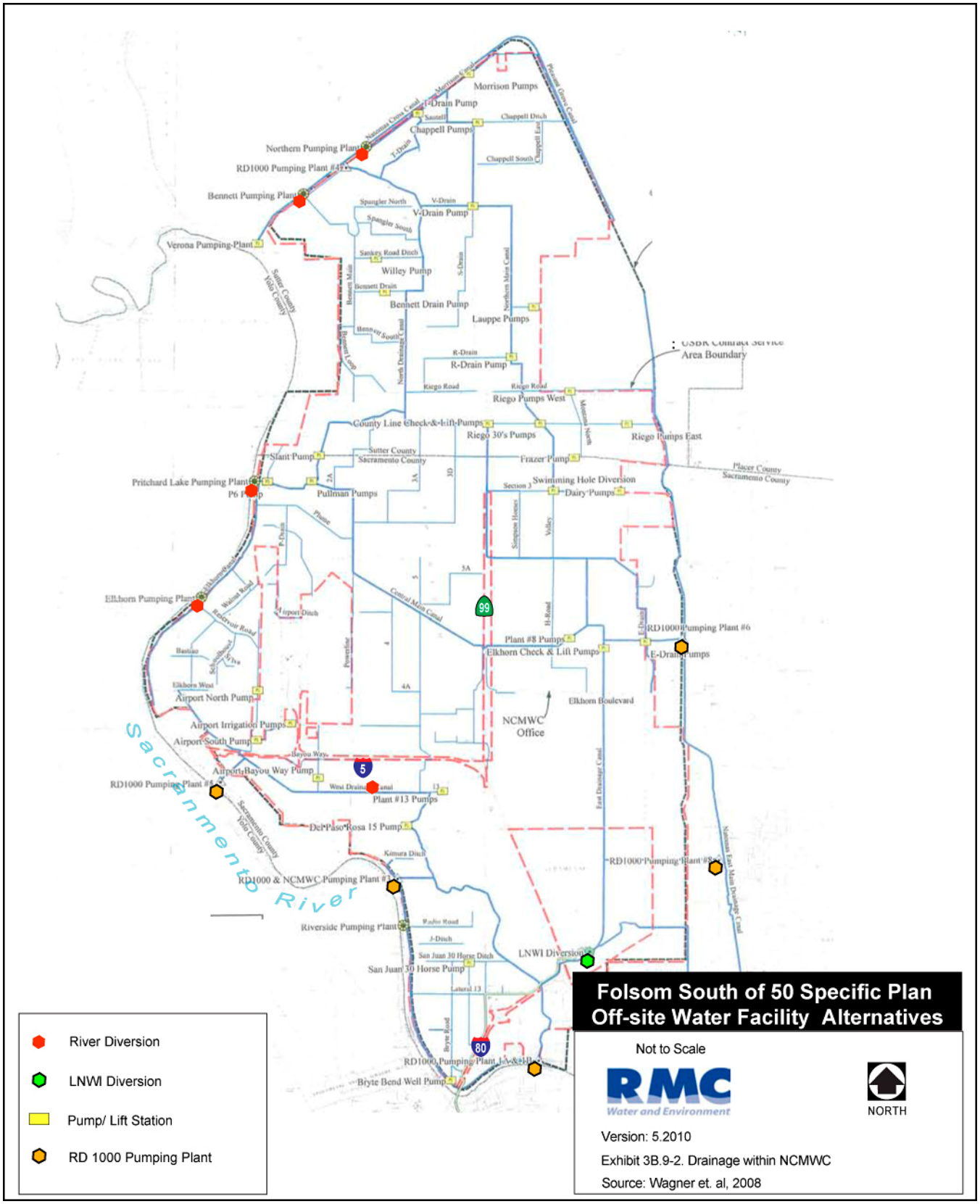
Alder and Buffalo Creeks

Surface runoff in areas generally north of White Rock Road drains into Alder Creek or Buffalo Creek. Alder Creek drains an area of 7,146 acres into the American River via Lake Natoma (MacKay & Somps 2004). Alder Creek is an unlined, perennial stream within a relatively deep ravine. It contains a small pond (Alder Creek Pond) that was created by a human-made impoundment about 1,000 feet east of Folsom Boulevard.

Buffalo Creek drains a 470-acre area south of Alder Creek's watershed and drains into an aqueduct off the American River approximately one mile west of Zone 4 of the "Water" Study Area (see inset in Exhibit 3B.9-1). Buffalo Creek between the Aerojet administrative complex and the American River is an improved, unlined trapezoidal drainage and flood control channel (MacKay & Somps 2004). Buffalo Creek crosses the FSC through a 20-foot-wide concrete flume and then flows northerly through culverts under the Regional Transit Light Rail tracks, Folsom Boulevard, and U.S. 50. Large diameter culvert crossings are also located at Coloma Road, Gold Express Drive, Gold Country Drive, and South Bridge Street.

NATOMAS CENTRAL MUTUAL WATER COMPANY SERVICE AREA – ZONE 1 OF THE "WATER" STUDY AREA

NCMWC currently maintains three water-pumping plants along the Sacramento River and two along the Natomas Cross Canal (see Exhibit 3B.9-2). These pumping plants divert surface water into NCMWC's service area. Currently, the combined Sacramento River diversion capacity for the five systems is 630 cfs. In cooperation with the California Department of Fish and Game (DFG) and Reclamation, NCMWC is proposing to consolidate its existing diversion/intakes into two new facilities with fish screens on the Sacramento River. Further information on this proposal is provided in the supporting EIR/EIS (State Clearinghouse No. 2003092006), which is available for download at http://www.usbr.gov/mp/nepa/documentShow.cfm?Doc_ID=3301.



NCMWC Service Area and Drainage Facilities **Exhibit 3B.9-2**

Within the NCMWC's service area, surface water is distributed to its shareholders via five primary irrigation systems that are interlinked. The systems are supplied by the five existing pumping plants discussed above and include the Northern, Bennett, Central, Elkhorn, and Riverside System(s). NCMWC's canal systems use gravity for deliveries by maintaining water levels above that of surrounding ground levels. Reclamation District (RD) 1000's drainage canals also are used by NMCWC to distribute water within its service area (see Exhibit 3B.9-2).

NCMWC operates a closed system whereby tailwater (i.e., runoff from the fields) within the system is recirculated as irrigation supply. Water is pumped into the canal system, mixed with the tailwater, and distributed throughout the service area. The water is lifted again to the highline canals or applied directly to the fields.

The water is recirculated to the Riverside, Central, Bennett, and Northern systems using RD 1000's Pumping Plants Nos. 2, 3, and 4. Recirculation to the Elkhorn System has never been established due to lack of access to the drainage systems. At the end of the irrigation season, the tailwater is pumped back into the Sacramento River (generally, 2 to 5 thousand acre feet). The rice fields serve as a filtering mechanism that cleans the water as it is used during the irrigation season, and then held in a settling basin before release.

FLOODING

The Federal Emergency Management Agency (FEMA) provides information on flood hazard and frequency for cities and counties on its Flood Insurance Rate Maps (FIRM) and identifies designated zones of flood hazard potential. In general, flooding occurs along waterways and in areas with constricted storm drain systems or surface water ponding. The Sacramento River and its tributaries that flow through the Sacramento Valley form part of the drainage system covering over 27,210 square miles including northern portions of the Sierra Nevada and Coast Range. High flows of moderate duration within the river basin can result in flooding at downstream locations during intense rainstorms. In addition, snowmelt in the Sierra Nevada can produce high flows of longer duration during the spring.

In addition to the major reservoirs, which are also managed to provide storage for flood control purposes, a flood damage reduction system was constructed in the Sacramento Valley to control and direct high river flows away from urban areas and to minimize hazards to adjacent land uses, improvements, and populations. The flood damage reduction system consists of a series of levees and bypasses, located to take advantage of natural overflow basins. The system includes: levees along the Sacramento River south of Ord Ferry; levees along the lower portions of the Feather, Bear, and Yuba Rivers; levees along the American River; and, the Colusa, Sutter, and Yolo Bypasses.

Bypasses are located parallel to the Sacramento River and receive excess flows from the Sacramento, Feather, and American Rivers through a series of overflow channels and weirs. When flows of the Sacramento River are high, the three bypasses form one continuous waterway flowing to the Delta. The Sacramento River intersects these bypasses at several locations, including: the Butte Slough Outfall Gates, the Fremont Weir at Verona, the Sacramento Weir north of the American River confluence, and the East Levee Toe Drain at the terminus of the Yolo Bypass upstream of Rio Vista (U.S. Army Corps of Engineers [USACE] 2002). This system of levees and flood control weirs provides flood protection to Zones 1, 2, and 3 of the "Water" Study Area, portions of which are contained within the limits of a 100-year flood event (Federal Emergency Management Agency [FEMA] 1998). Zone 4 of the "Water" Study Area is generally situated outside the limits of the 500-year flood zone with the exception of localized drainage channels, which are delineated within the 100-year flood zone.

SEICHE/TSUNAMI

Tsunamis originating in the Pacific Ocean would dissipate in the San Francisco Bay, and therefore pose a negligible hazard to the "Water" Study Area, due to its inland location. Seiches, while having no recorded occurrences within Sacramento County in the historic record, could occur in the Sacramento River under the right circumstances thereby potentially overtopping levees or lead to levee failure. However, based on water depths

within Sacramento River and the low expected ground motions anticipated for the "Water" Study Area (see Section 3B.7, "Geology, Soils, and Paleontological Resources – Water"), the risk of a seiche of sufficient magnitude to overtop the levees is low and is not discussed further in the "Water" sections of this EIR/EIS.

WATER QUALITY

Sacramento River

Water quality within the Sacramento River is generally good, and supports a variety of beneficial uses including drinking water supplies, irrigation supplies, recreation, and protection of fish and other aquatic life (Domagalski et al., 2000). Because most of the water in the Sacramento River and its major tributaries (Yuba, Feather, and American Rivers) is derived from melting snow that enters the rivers through managed discharges from upstream reservoirs, these waterways yield exceptionally high quality runoff, carrying low concentrations of dissolved minerals, sediments, and other constituents.

As water moves downstream through the watershed, it accumulates various pollutants and constituents from a variety of sources. Major sources of constituents that are added to the river include: soils eroded from upland and riparian areas; discharges from agricultural practices, including increased salts, pesticides, and soils; runoff from urban land uses containing oils, grease, and other materials; and discharges from municipal wastewater treatment facilities that may contribute a variety of nutrients, organic materials and disinfectants, such as chlorine.

Untreated water diverted at the City of West Sacramento Bryte Bend WTP, located on the Sacramento River and at the approximate midway point between the NCMWC service area and the Freeport Project intake/diversion facility, shows good water quality with no constituents exceeding applicable drinking water standards or posing a threat to other beneficial uses. Table 3B.9-2 shows water quality data obtained from this location. As monitored at the Bryte Bend WTP, untreated water routinely meets all drinking water maximum concentration levels (MCLs) except for turbidity, odor, and iron. As is typical in an undisinfected water source, the water contains elevated bacterial counts. No regulated volatile organic chemicals or synthetic organic chemicals have been detected.

Table 3B.9-2
Raw and Treated Water Quality Data for the Bryte Bend Water Treatment Plant

Parameter	Units	Municipal Drinking Water Standards				Treated Sacramento River Water			Raw Sacramento River Water		
		MCL	SMCL	PHG (MCLG)	DLR	Min	Max	Avg	Min	Max	Avg
Aluminum	ppb	1,000		600	50	29	130	66	150	570	360
Arsenic	ppb	10		0.004	2	<2	<2	<2	1.5	2	2
Barium	ppm	1		2	.1	<0.1	<0.1	<0.1	23	33	27.6
Chromium (total)	ppb	50		(100)	10	<10	<10	<10	<5	2.4	NA
Fluoride	ppm	2.0		1	.1	<0.1	<0.1	<0.1	<0.1	0.1	NA
Nickel	ppb	100		12	10	<5	<5	<5	<5	3	NA
Nitrate as NO_3	ppm	45		45	2	<2	<2	<2	<0.1	0.87	NA
Selenium	ppb	50		(50)	5	<5	<5	<5	<5	<5	<5
Gross Alpha particle activity	pCi/L	15		(0)	3	<1.0	0.00	<2.25	<1	<1.03	NA
Gross Beta particle activity	pCi/L	50		(0)	4	<0.75	0.00	<2.20	0	0	0
Trichloroethylene	ppb	5		0.8	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Table 3B.9-2
Raw and Treated Water Quality Data for the Bryte Bend Water Treatment Plant

Parameter	Units	Municipal Drinking Water Standards				Treated Sacramento River Water			Raw Sacramento River Water		
		MCL	SMCL	PHG (MCLG)	DLR	Min	Max	Avg	Min	Max	Avg
Total coliform bacteria	% positive samples	5% per mo.		(0)			0				
Trihalomethanes (total)	ppb	80		NA	0.5						
– Bromodichloromethane	ppb				0.5	4.2	5.5	4.9	<0.5	<0.5	NA
– Bromoform	ppb				0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
– Chloroform	ppb				0.5	20	20	20	<0.5	<0.5	NA
– Dibromochloromethane	ppb				0.5	0.8	0.8	0.8	<0.5	<0.5	NA
Secondary Drinking Water Standard											
Chloride	ppm		500	NS		4	9	6	3	7	5
Copper	ppm		1	NS	0.05	<0.1	<0.1	<0.1	2.8	6.4	4.6
Iron	ppb		300	NS	100	<20	<20	<20	95	680	411
Manganese	ppb		50	NS	20	<2	<2	<2	30	30	30
pH	units		6.5–8.5	NS		7.6	8.4	8.0	7.8	7.9	7.8
Specific Conductance	µmhos/ cm		1,600	NS		149	226	179	138	195	166
Sulfate	ppm		500	NS	0.5	14	16	15	5	10	7
Total dissolved solids	ppm		1,000	NS		100	154	120	76	126	104
Turbidity	NTU		5	NS	0.1	*	0.05	*	*	*	*
Zinc	ppm		5.0	NS	0.05	0.02	0.1	0.04	*	*	*
Other Inorganic Constituents											
Alkalinity (total)	ppm			2		47	80	68	56	75	69
Bicarbonate alkalinity	ppm			2		57	97	81	68	91	82
Boron	ppb				100	*	*	*	69	70	69.5
Calcium	ppm			1		12	16	13	12	59	27
Hardness as CaCO3	ppm			3		55	78	64	55	75	62
Magnesium	ppm			0.1		6	9	7	6	8.5	7.2
Potassium	ppm			1		1.0	1.3	1.1	<1	1.3	NA
Sodium	ppm			1		8	15	13	7.8	10	8.7

Notes:
DLR – Detection Limit for purposes of reporting
MCL – Maximum Contaminant Level
MCLG – Maximum Contaminant Level Goal
Umhos/cm – micromhos per centimeter
NA – Not Applicable
ND – Not Detected
NS – No Standard
NTU – Nephhelometric turbidity unit
pCi/L – picocuries per liter
PHG – Public Health Goal
ppb – parts per billion
ppm – parts per million
SMCL – Secondary Maximum Contaminant Level
* - note sampled or not reported

Source: City of West Sacramento 2007 and 2008

Total Maximum Daily Loads

A total maximum daily load (TMDL) refers to the amount of a specific pollutant a river, stream or lake can assimilate and still meet federal water quality standards as provided in the Clean Water Act. A TMDL accounts for all sources of pollution, including point sources, non-point sources, and natural background sources. Section 303(d) of the Clean Water Act requires that regulatory agencies determine TMDLs for all water bodies that do not meet water quality standards, and the Section 303(d) list of impaired waterbodies provides a prioritization and schedule for development of TMDLs for the State.

Generally, the government agency that has permitting authority develops and implements the TMDLs. This written document includes the sources of the pollutant (both point and nonpoint sources) and designates a specific amount of the impairing pollutant that each source can contribute. To implement the TMDL, the agency works with local governments and the public to determine how to reduce pollutant loads to bring the impaired water into compliance. Implementation often involves BMPs or additional regulation of point-source discharges.

The SWRCB, in compliance with Section 303(d) of the Clean Water Act (33 USC Section 1313[d]) prepared, and EPA-approved, a 2006 list of "impaired" water bodies in the State of California. The list includes a priority schedule for the development of TMDLs for each contaminant or "stressor" impacting the water body. The Sacramento River (from Knights Landing to the Delta) is identified in the 2006 California Section 303(d) List and TMDL Priority Schedule as an impaired water body for the following contaminants: mercury, and unknown toxicity (SWRCB 2007). The Delta (eastern portion), downstream of Zone 2 of the "Water" Study Area, has been designated as impaired for a variety of contaminants, including pesticides (chlorpyrifos, DDT, diazinon, and Group A pesticides) resulting from agricultural and urban runoff/storm sewers, mercury (from abandoned mine drainage), exotic species, and unknown toxicity (unknown cause).

Sacramento County Coordinated Monitoring Program

Water quality conditions within Morrison Creek were characterized in a recent sampling program conducted in conjunction with Sacramento County's Coordinated Monitoring Program (Camp Dresser & McKee and Laboratory Data Consultants 2004). This sampling effort provides the most recent water quality data available for Morrison Creek and the first monitoring data for Morrison Creek to be included in the County's coordinated monitoring program. The data set represents a limited set of conditions in the watershed; however, provides a general assessment of water quality conditions and reflect several distinct seasonal differences typical of urbanized area streams.

The wet-weather (winter storm) event samples recorded low levels of conventional inorganic minerals. The wet-weather samples consistently demonstrated elevated counts of coliform bacteria and total suspended solid (TSS) levels that are indicative of fecal contaminant sources, likely from livestock and other animal sources and sediment transport in the watershed, respectively. The single wet-weather sample analyses also detected elevated values for several polycyclic aromatic hydrocarbons (PAHs) and the organophosphate pesticide diazinon. PAHs, which are byproducts of combustion (primarily gasoline, wood, oil, and coal) and are contained in some asphalt sealants, can enter streams via atmospheric deposition and urban stormwater runoff. (Camp Dresser & McKee and Laboratory Data Consultants 2004).

Dry-weather samples from Morrison Creek were evaluated for only a selected set of parameters; however, it is apparent that concentrations for TSS, coliform bacteria, and diazinon were lower than the winter-storm-event samples. Specific conductance and the organophosphate pesticide chlorpyrifos, another highly mobile pesticide of concern, were slightly elevated relative to wet-weather event samples. (Camp Dresser & McKee and Laboratory Data Consultants 2004).

Sacramento-San Joaquin Delta

Water quality in the Delta changes in response to freshwater inflow, tidal action, releases from upstream reservoirs, agricultural and water supply diversions, and discharges into the Delta system. Seasonal trends reflect the effects of higher spring/summer runoff and fall/winter low-flow periods.

Trends in water quality in the Delta reflect the effects of inflows, tidal exchanges with the San Francisco Bay, diversions, and pollutant releases in the Delta. The north Delta tends to have better water quality in large part because of the inflow from the Sacramento River. The quality of water in the west Delta is strongly influenced by tidal exchange with the San Francisco Bay. During low-flow periods, seawater intrusion results in increased salinity. In the south Delta, water quality tends to be poorer because of the combination of inflows of poorer water quality from the San Joaquin River, agricultural return flows from Delta islands, and effects of CVP and SWP pumping that can sometimes increase seawater intrusion from the Bay. Delta water quality is influenced by the following:

- Discharges from Delta islands that have elevated concentrations of total organic carbon and salts.
- High-salinity water from Suisun and San Francisco Bays that intrudes into the Delta during periods of lower Delta outflow.
- Bromides associated with seawater that lead to the formation of brominated compounds in treated water supplies.
- Agricultural drainage into the Delta that can contain elevated levels of nutrients, suspended solids, organic carbon, salinity, selenium, and boron in addition to pesticides.
- Heavy metals, including cadmium, copper, mercury, and zinc, continue to enter the Delta. Sources of these metals include runoff from abandoned mine sites, tailings deposits, downstream sediments where metals have been deposited over the past 150 years, urban runoff, and industrial and municipal wastewater.

Concentrations of total dissolved solids (TDS) in the western Delta result primarily from the intrusion of saline water from the San Francisco Bay system. The extent of seawater intrusion into the Delta is a function of daily tidal fluctuations, freshwater inflow from the Sacramento and San Joaquin Rivers, the rate of exports at the SWP/CVP intake pumps, and the operation of various control structures (e.g., Delta Cross-Channel Gates and Suisun Marsh Salinity Control System) (DWR 2001).

Water Rights Decision D-1641 (X-2)

Water Rights Decision D-1641 establishes requirements for Delta outflow, known as "X-2" requirements. The term X-2 specifically refers to the location of 2 parts per thousand (ppt) salinity within the Delta. Its position varies and is measured in kilometers upstream of the Golden Gate Bridge. The length of time that X-2 must be positioned at set locations in the Delta each month is determined by a formula that considers the previous month's inflow to the Delta from the Sacramento and San Joaquin Rivers. February through June are the months regulated by this X-2 standard.

X-2 is currently used as the primary indicator in managing Delta outflows. It also reflects a variety of biological consequences related to the magnitude of: (1) fresh water flowing downstream through the Delta, and (2) saltwater moving upstream within the lower portion of the Delta. The outflow that determines the location of X-2 also affects the upstream and downstream movements of various aquatic organisms, as well as overall water operations of the CVP and SWP. The Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta defines requirements for maintaining X-2 at Port Chicago and Chipps Island (RWQCB, Region 2 2007).

3B.9.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

The following Federal plans, policies, regulations, and laws related to water quality and flooding are relevant to the Off-site Water Facilities alternatives, and are described in detail in Section 3A.9, "Hydrology and Water Quality – Land:"

- Federal Clean Water Act (CWA)
- Water Quality Criteria and Standards, Section 303 and 303(d) of the CWA
- National Pollutant Discharge Elimination System Permit Program
- Section 401 CWA Water Quality Certification or Waiver
- Antidegradation Policy
- Safe Drinking Water Act
- Federal Emergency Management Agency (FEMA)
- U.S. Army Corps of Engineers Sacramento and San Joaquin River Basins Comprehensive Study

Central Valley Project Improvement Act

On October 30, 1992, Congress enacted the Central Valley Project Improvement Act (CVPIA) under Public Law 102-575. The CVPIA modified the priorities of the CVP and established aggressive goals for the restoration of the fish and wildlife in California's Central Valley. The CVPIA provided the Secretary of the Interior with a number of authorities as tools to accomplish those goals. At the same time, the CVPIA recognized that additional management and measurement tools were needed and would be developed over time. In order to assist urban areas, agricultural water users, and others in meeting their future water needs, the CVPIA authorized all individuals or districts who receive CVP water under water service or repayment contracts, water rights settlement contracts (e.g., NCMWC) or exchange contracts to transfer, subject to certain terms and conditions, all or a portion of the water subject to such contract to any other California water users or water agency, State or Federal agency, Indian Tribe, or private non-profit organization (e.g., Applicants) for project purposes or any purpose recognized as beneficial under applicable State law.

One of the purposes of the CVPIA is to improve the operational flexibility of the CVP and to increase water-related benefits provided by the CVP to the State of California through expanded use of voluntary water transfers and improved water conservation. In addition, the CVPIA included ten major areas of change: (1) 800,000 acre-feet of water dedicated to fish and wildlife annually; (2) tiered water pricing applicable to new and renewed contracts; (3) water transfers provision, including sale of water to users outside the CVP service area; (4) special efforts to restore anadromous fish population by 2002; (5) restoration fund financed by water and power users for habitat restoration and enhancement and water and land acquisitions; (6) no new water contracts until fish and wildlife goals achieve; (7) no contract renewals until completion of a Programmatic Environmental Impact Statement; (8) terms of contracts reduced from 40 to 25 years with renewal at the discretion of the Secretary of the Interior; (9) installation of the temperature control device at Shasta Dam, fish passage measures at Red Bluff Diversion Dam; and (10) firm water supplies for Central Valley wildlife refuges along with development of a plan to increase CVP yield. Those CVP changes that facilitate the Off-site Water Facility Alternatives include the water transfers provision, which dictates the sale of water to users outside the CVP service area.

Operations Criteria and Plan for Long-Term Operation of the Central Valley Project/State Water Project

Reclamation prepared its Operations Criteria and Plan (OCAP) for the Long-term Operation of the CVP/SWP in 2008 in response to a biological opinion (BO) from USFWS in 2004 (Reclamation 2008). The 2008 OCAP covers the continued operation of the CVP and SWP and includes the operation of the temporary barriers project in the south Delta and the 500 cfs increase in SWP Delta export limit July through September. In addition to current day

operations, the OCAP outlines operation relationships to the following related actions: (1) an intertie between the California Aqueduct (CA) and the Delta-Mendota Canal (DMC), (2) Freeport Project, (3) the operation of permanent gates, which will replace the temporary barriers in the South Delta, (4) changes in the operation of the Red Bluff Diversion Dam (RBDD), and (5) Alternative Intake Project for the Contra Costa Water District (CCWD). A detailed summary of all operational components and associated modeling assumptions are included in the 2008 OCAP, which is available for reviewing at: http://www.usbr.gov/mp/cvo/ocap_page.html.

NCMWC takes its water deliveries from the CVP's Shasta Division, which includes facilities that provide the following benefits: (1) flood control, (2) navigation maintenance, (3) agricultural water supplies, (4) M&I water supplies (5) hydroelectric power generation, (6) conservation of fish in the Sacramento River, and (7) protection of the Sacramento-San Joaquin Delta from intrusion of saline ocean water. The Shasta Division includes Shasta Dam, Lake, and Powerplant; Keswick Dam, Reservoir, and Powerplant, and the Shasta Temperature Control Device.

The Sacramento River Division of the CVP was authorized after completion of the Shasta Division. Total authorized diversions for the Sacramento River Division are approximately 2.8 million AFY. Historically the total diversion has varied from 1.8 million AFY in a critically dry year to the full 2.8 million AFY in wet years. It includes facilities for the diversion and conveyance of water to CVP contractors on the west side of the Sacramento River. The division includes the Sacramento Canals Unit, which was authorized in 1950 and consists of the RBDD, the Corning Pumping Plant, and the Corning and Tehama-Colusa Canals.

Reclamation operates the Shasta, Sacramento River, and Trinity River divisions of the CVP to meet (to the extent possible) the provisions of SWRCB Order 90-05. If Reclamation cannot meet the SWRCB order an exception will be requested. An April 5, 1960, Memorandum of Agreement (MOA) between USBR and the DFG originally established flow objectives in the Sacramento River for the protection and preservation of fish and wildlife resources. The MOA provided for minimum releases into the natural channel of the Sacramento River at Keswick Dam for normal and critically dry years. Since October 1981, Keswick Dam has operated based on a minimum release of 3,250 cfs for normal years from September 1 through the end of February, in accordance with an agreement between Reclamation and DFG. This release schedule was included in SWRCB Order 90-05, which maintains a minimum release of 3,250 cfs at Keswick Dam and RBDD from September through the end of February in all water years, except critically dry years.

Flood Control

Under Executive Order 11988 FEMA is responsible for management of floodplain areas defined as the lowland and relatively flat areas adjoining inland and coastal waters subject to a one percent or greater chance of flooding in any given year (the 100-year floodplain). FEMA requires that local governments covered by Federal flood insurance pass and enforce a floodplain management ordinance that specifies minimum requirements for any construction within the 100-year floodplain.

FEMA is currently sponsoring a national FIRM map revision program, which consists of converting their existing floodplain delineation map to digital maps that are GIS compatible. DWR is assisting FEMA with this conversion. According to DWR, FEMA considers this digital conversion to be a "new study" and, therefore, all requirements of Chapter 10 of 44 CFR are considered applicable to the floodplain. Where insufficient geotechnical information is available to evaluate the integrity of the levee, the levee will be considered uncertified and not able to provide protection for the base flood (one percent annual chance flood). This map revision process is not expected to change the current flood designations for areas crossed as part of the Off-site Water Facility Alternatives.

Safe Drinking Water Act

Under the Safe Drinking Water Act (Public Law 93-523), passed in 1974, EPA regulates contaminants of concern to domestic water supply. Contaminants of concern relevant to domestic water supply are defined as those that

pose a public health threat or that alter the aesthetic acceptability of the water. These types of contaminants are regulated by EPA primary and secondary Maximum Contaminant Levels (MCLs) that are applicable to treated water supplies delivered to the distribution system. MCLs and the process for setting these standards are reviewed triennially. Amendments to the Act enacted in 1986 established an accelerated schedule for setting MCLs for drinking water.

EPA has delegated to the California Department of Public Health (CDPH) the responsibility for administering California's drinking-water program. CDPH is accountable to EPA for program implementation and for adopting standards and regulations that are at least as stringent as those developed by EPA. The applicable state primary and secondary MCLs are set forth in Title 22, Division 4, Chapter 15, Article 4 of the California Code of Regulations and shown for certain constituents in Table 3B.9-2.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

The following state plans, policies, regulations, and laws related to water quality and flooding are relevant to the Off-site Water Facilities alternatives, and are described in detail in Section 3A.9, "Hydrology and Water Quality – Land:"

- Title 22 Standards
- Porter-Cologne Water Quality Control Act
- California State Nondegradation Policy
- California Toxics Rule and State Implementation Plan
- National Pollutant Discharge Elimination System (NPDES) Permit System and Waste Discharge Requirements for Construction
- NPDES Municipal Stormwater Permit Program, Sacramento County and the City of Folsom are co-permittees for a regional NPDES MS4 permit through the Central Valley RWQCB. First issued in 1990, the latest permit was adopted on 11 September, 2008 (NPDES Permit No. CAS082597, WDR Order No. R5-2008-0142
- Senate Bill (SB) 5, the Central Valley Flood Protection Act of 2008
- Central Valley Flood Protection Plan

State Water Resources and Regional Water Quality Control Boards

The SWRCB carries out its water quality protection authority through the adoption of specific Water Quality Control Plans (Basin Plans). These plans establish water quality standards for particular bodies of water. California water quality standards are composed of three parts: the designation of beneficial uses of water, water quality objectives to protect those uses, and implementation programs designed to achieve and maintain compliance with the water quality objectives.

The Central Valley RWQCB is responsible for the Water Quality Control Plan, Central Valley Basin (RWQCB 2004). The RWQCB implements management plans to modify and adopt standards under provisions set forth in Section 303(c) of the Federal CWA and California Water Code (Division 7, Section 13240). Under Section 303(d) of the 1972 CWA, the State is required to develop a list of waters with segments that do not meet water quality standards. The law requires RWQCB to establish priority rankings for waters on the lists and develop action plans, referred to as TMDL, to improve water quality.

The SWRCB adopted the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Board 2000). This policy provides implementation measures for numerical criteria contained in the California Toxics Rule, promulgated in May 2000 by the U.S. EPA. When combined with the beneficial use designations in the Basin Plan, these documents establish statewide water quality standards for toxic constituents in surface waters.

Basin Plans and Water Quality Objectives

Basin Plans designate beneficial uses for California's major rivers and groundwater basins and establish narrative and numerical water quality objectives for those waters. Beneficial uses represent the services and qualities of a water body (i.e., the reasons why the water body is considered valuable), while water quality objectives represent the standards necessary to protect and support those beneficial uses. Basin plans are primarily implemented by using the NPDES permitting system and the issuance of waste discharge requirements (WDRs) to regulate waste discharges so that water quality objectives are met. Basin plans provide the technical basis for determining waste discharge requirements and taking regulatory enforcement actions if deemed necessary.

Basin plans have been adopted for the Sacramento and San Joaquin River Basin (Central Valley RWQCB 2004) and for the San Francisco Bay Region (San Francisco Bay RWQCB 2007). Both the Central Valley and San Francisco Bay RWQCBs (Regions 5 and 2, respectively) have set water quality objectives for all surface waters in their respective regions for the following substances and parameters: ammonia, bacteria, biostimulatory substances, chemical constituents, color, dissolved oxygen, floating material, oil and grease, pH, radioactivity, salinity, sediment, settleable material, suspended material, tastes and odors, temperature, toxicity, and turbidity. In addition, Region 2 has adopted standards for bioaccumulation, population and community ecology, sulfides, and constituents of concern for municipal and agricultural water supplies, while the Central Valley RWQCB has adopted standards for pesticides.

Specific objectives for concentrations of chemical constituents are also applied to bodies of water based on their designated beneficial uses (Central Valley RWQCB 2004; San Francisco Bay RWQCB 2007). Beneficial uses applied to the Sacramento River include municipal supply, irrigation, stock watering, industrial, power, warm and cold freshwater habitat, navigation, spawning, migration, and contact and non-contact recreation. Water quality objectives applicable to all groundwaters have been set for bacteria, chemical constituents, radioactivity, tastes and odors, and in Central Valley Region 5, for toxicity (Central Valley RWQCB 2004; RWQCB, San Francisco Bay 2007).

NPDES Program – Industrial Activities

Operation of the Off-site Water Facility Alternatives would require compliance with the requirements of the NPDES permit for Discharges of Stormwater Associated with Industrial Activities. This general NPDES permit covers all stormwater and some non-stormwater discharges associated with certain industrial activities. The Off-site Water Facilities would be covered according to its North American Industry Classification System (NAICS), No 22131. Additional activities associated with the site, such as vehicle maintenance would also trigger coverage.

The City is required to submit a Notice of Intent to the Central Valley RWQCB to file for a NPDES General Industrial Permit for Stormwater Discharges. The General Industrial Permit requires control of pollutant discharges using best available technology economically achievable (BAT) and best conventional pollutant technology (BCT) to prevent pollutants as necessary to meet water quality standards. Also, all facility operators must prepare, retain on site, and implement a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP has two objectives: 1) to help identify the sources of pollution that affect the quality of industrial stormwater and non storm discharges; and 2) to describe and ensure the implementation of BMPs to reduce or prevent pollutants in the discharges. Development and implementation of BMPs constitutes compliance with BAT and BCT and, in most cases, compliance with water quality standards.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

The following regional and local plans, policies, regulations, and laws related to water quality and flooding are relevant to the Off-site Water Facilities alternatives, and are described in detail in Section 3A.9, "Hydrology and Water Quality – Land:"

- Sacramento Stormwater Quality Partnership
- Sacramento County General Plan, Agricultural, Conservation, and Safety Elements

Sacramento County General Plan

The following additional Sacramento County General Plan goals and policies as contained in the Conservation Element are relevant to the Off-site Water Facilities:

GOAL: Surface water quality which promotes a healthy aquatic environment, and is safe for public use and enjoyment.

GOAL: Adequate long-term quantity and high quality of ground water resources for both human and natural systems.

- **Policy CO-11:** Hazardous materials shall not be stored in the 100 year floodplain in such a manner as to pose a significant potential for surface water contamination.

Sacramento Water Forum

The Sacramento Water Forum process brought together a diverse group of stakeholders that included water managers, business and agricultural leaders, environmentalists, citizen groups, and representatives of local governments to evaluate available water resources and the future water needs of the Sacramento Metropolitan Area. The coequal objectives of the Water Forum Agreement (WFA) are (1) to provide a reliable and safe water supply for the region's economic health and planned development through the year 2030; and (2) to preserve the fishery, wildlife, recreational, and aesthetic values of the lower American River. The first objective will be met by additional diversions of surface water for the conjunctive use of surface water and groundwater, expanded water demand management programs, and use of recycled water. The second objective will be met by regulating American River flow patterns (or "modifying" American River flow) to improve in-stream fish habitat (spawning/hatching/rearing), as well as implementation of the Habitat Management Element of the WFA.

Demand management/water conservation is essential to meeting the coequal objectives of the WFA. As a signatory to the WFA and as a water contractor under Reclamation's CVP, the City is committed to implementing the water conservation best management practices (BMPs) defined in the Water Conservation Element of the WFA. Technical studies prepared in support of the WFA indicate that implementation of the BMPs (most notably the provision for water meter retrofits and demand pricing) will result in a demand factor reduction of 25.6% relative to the 1990 baseline by the year 2030.

The Water Forum EIR (State Clearinghouse No. 1995082041), certified in 1999, evaluated the City's water supply needs in combination with other water supply needs in the region, including SCWA. The City and SCWA agreed to a series of actions and commitments related to diversions of surface water, dry-year supplies, fishery flows, habitat management, water conservation, and groundwater management. The Water Forum EIR evaluated the provision of water for a 30-year planning period based on land use projections. The 2005 Zone 40 Water Supply Master Plan (WSMP) prepared by SCWA relied on the County of Sacramento General Plan to identify where urban development would occur within the county, consistent with WFA purveyor-specific agreements for water service to those areas.

Under the WFA, the City plans to increase its average and wet year American River diversions from an agreed upon baseline amount of 20,000 AF to a year 2030 level of 34,000 AF. Under the WFA, in drier years, the City would divert and use a decreasing amount of surface water from 34,000 AF to 22,000 AF or the equivalent, in a three stage stepped and ramped reduction in proportion to the decrease in the March through November unimpaired inflow to Folsom Reservoir, from 950,000 to 400,000 AF. Under stage 1, the City would divert a decreasing amount from 34,000 AF to 30,000 AF in proportion to the decrease in unimpaired inflow to Folsom Reservoir from March through November when the at times when inflow is greater than 870,000 AF, but less than 950,000 AF. Under stage 2, the City diverts 27,000 AF when the March through November unimpaired inflow to Folsom Reservoir is greater than 650,000 AF but less than or equal to 870,000. Under stage 3, the City would divert 22,000 AF when the March through November unimpaired inflow to Folsom Reservoir is greater than 400,000 AF but less than or equal to 650,000 AF.

In the driest years, when the March through November unimpaired inflow to Folsom Reservoir is less than or equal to 400,000 AF, the City would reduce its diversions to 20,000 AF or the equivalency based on actual flows. In addition, the City would reduce diversions in the driest years by encouraging additional, extra-ordinary conservation to effectively achieve a reduction to 18,000 AF. The WFA encouraged the City to enter into agreements with other suppliers that have access to both surface water and groundwater for an equivalent exchange of the amount of reduction needed by the City as outlined above in the three stages of reduction. Under these arrangements, those other suppliers would use groundwater in lieu of surface water equivalent to the amount that they would continue to divert.

City of Rancho Cordova

Applicable policies of the City of Rancho Cordova's General Plan relating to water quality and hydrology are provided below.

- **Policy S.2.1:** Support and encourage efforts to limit and reduce the potential for community flooding from the Cosumnes or American Rivers.
- **Policy S.2.2:** Manage the risk of flooding by discouraging new development located in an area that is likely to flood.
- **Policy S.2.3:** Discourage the creation of new parcels when the presence of easements, floodplain, marsh, or riparian habitat, and/or other features would leave insufficient land to build and operate structures. This policy shall not apply to open space lots specifically created for dedication to the City or another appropriate party for habitat protection, flood control, drainage, or wetland maintenance.
- **Policy S.2.4:** Ensure that adequate drainage exists for both existing and new development.

3B.9.3 Environmental Consequences and Mitigation Measures

Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. These thresholds also encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. For the purposes of this analysis, an impact to surface water quality and/or hydrology would be significant if the Off-site Water Facility Alternatives would:

- violate any water quality standards, waste discharge requirements, or otherwise degrade water quality, including changes to the position of X-2;

- substantially alter the existing drainage pattern of the area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site;

- substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site;

- substantially increase, reduce, or otherwise modify flow within affected waterways;

- create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;

- place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;

- place within a 100-year flood hazard area structures which would impede or redirect flood flows;

- expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or

- result in inundation by seiche, tsunami, or mudflow.

ANALYSIS METHODOLOGY

This analysis considers the potential for the Off-site Water Facility Alternatives to impact local and regional surface hydrology and water quality based on the components described in Chapter 2, "Alternatives." The impact analysis focuses on foreseeable changes to existing hydrologic and water quality conditions in the context of the below-mentioned significance criteria. The impact analysis provides a discussion for each of the major Off-site Water Facility components in the context of the construction, off-site staging areas, and post-construction operation. Potential hydromodification impacts resulting from new impervious surfaces at the WTP (on- or off-site) were assessed by using the Sacramento Method to calculate pre- and post-construction runoff. Mitigation measures are identified where appropriate.

For the purposes of surface water modeling and assessing changes to the Sacramento River, the conditions for the operations of the Off-site Water Facilities were analyzed by post-processing results from recent runs from the California Simulation Model II (CALSIM II) which is a statewide water supply water supply systems operations model developed by DWR and USBR. The primary purpose of CALSIM II is to evaluate the water supply reliability of the CVP and SWP with and without various assumed future facilities, and with different modes of facility operations.

CALSIM II is the best available tool for modeling operations of the CVP and SWP hydrology and is the only systemwide hydrologic model being used by Reclamation and DWR to conduct planning and impact analyses of the Sacramento River and Delta. The CALSIM II model is recognized as a valuable tool for conducting comparative analysis for new facilities or changes in operations. In comparative applications, such as for this EIR/EIS, the model is run twice; once to represent a base condition (No Project Alternative) and a second time with a specific change (with Off-site Water Facilities) to assess the change that would result from the Off-site Water Facility Alternatives. Potential errors or uncertainties that exist in the "No Project Alternative" simulation are also present in the "Off-site Water Facility Alternatives" simulation. Thus, the effects from potential errors or uncertainties are, to some extent, reduced or accounted for when assessing the effects of the Off-site Water Facility Alternatives based on hydrologic changes between alternatives. Appendix M-IX provides additional detail regarding the methodology used for the for the CALSIM II modeling.

For the purposes of this analysis, the following assumptions were made in applying CALSIM II to the Off-site Water Facility Alternatives:

- Reclamation would approve the Freeport as an additional point of delivery for NCMWC's CVP Contract;
- The analysis depicts a "worst-case" for NCMWC whereby it analyzes project water (not base supply) being re-allocated into an urban demand pattern for the assignment;
- The analysis assumes an "efficiency" of 80% in the use of water conveyed through the Off-site Water Facilities, which means that only 20 percent of the water diverted makes it back to the Sacramento River via the regional wastewater treatment plant operated by the SCRSD. This estimate is considered conservative, but was deemed appropriate given plans for regional water recycling;
- The diversion of surface water as part of the Off-site Water Facilities would occur at the existing Freeport Project diversion and intake facility; and
- For the purposes of this EIR/EIS analysis, the efficiency of irrigation return flow to the Sacramento River is assumed to be 35% – or an efficiency rate of 75%.

The information contained in this section is also used in the analysis of secondary environmental effects associated with changes in groundwater levels (Section 3B.7, "Groundwater Resources – Water"), water supply conditions (Section 3B.16, "Utilities and Service Systems – Water"), and drinking water quality (Section 3B.8, "Hazards and Hazardous Materials – Water").

ISSUES NOT DISCUSSED FURTHER IN THIS EIR/EIS

Placement of Housing within a 100-Year Floodplain—The Off-site Water Facilities would not involve the construction of residential housing and, therefore, would not place housing within a 100-year flood hazard area as mapped on the most recent Federal Flood Insurance Rate Map. For this reason, this issue is irrelevant for the Off-site Water Facility Alternatives and not addressed further in this EIR/EIS.

IMPACT ANALYSIS

Impacts that would occur under each of the Off-site Water Facility Alternatives are identified as follows:

NCP (No USACE Permit Alternative)

PA (Proposed Off-site Water Facility Alternative)

1 (Off-site Water Facility Alternative 1 – Raw Water Conveyance – Gerber/Grant Line Road Alignment and White Rock WTP)

1A (Off-site Water Facility Alternative 1A Raw Water Conveyance – Gerber/Grant Line Road Alignment Variation and White Rock WTP)

2 (Off-site Water Facility Alternative 2 Treated Water Conveyance – Douglas Road Alignment and Vineyard SWTP)

2A (Off-site Water Facility Alternative 2A Treated Water Conveyance – Excelsior Road Alignment Variation and Vineyard SWTP)

2B (Off-site Water Facility Alternative 2B Treated Water Conveyance – North Douglas Tanks Variation and Vineyard SWTP)

3 (Off-site Water Facility Alternative 3 Raw Water Conveyance – Excelsior Road Alignment and White Rock WTP)

3A (Off-site Water Facility Alternative 3A Raw Water Conveyance – Excelsior Road Alignment Variation and White Rock WTP)

4 (Off-site Water Facility Alternative 4 Raw Water Conveyance – Easton Valley Parkway Alignment and Folsom Boulevard WTP)

4A (Off-site Water Facility Alternative 4A Raw Water Conveyance – Easton Valley Parkway Alignment Variation and Folsom Boulevard WTP).

The impacts for each alternative are compared relative to the PA at the end of each impact conclusion (i.e., similar, greater, lesser).

IMPACT 3B.9-1 Potential Temporary, Short-Term Construction-Related Drainage and Water Quality Effects. *Construction of the Off-site Water Facilities could generate discharges to surface water resources that could potentially violate water quality standards or waste discharge requirements.*

NCP, PA, 1, 1A, 3, 3A, 4, and 4A

Construction of the Off-site Water Facilities would involve excavation, soil stockpiling, grading, and the installation of support buildings, storage tanks, pumping facilities, and pipelines. During site grading, trenching, and construction activities, large areas of bare soil would be exposed to erosive forces for long periods of time. Bare soils are much more likely to erode than vegetated areas due to the lack of dispersion, infiltration, and retention created by covering vegetation. Construction activities involving soil disturbance, excavation, cutting/filling, stockpiling, dewatering and grading activities could result in increased erosion and sedimentation to surface waters. At locations where the crossing of a water feature (e.g. Morrison Creek), the removal of riparian vegetation and disturbance of the creek bed or bank could also result in the weakening the bank's structure and increase its susceptibility to erosion. Disturbing the geomorphic characteristics and stability of the channel bed and banks may initiate chronic erosion in natural channels. Such impacts could be exacerbated if the riparian vegetation is not reestablished and stabilized prior to the next high-flow or precipitation event and could result in **potentially significant direct** impacts within the immediate vicinity of construction and **indirect** impacts to water quality further downstream. ***[Similar]***

Hazardous materials associated with construction would be limited to substances associated with mechanized equipment, such as gasoline and diesel fuels, engine oil, and hydraulic fluids. If precautions are not taken to contain contaminants, accidental spills of these substances during construction could produce contaminated stormwater runoff (nonpoint source pollution), a major contributor to the degradation of water quality in surface waters. Without proper containment and incident response measures in place, the operation of construction equipment could result in **potentially significant direct** and **indirect** impacts to water quality. ***[Similar]***Prior to construction grading, the City must file an NOI with the Central Valley RWQCB to comply with the General NPDES Construction Permit and prepare the SWPPP, which addresses the measures that would be included in the project to minimize and control construction and post-construction runoff to the "maximum extent practicable." However, without these documents available for review as part of this EIR/EIS, the City is unable to determine their adequacy in achieving applicable water quality standards. In addition, NPDES permits require the implementation of BMP's that achieve a level of pollution control to the maximum extent practical, which may not necessarily be completely protective of aquatic life. This represents a **potentially significant**, **direct impact**. For these reasons, the implementation of the prescribed mitigation would be required to ensure that the Off-site Water Facilities SWPPP and Grading Plan(s) include measures necessary to minimize water quality impacts as a result of project construction and post-construction runoff. ***[Similar]***

Mitigation Measure 3B.9-1a: Acquire Appropriate Regulatory Permits and Prepare and Implement SWPPP and BMPs.

The City shall prepare a SWPPP specific to the selected Off-site Water Facility Alternative and secure coverage under SWRCB's NPDES stormwater permit for general construction activity (Order 2009-0009-DWQ). The SWPPP shall identify specific actions and BMPs relating to the prevention of stormwater pollution from project-related construction sources by identifying a practical sequence for site restoration, BMP implementation, contingency measures, responsible parties, and agency contacts. The SWPPP shall reflect localized surface hydrological conditions and shall be reviewed and approved by the City prior to commencement of work and shall be made conditions of the contract with the contractor selected to build the Off-site Water Facilities. The SWPPP shall incorporate control measures in the following categories:

- soil stabilization and erosion control practices (e.g., hydroseeding, erosion control blankets, mulching, etc.;
- dewatering and/or flow diversion practices, if required (see Mitigation Measure 3B.9-1b);
- sediment control practices (temporary sediment basins, fiber rolls, etc.);
- temporary and post-construction on- and off-site runoff controls;
- special considerations and BMPs for water crossings, wetlands, drainages, and vernal pools;
- monitoring protocols for discharge(s) and receiving waters, with emphasis placed on the following water quality objectives: dissolved oxygen, floating material, oil and grease, pH, and turbidity;
- waste management, handling, and disposal control practices;
- corrective action and spill contingency measures;
- agency and responsible party contact information, and
- training procedures that shall be used to ensure that workers are aware of permit requirements and proper installation methods for BMPs specified in the SWPPP.

The SWPPP shall be prepared by a qualified SWPPP practitioner with BMPs selected to achieve maximum pollutant removal and represent the best available technology that is economically achievable. Emphasis for BMPs shall be placed on controlling discharges of oxygen-depleting substances, floating material, oil and grease, acidic or caustic substances or compounds, and turbidity. Performance and effectiveness of these BMPs shall be determined either by visual means where applicable (i.e., observation of above-normal sediment release), or by actual water sampling in cases where verification of contaminant reduction or elimination, (inadvertent petroleum release) as required to determine adequacy of the measure.

Implementation: City of Folsom Utilities Department

Timing: Development of the SWPPP prior to construction of all Off-site Water Facilities and implementation throughout construction.

Enforcement:
1. Central Valley Regional Water Quality Control Board.
2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.

3. For improvements within unincorporated Sacramento County or City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.

Mitigation Measure 3B.9-1b: Properly Dispose of Hydrostatic Test Water and Construction Dewatering in Accordance with the Central Valley Regional Water Quality Control Board.

All hydrostatic test water and construction dewatering shall be discharged to an approved land disposal area or drainage facility in accordance with Central Valley RWCQB requirements. The City or its construction contractor shall provide the Central Valley RWQCB with the location, type of discharge, and methods of treatment and monitoring for all hydrostatic test water discharges. Emphasis shall be placed on those discharges that would occur directly to surface water bodies.

Implementation: City of Folsom Utilities Department

Timing: Incorporation measures into SWPPP prior to construction and implementation throughout construction, as appropriate.

Enforcement:

1. Central Valley Regional Water Quality Control Board.
2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
3. For improvements within unincorporated Sacramento County or City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.

Mitigation Measure: Implement Mitigation Measures 3A.3-1a and 3A.3-1b.

Implementation: City of Folsom Utilities Department

Timing: Incorporation of measures into SWPPP prior to construction and implementation throughout construction.

Enforcement:

1. Central Valley Regional Water Quality Control Board.
2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
3. For improvements within unincorporated Sacramento County or City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.

2, 2A, and 2B

Under Off-site Water Facility Alternatives 2, 2A, and 2B, construction of the Off-site Water Facilities would involve similar construction-related impacts during pipeline installation and construction of above -or below-ground structures (e.g., pump stations). However, the construction area and corresponding disturbance area where soils would be exposed to rainfall would be substantially reduced under these alternatives with consolidation of treatment operations at Vineyard SWTP and storage within the SPA. However, the potential for adverse water quality effects to occur during construction would continue to exist. As a result, **direct** and **indirect** construction-related water quality impacts could be **potentially significant**. ***[Lesser]***

Mitigation Measure: Implement Mitigation Measures 3B.9-1a and 3B.9-1b.

With the implementation of the above mitigation measures, impacts to surface water quality for all the Off-site Water Facility Alternatives would be reduced to a **less-than-significant** level through the inclusion of focused BMPs for the protection of surface water resources. Monitoring and contingency response measures would be included to verify compliance with water quality objectives for all surface waters crossed during construction. Particular emphasis would be placed on dissolved oxygen, floating material, oil and grease, pH, and turbidity as these are generally the water quality constituents of most concern during construction-related activities.

IMPACT 3B.9-2 Exceedance of Surface Water Quality Standards during Operation. *The operation of the Off-site Water Facilities could result in changes to the quality of surface water resources that could potentially violate water quality standards or waste discharge requests.*

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A

Operation of the Off-site Water Facilities has the potential to result in minor changes in downstream water quality of the Freeport Project including concentrations of salinity and the potential to alter both upstream and downstream Sacramento River water temperatures by altering in-stream flows through the operation of the Off-site Water Facility Alternatives, a corresponding change in delivery schedule, and change in the location and type discharge following the proposed M&I beneficial use. The following analysis addresses these topics and presents the results of the analysis of related impacts from operations of the Off-site Water Facilities. The operation of the Off-site Water Facility Alternatives would result in NCMWC reducing its current diversion during the irrigation season and the City diverting the purchased contract water at Freeport at an average rate of 10 cfs annually and up to a maximum of 15.5 cfs during the months of July and August. The resulting total diversions from the Sacramento River are roughly equivalent to existing conditions and any changes as a result of the change to an M&I delivery schedule, as described in Impact 3B.9-4, equate to a minor fraction of total Delta outflow. As a result, this change is less than the 1% change in Delta outflow of 11,400 cfs that is required to maintain X-2 at Chipps Island (SWRCB 1999). In this context, potential **direct** and **indirect** impacts are considered **less than significant** and not expected to significantly affect the position of X-2. ***[Similar]***

The addition of a new point of diversion for diversions currently under NCMWC's CVP settlement contract as part of the operation of the Off-site Water Facilities would not be expected to adversely affect reservoir releases or result in other changes in CVP and SWP operations. In this context, the City does not expect the Off-site Water Facility Alternative's operation to result in significant adverse, indirect changes in water temperature within rivers and managed waterways in the Sacramento River basin. Rather, the operation of the Off-site Water Facilities is expected to facilitate two potential, minor benefits in water temperature by (1) adding increased flows to the section of the Sacramento River, upstream of Freeport, and (2) contributing to higher reservoir levels in CVP reservoir facilities during the summer months as a result of the change to an M&I delivery schedule. These **direct** and **indirect** impacts would be **less than significant**. ***[Similar]***

Another potential water quality change associated with the operation of the Off-site Water Facility Alternatives would be associated with the changes in the type of the return flows anticipated between agricultural and M&1 uses. Under existing conditions, water used for agricultural uses within NCMWC's service area that ultimately drains back to the Sacramento River consists of irrigation return flows. Irrigation return flows may contain detectable levels of various water quality pollutants including nitrogen-based fertilizers, pesticides, and sediment. Higher water temperatures have also been documented within agricultural irrigation return flows.

With a corresponding change to M&I use, water used within the SPA that ultimately drains back to the Sacramento River would consist of disinfected, secondary-treated effluent discharged from Sacramento Regional County Sanitation District's (SRCSD) WWTP. The disinfected, secondary-treated effluent discharged from SRCSD WWTP is regulated by the Central Valley RWQCB under NPDES No. CA0077682. For the purposes of

this analysis, changes in water quality within the Sacramento would be a function of the additional discharges of disinfected, secondary-treated wastewater from SRCSD's WWTP and the corresponding reductions in irrigation return flows from NCMWC's service area. These changes in nutrient loadings would be further influenced by the additional flows that would occur within the Sacramento River between NCMWC's service area and Freeport and downstream of Freeport and would be contingent on hydrologic conditions and the corresponding assimilative capacity of the river at any given point in the hydrologic year. Given all the various existing stressors that characterize existing river conditions combined with the fact that the Off-site Water Facility Alternatives would involve only minor hydrologic changes and essentially a trading in the type of inputs to the system, potential indirect impacts to water quality in relation to cumulative sources of existing loadings are considered **less-than significant**.***[Similar]***

The potential impacts of increased wastewater discharges to SRCSD's WWTP and corresponding changes in the quality of effluent discharged from the WWTP are discussed in Impact 3A.15.3 of Section 3A.15 "Utilities – Land." Impact 3A.13.3 specially addresses the potential impacts of the corresponding increases in wastewater discharges to the SRCSD's WWTP and SRCSD's ability to meet its waste discharge requirement, which are partially driven by the applied beneficial use, which includes municipal supply, irrigation, stock watering, industrial, power, warm and cold freshwater habitat, navigation, spawning, migration, and contact and non-contact recreation, and other economic considerations. ***[similar]***As described in Chapter 2, "Alternatives," the assignment of water from NCMWC to the City would not result in increased pumping of groundwater in the NCMWC's service areas to support continued agricultural uses. In recognizing that no increase in groundwater usage would occur as a result of the Off-site Water Facilities, no changes to agricultural return flows or Sacramento River water quality, in terms of higher levels of dissolved solids, are anticipated. As a result, no corresponding adverse changes to the Sacramento River water quality would occur and potential **direct** and **indirect** impacts would be **less than significant**. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

IMPACT 3B.9-3 Alteration of Drainage Patterns Resulting in Off-site Flooding and/or Erosion. *The Off-site Water Facilities could result in the alteration of existing drainage patterns thereby increasing the rate or amount of surface runoff in a manner that could result in substantial flooding and/or erosion or siltation on- or off-site.*

NCP, PA, 1, 1A, 3, and 3A

The construction of a new WTP and storage facility under these alternatives has the potential to alter the surface infiltration characteristics of the WTP/storage site, which could result in increases in both the volume and discharge rate of stormwater runoff thereby potentially contributing to flooding on site or at downstream locations. Pump station and well facilities could also contribute to increased runoff, but at a far lesser magnitude. Following construction, the impervious surfaces created with the storage and treatment facilities and paved areas are expected to result in increases in peak runoff flows. Under these alternatives, the WTP site is located in the headwaters of Buffalo Creek, which flows west and is tributary to the Lower American River (see Exhibit 3B.9-1). All drainage runoff from the WTP would enter Buffalo Creek at two locations and, without mitigation, could contribute to hydro-modification within the drainage catchment and downstream scouring. In addition, development of the WTP site could require a minor alteration of Buffalo Creek, to facilitate development of the site.

Based on direction provided in Section 2 of the County's Drainage Manual, the Sacramento Method charts were used in estimating drainage discharges for a design storm event for an assumed overland flow system. The Sacramento Method uses the urban unit hydrograph as a basis for estimating runoff hydrographs using design charts that have been created to expedite design flow calculations for basins less than 640 acres (260 hectares) (Sacramento City/County Drainage Manual 1996). The Sacramento Method charts are based on discrete recurrence interval where peak flow is given versus drainage area for the 10- and 100-year reoccurrence intervals.

The main variables used in the simplified charts are the percentage of impervious surface area and total drainage area, which for the WTP and storage tank areas equals approximately 10 acres. Based on conditions observed on site, existing site conditions were assumed to have a 20% impervious surface cover. Under the developed Off-site Water Facilities condition, the impervious surface cover was increased to 95% to provide a worst-case estimate of peak runoff.

Using Exhibits 2-16 and 2-22 in the Sacramento City/County Drainage Manual, the results reveal the estimated rate of stormwater runoff (in cfs) produced on site for a 10- and 100-year storm event. Rates of runoff are the absolute maximum that would occur during a 24-hour storm and, therefore, provide a conservative estimate for determining the net change in post-Off-site Water Facilities runoff. Based on the simplified method, the Off-site Water Facilities WTP could produce up to 21.0 cfs during a 10-year storm event; a net increase of 6.0 cfs when compared with existing conditions. Similarly, the net increase in peak runoff during a 100-year storm event is estimated at 31.0 cfs; up 9.0 cfs from the existing condition. Appendix M-VIII provides the unit hydrographs used to derive these values.

The net increase in peak runoff as a result of these Off-site Water Facility Alternatives would likely be partially attenuated by several of the containment areas, landscaped areas, paved walkways, and crushed rock roadways included as part of the WTP design and, therefore, it is reasonable to conclude that the above values likely over-estimate post-Off-site Water Facilities drainage flows. However, given that no formal Drainage Plan has been developed to attenuate post-construction drainage flows, the Sacramento Method provides a basic means for comparison and, based on the results, it is reasonable to conclude that the Off-site Water Facilities would result in a net increase in drainage discharge from the WTP site. This increase in peak flows could contribute to additional downstream flooding and/or bank scour. These **direct** and **indirect** impacts could be **potentially significant**. ***[Similar]***

Mitigation Measure 3B.9-3a: Prepare and Implement Drainage Plan(s) for Structural Facilities.

The City shall prepare a Drainage Plan for the selected Off-site Water Facility WTP and shall incorporate measures to maintain off-site runoff during peak conditions to pre-construction discharge levels. The Drainage Plan shall provide both short- and long-term drainage solutions to ensure the proper sequencing or drainage facilities during and following construction. The City shall evaluate options for on-site detention including, but not limited to, providing temporary storage within a portion or portions of proposed paved areas, linear infiltration facilities along the site perimeter, and/or other on-site opportunities for detention, retention, and/or infiltration facilities. Design specifications for the detention, retention, and/or infiltration facilities shall provide sufficient storage capacity to accommodate the 10-year, 24-hour storm event. In addition, the Drainage Plan shall delineate the overland release path for flows generated by a 100-year frequency storm, so that structural pad elevations for buildings, containment facilities, storage tank, and container storage areas are placed a minimum of one foot above the property's highest frontage curb elevation.

Implementation: City of Folsom Utilities Department

Timing: Development of the Drainage Plan prior to start of construction.

Enforcement:

1. Central Valley Regional Water Quality Control Board.
2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
3. For improvements within unincorporated Sacramento County or City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.

Mitigation Measure 3B.9-3b: Ensure the Provision of Sufficient Outlet Protection and On-site Containment.

Energy dissipaters, vegetated rip-rap, soil protection, and/or other appropriate BMPs shall be included within all storm-drain outlets to slow runoff velocities and prevent erosion at discharge locations for the WTP. A long-term maintenance plan shall be implemented for all drainage discharge control devices. The WTP layout shall also include sufficient on-site containment and pollution-control devises for drainage facilities to avoid the off-site release of water quality pollutants, oil and grease.

Implementation: City of Folsom Utilities Department

Timing: Incorporation of measures into the Drainage Plan prior to start of construction.

Enforcement:

1. Central Valley Regional Water Quality Control Board.
2. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
3. For improvements within unincorporated Sacramento County or City of Rancho Cordova: Sacramento County Planning and Community Development Department or City of Rancho Cordova Planning Department.

2, 2A, and 2B

A WTP would not be constructed under these alternatives and, therefore, these Off-site Water Facility Alternatives would result in only a minor net increase in peak runoff from the new equalization tanks and pumping station. The construction of the equalization tanks would occur within the SPA and would be subject to the requirements of the Folsom South of 50 Specific Plan. Given only a minimal increase in impervious surfaces outside the SPA would be anticipated under these alternatives, these **direct** and **indirect** impacts to localized drainage facilities would be **less than significant**. ***[Lesser]***

Mitigation Measure: No mitigation measures are required.

4 and 4A

Following construction of these Off-site Water Facility Alternatives, the impervious surfaces associated with the WTP, storage facilities and paved areas are expected to result in increases in peak drainage flows that would in turn be discharged to Buffalo Creek, similar to that of Off-site Water Facility Alternative 1, but at a different location. Although all drainage runoff would enter an existing stormwater collection system, there is a potential for this drainage runoff to exceed the capacity of existing off-site drainage infrastructure during peak rainfall conditions thereby potentially contributing to on- and/or off-site flooding. These **direct** and **indirect** impacts could be **potentially significant**. ***[Similar]***

Mitigation Measure: Implement Mitigation Measure 3B.9-3a and 3B.9-3b.

With the implementation of the above mitigation measures, impacts to on- and off-site drainage patterns would be mitigated to a **less-than-significant** level through the preparation of a formal drainage plan to attenuate post-construction runoff thereby minimizing the potential for on and off-site flooding and long-term hydromodification impacts.

IMPACT 3B.9-4 Changes to Flow within the Sacramento River. *The Off-site Water Facilities could result in adverse effects to existing flows within the Sacramento River.*

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A

Operation of the Off-site Water Facility Alternatives could potentially affect flows within the Sacramento River by diverting CVP water through the Freeport Project as opposed to the Riverside Pumping Plant within NCMWC's service area. Table 3B.9-3 shows how flows would change with the Off-site Water Facilities as compared to existing conditions. As indicated in Chapter 2, "Alternatives," the operation of the Off-site Water Facilities would not increase the diversion of CVP water, but would only add a new point of diversion. The new point of diversion would be located approximately 20 miles south of NCMWC's service area and is expected to provide a minor addition to the total volume of flow within portions of the Sacramento River between NCMWC and Freeport; hence Zone 2 of the "Water" Study Area. This additional flow would be highest during the summer months, peaking at 1,087 AF or 18.1 cfs during the months of July and August. This direct impact is considered **less than significant**. ***[Similar]***

The diversion of surface water at the Freeport Project intake was analyzed in an EIR/EIS prepared in 2003 by the FRWA. The City does not propose an increase in the Freeport Project's maximum diversion capacity of 185 mgd. Therefore, the operations of the Off-site Water Facility Alternatives would remain within the confines of the Freeport Project's existing capacity. The potential impacts of operating the Freeport Project diversion were previously addressed in an EIR/EIS prepared by the FRWA. The Freeport Project EIR/EIS is incorporated by reference into this EIR/EIS as described in Chapter 1, "Introduction"). The CALSIM simulation completed for the Freeport Project EIR/EIS concluded that hydrologic responses to the operation of Freeport Project deliveries are distributed throughout the SWP and CVP system and that average annual changes would be slightly greater during dry periods. Very infrequent, larger increases and reductions in storage and flow within the Lower Sacramento River, south of Freeport, were also observed in some individual months even though Freeport Project diversions were small or not occurring. These changes were concluded as not substantial, infrequent, and, therefore, **less than significant**. ***[Similar]***

Based on modeling conducted by SWRI, Inc (2008), using CALSIM II, the principle changes in flow as a result of the operation of the Off-site Water Facilities occur downstream of Freeport and are a consequence of modifying the current agricultural delivery schedule for the 8,000 AFY of CVP water to an M&I delivery schedule. This change in delivery modifies the timing of diversions to smaller, more consistent withdrawals of surface water throughout the year as opposed to large diversions during the summer months when crop water demands are high. This phenomenon is demonstrated in Table 3B.9-3 whereby the Off-site Water Facility Alternatives results in a net decrease in CVP water use during the months of July and August. The data produced by SWRI is provided in its entirety in Appendix M-IX.

The change in the delivery schedule also results in minor corresponding increases in surface water diversions during other months (see Table 3B.9-3) when irrigation demands decrease or are absent. As shown in Table 3B.9-3, the Off-site Water Facility Alternatives would result in an increased diversion of CVP water on the order of 920 AF and 800 AF during the months of June and September, respectively. These increases would be offset by reductions in deliveries during the months of July and August of 3,040 AF. Additionally, as shown in Table 3B.9-3, these Off-site Water Facilities-related changes are estimated at 3 cfs or <0.04% of the total minimum flow at Freeport[2].

[2] Assuming a minimum base flow of 8,000 cfs within the Sacramento River (CSCGMP 2006).

Table 3B.9-3
Effects of Off-site Water Facility Alternatives on Sacramento River Flows

	Units	Total	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb
CVP Supplies (NCMWC CVP Contract Total)	AF	120,200	--	14,000	27,700	23,000	18,700	18,700	16,100	2,000	--	--	--	--
No Action (Existing Conditions)														
NCMWC Demand Pattern	%	100	--	11.6	23.0	19.1	15.6	15.6	13.4	1.7	--	--	--	--
NCMWC Deliveries	AF	120,200	--	14,000	27,700	23,000	18,700	18,700	16,100	2,000	--	--	--	--
NCMWC Deliveries	cfs(2)	--		18.1	465.5	386.6	314.3	314.3	270.6	33.6				
NCMWC Return Water (1)	AF	37,863	--	4,410	8,726	7,245	5,891	5,891	5,072	630	--	--	--	--
Off-site Water Facility Alternative(s) Conditions														
Purchased Contract Demand Pattern(2)	%	100	6.5	7.0	9.5	11.5	12.0	12.0	10.0	8.5	6.5	5.5	5.5	5.5
Purchased Contract Deliveries	AF	8,000	520	560	760	920	960	960	800	680	520	400	400	400
Purchased Contract Deliveries	cfs(5)	10.33	0.67	0.72	0.98	1.19	1.24	1.24	1.03	0.88	0.67	0.52	0.52	10.33
Purchased Contract Return Water	AF	1,800	94	101	137	166	173	173	144	122	94	79	79	79
NCMWC Demand Pattern (Post-Purchased Contract)	%	100	--	12.5	24.7	20.5	13.1	13.1	14.3	1.8	--	--	--	--
NCMWC Deliveries (Post-Purchased Contract)	AF	110,200	--	14,000	27,700	23,000	14,700	14,700	16,100	2,000	--	--	--	--
NCMWC Return Water (Post-Purchased Contract)	AF	34,713	--	4,410	8,726	7,245	4,631	4,631	5,072	630	--	--	--	--
Off-site Water Facility Alternative(s) Effects														
Change in CVP Water Use	AF	0	520	560	760	920	-3,040	-3,040	800	680	520	440	440	440
Change in Lower Sacramento River Flow (2)	AF	-1,080	94	101	137	166	-1,087	-1,087	144	122	94	79	79	79
Change in Lower Sacramento River Flow (3)	cfs	NA	2	2	3	3	-18	-18	2	2	2	1	1	1
Change As a Percent of Minimum Freeport Flow (4)	%	NA	0.02	0.02	0.04	0.03	-0.19	-0.23	0.04	0.03	0.02	0.02	0.02	0.02

Assumptions/Notes: CVP = Central Valley Project; NCMWC = Natomas Central Mutual Water Company; cfs = cubic feet per second; AF = acre feet; NA = not available

(1) Return Flow for the Off-site Water Facility Alternatives is calculated based on a return efficiency of 80% whereby only 20% of the diverted flow returns to the River. NCMWC's return efficiency is assumed to be 65%.

(2) Purchased Contract Water = 8,000 AF; NCMWC Deliveries = 120,200 AF. Modeling assumes that up to 2,000 AF could still be diverted by NCMWC during wet and normal years. During dry years, the modeling assumes that the City would take delivery of the full 6,000 AFY. See Appendix M-IX for additional modeling detail.

(3) Refers to portions of the Lower Sacramento River, south of Freeport.

(4) The change in minimum Freeport Flow is based on an average monthly minimum flow of 10,000 cfs.

(5) Cubic feet per second over 30 days.

Source: SWRI 2008

Beyond the actual change in the timing of diversion, the change in where surface water is applied as a result of the operation of the Off-site Water Facility Alternatives are also expected to result in corresponding reductions in the efficiency of return water draining back to the Sacramento River. Under existing conditions, approximately 35 percent of the CVP water applied within the NCMWC service area drains back into the river as a result of the complex network of drainage conveyance facilities operated by NCMWC. With operation of the Off-site Water Facilities, approximately 20 percent of the CVP Water would return to the Sacramento River with the largest source of return water coming from discharges from the SRCSD Wastewater Treatment Plant (WWTP).

Based on the conditions shown in Table 3B.9-3 for the Off-site Water Facility Alternatives and related effects to surface flows within the Sacramento River, the impacts of the Off-site Water Facility Alternatives to hydrologic conditions within the Delta would be minor and not expected to adversely affect CVP and SWP reservoir operations or pumping in the south Delta. From a perspective of total water diverted, changes in the Sacramento River as attributed to the Off-site Water Facility Alternatives would be insignificant given that Off-site Water Facility Alternatives would divert water currently assigned and diverted from an existing upstream user and would not change the amount of water diverted, only the location of the point of diversion and timing. Further, it is reasonable to conclude that the Off-site Water Facility Alternatives would not significantly reduce the flows in the Sacramento River at times when the Off-site Water Facilities would increase diversions as a result of the change to an M&I delivery schedule since more water would be present in the Sacramento River at these times. Based on this determination, the Off-site Water Facility Alternatives would not result in any significant direct or indirect changes in Delta inflow and outflow that could otherwise interfere with any CVP and SWP export diversions. For this reason, these **direct** and **indirect** impacts would be **less than significant**. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

IMPACT 3B.9-5 Exceed Drainage Capacity and Contribute Sources Polluted Runoff. *The Off-site Water Facilities could create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.*

NCP, PA, 1, 1A, 3, and 3A

As previously indicated under Impact 3B.9-3, a formal Drainage Plan has not been prepared for the WTP and/or other Off-site Water Facilities components. Given that the conveyance pipeline would be completely buried underground following construction with no corresponding increase in impervious surfaces, no changes in post-construction runoff volumes are anticipated from the conveyance facilities that could otherwise overwhelm existing drainage infrastructure. Drainage runoff from the On-site or White Rock WTP site would enter Buffalo Creek near its headwaters, either east or west of Prairie City Road, respectively. Although typical engineering standards require that all storm drain pipelines are capable of conveying a 10-year frequency storm while providing temporary storage for the 100-year event, without the availability of actual engineering plans the City unable to confirm compliance with these standards. Without confirmation that the WTP's design satisfies this minimum criteria, there remains a potential for the WTP to contribute additional peak runoff that could exceed the channel capacity of Buffalo Creek, which ultimately becomes a piped waterway west of Hazel Avenue. Based on these determinations, the **direct** impacts would be **potentially significant**. ***[Similar]***

In relation to potential non-point source water quality impacts, the operation of the WTP would be required to comply with the SWRCB's Water Quality Order No. 97-03-DWQ, NPDES General Industrial Permit No. CAS000001, which applies to discharges of stormwater associated with industrial activities. Post-construction stormwater BMPs and monitoring standards would be required for the Off-site Water Facilities consistent with the General Industrial Permit and NAICS No. 22131 classification to achieve pollutant removal to the maximum extent practical. Compliance with the conditions set forth in the General Permit would address water quality concerns related to leaks and spills of chemicals stored and used at the WTP. In addition, State Law establishes minimum qualifications and an associated certification program for water treatment facility and distribution

operators to ensure that staff is informed of all WTP operating protocols and procedures. Further, compliance with the Municipal Program element of the newly adopted MS4 permit would be required. For these reasons, Alternatives 1, 1A, 3, and 3A would not create substantial additional sources of polluted runoff and the associated **indirect** impacts are **less than significant**. ***[Similar]***

Mitigation Measure: Implement Mitigation Measures 3B.9-3a and 3B.9-3b.

2, 2A, and 2B

Under Off-site Water Facility Alternatives 2, 2A, and 2B, water treatment would occur at the Vineyard SWTP. Beyond adding additional treated water demand to the Vineyard SWTP, the Off-site Water Facility Alternatives 2, 2A, and 2B would not create a new potential source of polluted runoff and a **less-than-significant** impact would occur. ***[Lesser]***

Mitigation Measure: No mitigation measures are required.

4 and 4A

As previously indicated, a formal drainage plan has not been prepared for the Off-site Water Facility Alternatives. However, based on a preliminary review, drainage runoff from the WTP site would enter into an existing drainage conveyance system that discharges into Buffalo Creek. Following construction, the conveyance pipeline would be completely buried underground, and therefore would not result in increased amounts of impervious surfaces. Based on these determinations, only the WTP component has the potential to exceed the capacity of existing drainage systems and, therefore, the **direct** and **indirect** impacts could be **potentially significant**. ***[Similar]***

Mitigation Measure: Implement Mitigation Measure 3B.9-3a and 3B.9-3b.

With the implementation of the above mitigation measures, impacts to existing drainage infrastructure and would be reduced to a **less-than-significant** level through the preparation of a formal drainage plan to attenuate post-construction runoff thereby minimizing the potential for off-site flooding and long-term water quality impacts. The implementation of Mitigation Measure 3B.9-3a would require that all storm drain pipelines and the proposed detention basin include sufficient capacity to minimize concerns related to the effects of hydromodification.

IMPACT 3B.9-6 Impede or Redirect Flood Flows. *The Off-site Water Facilities could place structures within a 100-year flood hazard area, which would impede or redirect flood flows.*

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A

The WTP and storage facilities would not be constructed within a delineated 100-year flood hazard area or floodway per CDPH requirements. As a result, the construction and operation of this Off-site Water Facilities feature would not place structures within a 100-year flood hazard area as mapped on the most recent federal Flood Insurance Rate Map. Small segments of the proposed conveyance pipelines under all the alternatives would cross floodways or flood zones associated with Morison Creek, Elder Creek, or Laguna Creek. These crossings would be completed using in-channel or trenchless construction techniques and would be installed at sufficient depth below existing and/or planned flood control facilities.

Following construction, the conveyance pipeline would generally be submerged a minimum of five feet below the ground surface and set back from local waterways. Facilities installed beneath the bed of the local creeks would be constructed within a 100-year flood zone, but would be situated, beneath the channel bed. Additionally, construction of these facilities, particularly at water crossings, would likely occur during the summer months and would be of limited duration and, therefore, would be unlikely to expose workers to significant risk of injury or

death as a result of flooding. However, without the availability of site-specific engineering plans, the City is unable to ensure that the conveyance pipeline is placed within suitable bedding materials at the required depths below the channel bed. The improper placement of the conveyance pipeline at waterway crossings could destabilize the impacted portion of the channel bed and banks thereby contributing to changes in downstream changes in hydrology. The **direct** and **indirect** impacts of these changes are considered **potentially significant**. ***[Similar]***

Mitigation Measure: Implement Mitigation Measures 3B.7-1a and 3B.9-1a.

With the implementation of recommendations from a licensed geotechnical engineer as required by Mitigation Measure 3B.7.1a combined with measures designed to minimize impacts to channel morphology during construction as required by Mitigation Measure 3B.9.1a, the Off-site Water Facility Alternatives would not result in significant impedances or redirection of flood flows and the impact would be **less-than-significant**.

IMPACT 3B.9-7 Inundation from Flooding or Mudflows. *The Offsite Water Facility Alternatives would not expose people or structures to a significant risk of loss, injury or death involving inundation by flooding, including flooding as a result of the failure of a levee or dam, seiche, or tsunami or inundation by mudflows.*

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A

In recognition of the "Water" Study Area's inland location, the threat of tsunamis or seiche is considered negligible. The WTP site(s) are situated in upland locations and do not require levees for flood protection. Although, the WTP site(s) are situated downslope of Folsom Reservoir, their development would occur in existing developed areas or those currently planned for development. Based on these circumstances, the hazard of inundation from a tsunamis, seiche, or failure of a levee or dam is minimal and **no impact** would occur. ***[Similar]***

As described in Section 3B.7, "Geology, Soils, and Paleontological Resources," the topography within the vicinity of Zone 4 of the Off-site Water Facilities Study Area consists of only gradual slopes and, therefore, the hazard of mudflows of adversely affecting the Off-site Water Facilities is very low. For this reason, **no impact** would occur. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

3B.9.4 RESIDUAL SIGNIFICANT IMPACTS

With implementation of the mitigation measures listed above, implementation of the Offsite Water Facility Alternatives would not result in any residual significant impacts related to increased risk of flooding from stormwater runoff, from water quality effects from long-term urban runoff, or from short-term alteration of drainages and associated surface water quality and sedimentation. Based on these circumstances, the Off-site Water Facility Alternatives would not result in any residential significant and unavoidable adverse impacts to surface water hydrology and water quality.

Based on the hydrologic modeling conducted in support for this EIR/EIS using CALSIM II, potential impacts to flows within the Sacramento River as a result of the operation of the Off-site Water Facility Alternative would be less than significant and no mitigation would be required.

3A.10 LAND USE AND AGRICULTURAL RESOURCES

3A.10.1 AFFECTED ENVIRONMENT

EXISTING LAND USES

Specific Plan Area

The SPA consists of over 3,510 acres that is generally located in eastern Sacramento County immediately south of the Folsom City limits (see Exhibits 2-1 and 2-2 in Chapter 2, "Alternatives"). The SPA generally lies south of U.S. Highway 50 (U.S. 50), north of White Rock Road, east of Prairie City Road, and west of the Sacramento/El Dorado County line.

The SPA generally consists of undeveloped grasslands used for cattle grazing. Structures within the SPA are limited to one residence and agricultural outbuildings located in the western portion, radio towers located in the northeastern corner, and a high-voltage electrical transmission corridor that traverses the western portion in a north-south direction between U.S. 50 and White Rock Road.

Adjacent Land Uses

Urbanized development within the existing Folsom City limits are north of the SPA. These urban areas consist of large residential and commercial developments, several of which are currently under construction. Neighborhoods and shopping centers are generally concentrated as units and separated by areas of open space.

Land south of the SPA is characterized primarily by seasonal grazing land in an unincorporated area regulated by Sacramento County. The Teichert, Walltown, and DeSilva-Gates hardrock quarries are proposed 0.9 mile, 1.2 miles, and 3.7 miles, respectively, south of the SPA. The Prairie City State Vehicle Recreation Area is approximately 1.1 miles southeast of the SPA via Prairie City Road.

The El Dorado County line forms the eastern boundary of the SPA. The Stonebriar subdivision is located east of this boundary, immediately adjacent to the SPA, in the community of El Dorado Hills.

Industrial land owned by GenCorp and associated buffer lands are located to the west of Prairie City Road.

Other nearby planned or approved developments, including the Westborough at Easton Specific Plan to the west; the Promontory, El Dorado Hills, and Bass Lake Specific Plans to the northeast; the Valley View Specific Plan to the east; and the Carson Creek Specific Plan to the southeast, have converted or have been approved to convert predominantly agricultural and open space areas to urban uses. In addition, there are numerous proposed development projects, including the Rio del Oro Specific Plan, Heritage Falls, the SunCreek Specific Plan, the Preserve at Sunridge, and Cordova Hills, southwest of the SPA in the City of Rancho Cordova.

Off-Site Improvement Areas

Off-site project-related improvements include construction of the Prairie City Road and Oak Avenue interchange improvements, the Rowberry Drive Overcrossing, a sewer force main, a detention basin, and the two roadway connections into El Dorado County.

The Prairie City Road interchange improvements would be located on undeveloped land in Sacramento County west of the SPA and south of the existing Prairie City Road/U.S. 50 interchange. Commercial land uses are located north and northeast of the existing interchange, and areas south, southeast, and southwest of the interchange improvement site are undeveloped.

The Rowberry Drive Overcrossing, Oak Avenue interchange improvements, and the sewer force main alignment would be located north of the SPA within the Folsom City limits. These areas are surrounded by existing commercial land uses to the east and west and residential development to the north.

The off-site detention basin would be located on and surrounded by undeveloped land owned by GenCorp, west of Prairie City Road. An approximately 8-foot-high chain link fence separates this area from the SPA.

The El Dorado County road connections would be located east of the SPA and connect to existing roadways in the Stonebriar subdivision. The northern roadway connection would connect directly into an existing cul-de-sac at the terminus of Winterfield Drive on the eastern boundary of the SPA. The southern roadway connection would cross undeveloped open land to connect with Prima Drive. Low-density residential development and areas small areas of open space surround these roadway connections on the north, south, and east.

AGRICULTURAL RESOURCES

Farmland Map Classifications

The SPA and off-site improvement areas do not include any agricultural land designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance as defined in Appendix G of the State CEQA Guidelines. The Sacramento County Important Farmland map, published by the California Department of Conservation's (DOC's) Division of Land Resource Protection, designates the entire SPA, the off-site sewer force main alignment, and the detention basin as Grazing Land. The Rowberry Drive Overcrossing and Oak Avenue interchange improvement areas are designated as both Grazing Land and Urban and Built-Up Land (DOC 2009a).

The area identified for the two roadway connections into El Dorado Hills is designated by the El Dorado County Important Farmland map as Grazing Land and Urban and Built-Up Land (DOC 2009b).

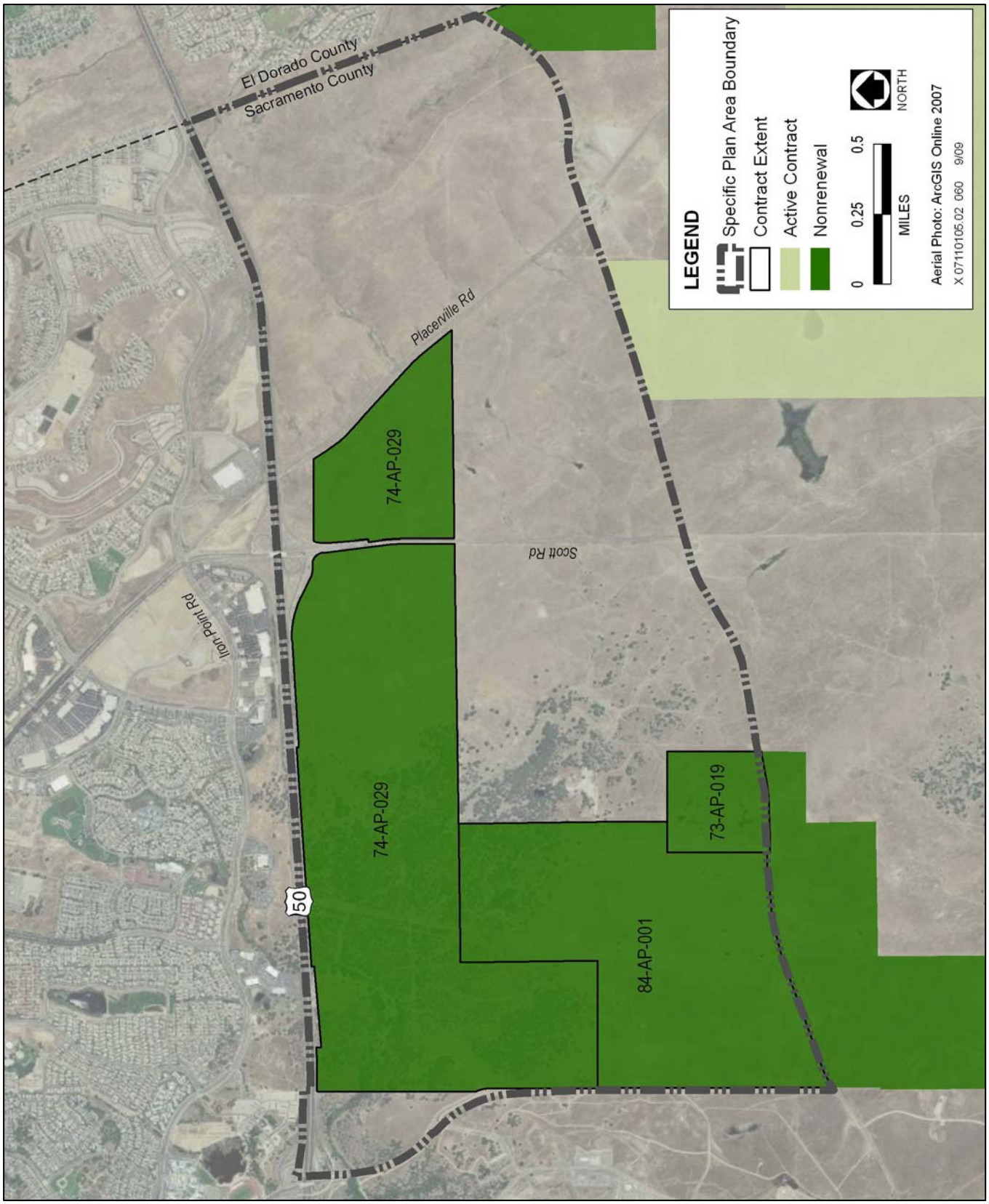
Williamson Act Contracts

Approximately 187,102 acres of land in Sacramento County was under Williamson Act contracts in 2007 (DOC 2009:26). Of these lands, approximately 10,605 acres were in the nonrenewal process (DOC 2009:29). The nonrenewal process is the most common mechanism for termination of Williamson Act contract lands and most Williamson Act contracts are terminated through nonrenewal expiration. In Sacramento County, approximately 406 acres of land under of Williamson Act contracts entered the nonrenewal process, and the amount of contract land terminated through nonrenewal expirations was approximately 524 acres as of 2007 (DOC 2009:34, 35).

Urban development of Williamson Act lands prior to contract expiration requires cancellation of the contracts pursuant to California Government Code Section 51282 (see "Regulatory Framework," below). No Williamson Act contracts in Sacramento County were cancelled in 2007 (DOC 2009:39).

As shown in Table 3A.10-1 and Exhibit 3A.10-1, approximately 1,530 acres of the SPA consists of agricultural lands under existing Williamson Act contracts that are in the process of nonrenewal. Notices of nonrenewal were filed on these parcels in 2004 and 2006; as a result, these existing contracts will expire in 2014 and 2016, respectively.

None of the land proposed for the U.S. 50 interchange improvements, sewer force main, detention basin, or the two roadway connections into El Dorado Hills are held under Williamson Act contracts.



Source: DOC 2009d, Masters 2009

Williamson Act Lands **Exhibit 3A.10-1**

Table 3A.10-1 Williamson Act Contracts in the SPA			
Contract Number	APN	Acreage	Nonrenewal Date
74-AP-029	072 0060 045	821.3	2006
74-AP-029	072 0060 048	164.6	2006
84-AP-001	072 0060 072	96.9	2004
73-AP-019	072 0060 073 [1]	82.5	2004
84-AP-001	072 0060 074	447.2	2004
Total [2]		**1,530**	—

Notes: AP = Assessor's Parcel; APN = Assessor's Parcel Number

[1] This APN corresponds to the former Sacramento Country Day School property located in the southeast portion of the SPA along White Rock Road. The Sacramento Country Day School withdrew its application to construct a campus in the SPA. Although it is assumed that school development would eventually occur on that parcel, there is currently no application; therefore, it is assumed this contract would be terminated through nonrenewal expiration and there would not be a filing for early cancellation.

[2] Excludes the 80-acre former Sacramento Country Day School property.

Source DOC 2009c; Masters pers. comm., 2009

3A.10.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

There are no Federal plans, policies, regulations, or laws related to land use planning that are applicable to the Proposed Project or alternatives under consideration.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

State Planning and Zoning Laws

California Government Code Section 65300 et seq. establishes the obligation of cities and counties to adopt and implement general plans. The general plan is a comprehensive, long-term, and general document that describes plans for the physical development of a city or county and of any land outside its boundaries that, in the city's or county's judgment, bears relation to its planning. The general plan addresses a broad range of topics, including, at a minimum, land use, circulation, housing, conservation, open space, noise, and safety. In addressing these topics, the general plan identifies the goals, objectives, policies, principles, standards, and plan proposals that support the city's or county's vision for the area. The general plan is a long-range document that typically addresses the physical character of an area over a 20-year period or more. Finally, although the general plan serves as a blueprint for future development and identifies the overall vision for the planning area, it remains general enough to allow for flexibility in the approach taken to achieve the plan's goals.

The State Zoning Law (California Government Code Section 65800 et seq.) establishes that zoning ordinances, which are laws that define allowable land uses within a specific zone district, are required to be consistent with the general plan and any applicable specific plans. When amendments to the general plan are made, corresponding changes in the zoning ordinance may be required within a reasonable time to ensure that the land uses designated in the general plan would also be allowable by the zoning ordinance (California Government Code Section 65860[c]).

A specific plan is another planning device that governs a smaller land area than the general plan, but must be consistent with the overarching general plan. Specifically, it implements the general plan in a particular geographic area. (California Government Code, Section 65450.) Generally, it describes the distribution, location,

and extent of the land uses and the associated infrastructure, as well as standards governing future development. The specific plan must include a statement of the relationship between it and the general plan. (California Government Code, Section 65451, subd. [b].) An agency's conclusion that a specific plan is consistent with its general plan "carries a strong presumption of regularity." (*Napa Citizens for Honest Government v. County of Napa Board of Supervisors* [2001] 91 Cal.App.4th 342, 357.)

Local Agency Formation Commissions

The local agency formation commission (LAFCo) is charged with applying the policies and provisions of the Cortese-Knox-Hertzberg Local Government Reorganization Act (reorganized and amended by legislation enacted in 2000) to its decisions regarding annexations, incorporations, reorganizations, and other changes in government organization.

LAFCos are intralocal agencies that were created by state legislation to ensure that changes in governmental organization occur in a manner that provides efficient and good-quality services and preserves open space land resources. In 1963, the California Legislature established LAFCos in each county and gave them regulatory authority over local agency boundary changes. In the 1970s, the legislature recognized the connection between decisions concerning governmental organization and the issues of urban sprawl and loss of prime agricultural land. In response to these concerns, LAFCos were charged with implementing changes in governmental organization in a manner that preserves agricultural and open space land resources, as well as provides the delivery of services. In 2000, the Cortese-Knox-Hertzberg Act was further amended as a result of Assembly Bill 2838.

The general policies of LAFCos include:

- encourage planned, well-ordered, efficient urban development patterns;
- encourage the logical formation and determination of boundaries;
- ensure that affected populations receive efficient governmental services; and
- guide development away from open space and prime agricultural land uses unless such actions would not promote planned orderly and efficient development.

For the project, the Sacramento LAFCo oversees the establishment or revision of boundaries for local municipalities and independent special districts for Sacramento County (see discussion below under "Regional and Local Plans, Policies, Regulations, and Ordinances").

California Important Farmland Inventory System and Farmland Mapping and Monitoring Program

The Farmland Mapping and Monitoring Program (FMMP) was established by the State of California in 1982 to continue the Important Farmland mapping efforts begun in 1975 by the Soil Conservation Service (SCS) (now Natural Resources Conservation Service [NRCS]). The intent of the SCS was to produce agricultural-resource maps based on soil quality and land use across the nation. The DOC sponsors the FMMP and is also responsible for establishing agricultural easements in accordance with California Public Resources Code Sections 10250–10255.

As part of the nationwide effort to map agricultural land uses, NRCS uses a series of definitions known as Land Inventory and Monitoring (LIM) criteria. The LIM criteria classify the land's suitability for agricultural production. Suitability includes both the physical and chemical characteristics of soils as well as the actual land use. Maps of Important Farmland are derived from the NRCS soil survey maps using the LIM criteria and are available by county. The maps prepared by NRCS classify land into one of eight categories, which are defined as follows (DOC 2004):

- **Prime Farmland—**Land that has the best combination of features for the production of agricultural crops.
- **Farmland of Statewide Importance—**Land other than Prime Farmland that has a good combination of physical and chemical features for the production of agricultural crops.
- **Unique Farmland—**Land of lesser quality soils used for the production of the State's leading agricultural cash crops.
- **Farmland of Local Importance—**Land that is of importance to the local agricultural economy.
- **Grazing Land—**Land with existing vegetation that is suitable for grazing.
- **Urban and Built-up Lands—**Land occupied by structures with a density of at least one dwelling unit per 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, institutional, public utility structures, and other developed purposes.
- **Land Committed to Nonagricultural Use—**Vacant areas; existing lands that have a permanent commitment to development but have an existing land use of agricultural or grazing lands.
- **Other Lands—**Land that does not meet the criteria of the remaining categories.

The designations for Prime Farmland, Farmland of Statewide Importance, and Unique Farmland, are defined together under the term "Agricultural Land" in CEQA (California Public Resources Code Sections 21060.1 and 21095 and State CEQA Guidelines Appendix G). The conversion of these types of farmland could be considered an environmental impact.

Williamson Act Contracts

The California Land Conservation Act of 1965, commonly known as the Williamson Act, enables local governments to form contracts with private landowners to promote the continued use of the relevant land in agricultural or related open space use. In return, landowners receive property tax assessments that are based on farming and open space uses instead of full market value. Local governments receive an annual subvention (subsidy) of forgone property tax revenues from the state via the Open Space Subvention Act of 1971.

The Williamson Act empowers local governments to establish "agricultural preserves" consisting of lands devoted to agricultural uses and other compatible uses. When such preserves are established, the locality may offer owners of agricultural land that is included in the preserves the opportunity to enter into annually renewable contracts that restrict the land to agricultural use for at least 10 years (i.e., the contract continues to run for 10 years following the first date upon which the contract is not renewed). In return, the landowner is guaranteed a relatively stable tax base, founded on the value of the land for agricultural/open space use only and unaffected by its development potential.

Cancellation of a Williamson Act contract involves an extensive review and approval process, in addition to payment by the landowner of fees of up to 12.5% of the property value. The local jurisdiction approving the cancellation must make *either one* of the following findings:

- that the cancellation is consistent with the purpose of the California Land Conservation Act (Section 51282[a][1] of the California Government Code), or
- that the cancellation is in the public interest (Section 51282[a][2] of the California Government Code).

To support the finding that the cancellation of a Williamson Act contract is consistent with the purpose of the California Land Conservation Act, all of the following subfindings must be made:

- that the cancellation is for land on which a notice of nonrenewal has been served in accordance with Section 51245 of the California Government Code;
- that cancellation is not likely to result in the removal of adjacent lands from agricultural use;
- that cancellation is for an alternative use that is consistent with the applicable provisions of the city or county general plan;
- that cancellation will not result in discontiguous patterns of urban development; and
- that there is no proximate noncontracted land that is both available and suitable for the use to which it is proposed the contracted land be put, or that development of the contracted land would provide more contiguous patterns of urban development than development of proximate noncontracted land.

To support the finding that the cancellation of a Williamson Act contract is in the public interest, both of the following subfindings must be made:

- that other public concerns substantially outweigh the objectives of the Williamson Act; and
- that there is no proximate noncontracted land that is both available and suitable for the use to which it is proposed the contracted land be put, or that development of the contracted land would provide more contiguous patterns of urban development than development of proximate noncontracted land.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

Sacramento Area Council of Governments' Sacramento Region Blueprint

The Sacramento Area Council of Governments (SACOG) is a regional organization that provides a variety of planning functions over its six-county region (Sacramento, Yolo, Placer, Sutter, Yuba, and El Dorado Counties). SACOG's primary functions are to provide transportation planning and funding for the region and to study and support resolution of regional issues. In 2002, SACOG initiated what is now known as the Sacramento Region Blueprint (Blueprint) process after computer modeling of the region showed that current growth patterns and transportation investment priorities would result in substantial increases in congestion over the next 50 years, as well as substantial consumption of privately held natural and agricultural land. The goal of the process was to determine whether alternatives to current and planned transportation and land use patterns could be established to improve the region's long-term travel patterns and air quality, as well as retain substantially more open space. The Blueprint is the product of a 3-year public-involvement effort and is intended to guide land use and transportation choices in the region over the next 50 years. During this 50-year period, the region's population is projected to grow from 2 million to more than 3.8 million, jobs are projected to increase from 921,000 to 1.9 million, and housing units are projected to increase from 713,000 to 1.5 million.

The starting point for the Blueprint process was the "Base Case Scenario," which shows how the region would develop through the year 2050 if growth patterns of the recent past continue. Under the Base Case Scenario, growth would continue outward into largely rural areas and on the fringes of current development. The model predicted that the average resident living in a version of a future typical of the Base Case Scenario in 2050 would probably live in a single-family house on a fairly large lot in a subdivision with similar houses. This resident would commute a longer distance to work than is typical today; trips to work and commercial areas would be lengthy and slow because of substantial increases in congestion.

In December 2004, the SACOG Board of Directors adopted the Preferred Blueprint Scenario, a vision for growth that promotes compact, mixed-use development and more transit choices as an alternative to low-density development. It includes a greater range of housing products, reinvestment in already developed areas, protection of natural-resource areas from urbanization, and more transportation choices. Residents living in a future

developed area consistent with the Preferred Blueprint Scenario in 2050 probably would live in a home on a smaller lot, in a neighborhood with some larger houses and some attached row houses, apartments, and condominiums. Residents would drive to work, but the trip would likely be shorter than present conditions, and the time needed to get there would be about the same as it is now. It is anticipated that residents may sometimes use public transportation (e.g., train or bus). Most of their shopping and entertainment trips would still be via the automobile, but the distances would be shorter. Some of these shopping trips might be via walking or biking down the block a short distance to a village or town center that contains neighborhood stores with housing units built on top of them, as well as a small park or plaza.

The Sacramento Region Blueprint depicts a way for the region to grow through the year 2050 generally consistent with seven principles of "smart growth." These principles are summarized below and include a comparison of development projected under Base Case Scenario to development projected under the Preferred Blueprint Scenario (SACOG and Valley Vision 2004).

- **Transportation Choices:** Developments should be designed to encourage people to sometimes walk, ride bicycles, ride the bus, ride light rail, take the train, or carpool. Use of Blueprint growth concepts for land use and right-of-way design would encourage use of these modes of travel and the remaining auto trips would be, on average, shorter. In the Base Case Scenario, 2% of new housing and 5% of new jobs would be located within walking distance of 15-minute bus or train service, the number of vehicle miles traveled per day per household would be 47.2 miles, and the total time devoted to travel per household per day would be 81 minutes. The Preferred Blueprint Scenario reduces the number of trips taken by car by about 10%. These trips are shifted to transit, walking, or biking. In the Preferred Blueprint Scenario, 38% of new homes and 41% of new jobs would be located within walking distance of bus or train service with 15-minute service intervals, the number of vehicle miles traveled per day per household would be 34.9 miles, and the total time devoted to travel per household per day would be 67 minutes. With the Preferred Blueprint Scenario, per capita, there would be 14% less carbon dioxide and particulates produced by car exhaust compared to the Base Case Scenario.

- **Mixed-Use Developments:** Building homes and shops, entertainment, office, and light industrial uses near each other can encourage active, vital neighborhoods. This mixture of uses can be either in a vertical arrangement (mixed in one building) or horizontal (with a combination of uses in close proximity). These types of projects function as local activity centers where people would tend to walk or bike to destinations. Separated land uses, on the other hand, lead to the need to travel more by auto because of the distance between uses. Under the Base Case Scenario, 26% of people would live in communities with a good, or balanced, mix of land uses by 2050. In the Preferred Blueprint Scenario, 53% of people would live in balanced communities.

- **Compact Development:** Creating environments that are more compactly built and use space in an efficient but aesthetic manner can encourage more walking, biking, and public-transit use and shorten auto trips. Under the Base Case Scenario, by 2050, new development would require the consumption of an additional 661 square miles of land. Under the Preferred Blueprint Scenario, 304 square miles of new land would be required for new development.

- **Housing Choice and Diversity:** Providing a variety of places where people can live—apartments, condominiums, townhouses, and single family detached homes on varying lot sizes—creates opportunities for the variety of people who need them: families, singles, seniors, and people with special needs. This issue is of special concern for people with very low-, low-, and moderate-incomes. By providing a diversity of housing options, more people would have a choice.

- **Use of Existing Assets:** In urbanized areas, development on infill or vacant lands, intensification of the use of underutilized parcels, or redevelopment can make better use of existing public infrastructure. This can also include rehabilitation and reuse of historic buildings; denser clustering of buildings in suburban office parks; and joint-use of existing public facilities, such as schools and parking garages. Under the Base Case Scenario,

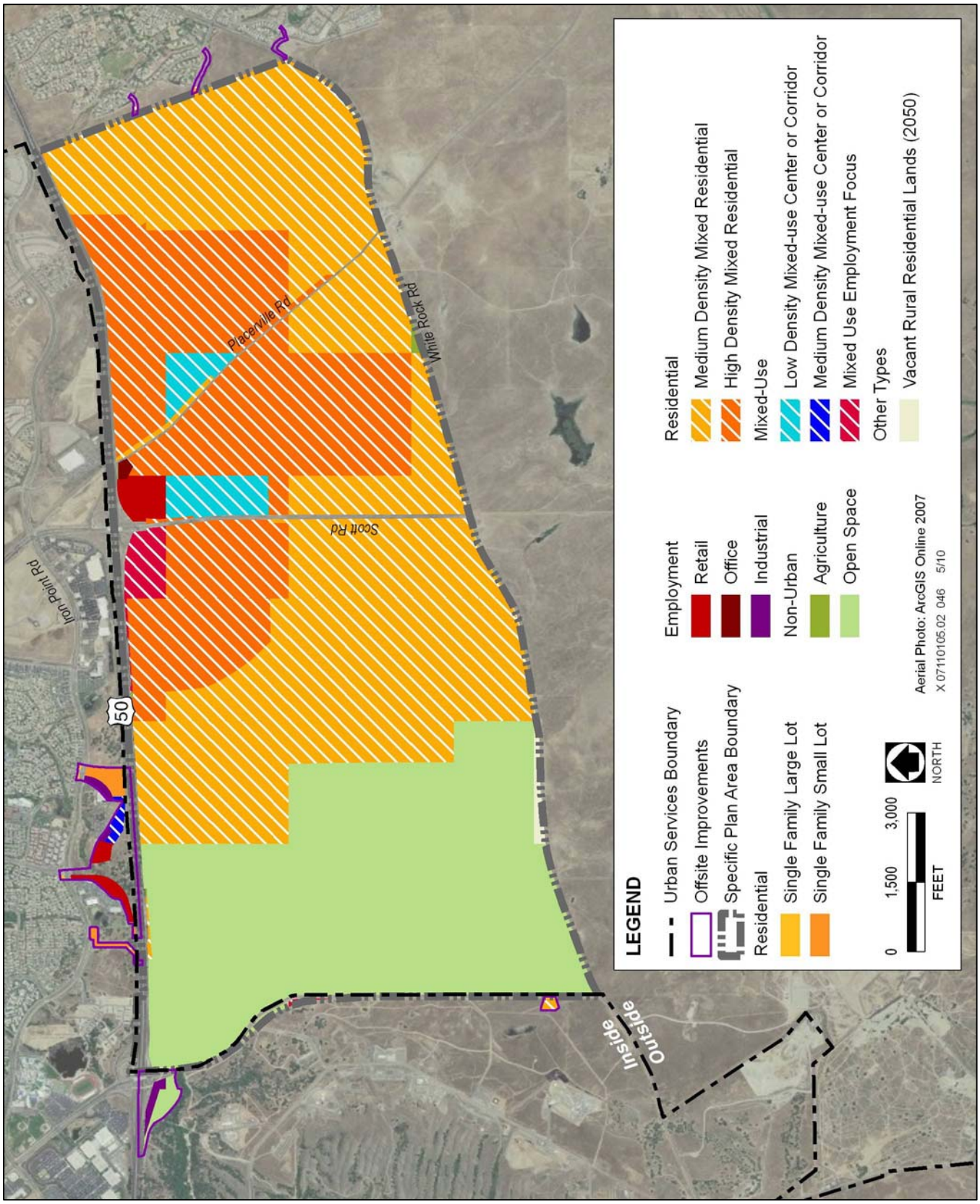
all new development would be on vacant land. Under the Preferred Blueprint Scenario, it is suggested that 13% of all new housing and 10% of all new jobs would occur through reinvestment.

- **Quality Design:** The design details of any land use development—such as the relationship to the street, setbacks, placement of garages, sidewalks, landscaping, the aesthetics of building design, and the design of the public rights-of-way—are factors that can influence the attractiveness of living in a compact development and facilitate the ease of walking and biking to work or neighborhood services. Good site and architectural design is an important factor in creating a sense of community and a sense of place. Under the Base Case Scenario, 34% of people would live in pedestrian-friendly neighborhoods. Under the Preferred Blueprint Scenario, in 2050, pedestrian-friendly neighborhoods would rise to 69%.

- **Natural Resources Conservation:** This principle encourages the incorporation of public-use open space (such as parks, town squares, trails, and greenbelts) within development projects, above state requirements; it also encourages wildlife and plant habitat preservation, agricultural preservation, and promotion of environmentally friendly practices, such as energy-efficient design, water conservation and stormwater management, and planting of shade trees. Under the Base Case Scenario, 166 square miles of agricultural land would be converted into urban uses. Under the Preferred Blueprint Scenario, 102 square miles of agricultural land would be converted to urban uses. When the Preferred Blueprint Scenario was developed, the authors included a calculated, predetermined "preservation factor" that was intended to account for a certain amount of land that could be set aside in the future to preserve natural resources. However, the Preferred Blueprint Scenario did not attempt to map specific areas that could potentially be set aside as preserves. The only "preserve" areas that were mapped were those already designated as such that were in existence at the time the Preferred Blueprint Scenario was created.

The Preferred Blueprint Scenario predicts long-term environmental benefits from undertaking a realistic long-term planning process; these benefits are intended to minimize the extent of the inevitable physical expansion of the overall regional urban areas. In summary, if the Preferred Blueprint Scenario were followed throughout the SACOG region, it would result in more mixed-use communities; provide a greater number of small-lot, single family detached homes; develop a greater number of attached homes; reinvest in existing business and residential areas; and create more pedestrian-friendly neighborhoods. The results of implementing these principles would be the protection of natural resources (because less land would be required for urban uses) and less agricultural land conversion. In addition, the Preferred Blueprint Scenario predicts less time devoted to travel, fewer car trips, and fewer single-occupancy vehicle miles traveled to work and local businesses compared with development under the Base Case. The reduction in traffic would improve air quality in the region by reducing carbon monoxide and particulate matter produced by car exhaust.

The Blueprint process received broad support from most of its member agencies; however, the Blueprint is advisory and therefore does not establish land-use restrictions. SACOG has no land use authority. Although it is only advisory, the Blueprint provides policy guidance in the Sacramento region for long-term regional land use and transportation planning. A number of jurisdictions either are adopting the Blueprint concepts or are considering and encouraging projects consistent with the Blueprint. Although not establishing "buildout targets," the SACOG Blueprint Preferred Scenario anticipates an additional 24,400 households and 31,700 jobs in the City of Folsom (City) between 2000 and 2050 (SACOG and Valley Vision 2004b). With regard to the project, the SACOG Blueprint Preferred Scenario anticipates approximately 12,000 households and 7,500 jobs would be generated by development of the SPA (City of Folsom 2007). The Blueprint assumes the City would have a population of 105,000 by 2050 and most of this growth would be located on vacant land within the current City boundaries and within the SPA. Further, the Blueprint anticipates the SPA would provide open space consistent with City policies and would be developed primarily with housing in similar amounts of detached and attached single-family units, rowhouses, townhomes, condominiums, and apartments to provide housing opportunities for the City's growing employment centers (Exhibit 3A.10-2).



Source: SACOG 2009

SACOG Blueprint Land Uses **Exhibit 3A.10-2**

Memorandum of Understanding between Sacramento County and the City of Folsom

In November 2000, Sacramento County (County) and the City of Folsom entered into a Memorandum of Understanding (MOU) to serve as a guide for sound regional long-range planning efforts relative to the annexation of the SPA. The MOU outlines a comprehensive planning process for the SPA, including public participation with various stakeholders and the general public. It also addresses a number of issues including water supply, transportation, schools, and open space that were later incorporated into language found in Measure W (discussed below) and subsequently in the City Charter.

Sacramento Local Agency Formation Commission

Sacramento LAFCo is responsible for reviewing, approving, or disapproving changes in organization to cities and special districts, including annexations, detachments, new formations, and incorporations. LAFCos must, by law, create municipal-service reviews and update spheres of influence for each independent local governmental jurisdiction within their Countywide jurisdiction. Listed below are the adopted Sacramento LAFCo applicable policies and guidelines for approval of boundary adjustments.

- Demonstrate that adequate services will be provided within the time frame needed by the inhabitants of the area included within the proposed boundary.
- Identify existing land uses and a reasonable projection of land uses which would occur if services were provided consistent with an updated Master Services Element.
- Present a map that clearly indicated the location of existing and proposed facilities, including timing and location of those facilities.
- Describe the nature of each service provided.
- Demonstrate consistency with the applicable General Plan designations and text.
- Approve conversion of prime agricultural land in open space and other uses only if:
    - the proposal will lead to the planned, orderly, and efficient development in the area;
    - the subject land is consistent with the Spheres of Influence plan;
    - the development of the subject land is likely to occur within the next five years; and
    - the proposal will have no significant adverse effect on the physical and economic integrity of other agricultural lands.
- Assess the environmental consequences of its [LAFCo's] actions and decisions (required by CEQA), and take actions to avoid or minimize a project's adverse environmental impacts if feasible, or approve a project despite significant effects because it [LAFCo] finds overriding considerations exist.

To comply with CEQA, Sacramento LAFCo would take one or more of the following actions with regard to this project:

- approve the requested determinations (at its discretion) without changes if environmental impacts are less than significant,
- require the project applicant(s) to modify a project,

- deny the proposal because of unacceptable adverse environmental impacts, or
- approve the project despite its significant effects by making findings of overriding consideration.

Resolution No. LAFC 1196

In June 2001, the Sacramento LAFCo approved the City's sphere of influence amendment application (Resolution No. LAFC 1196), and the City's sphere of influence was expanded to include the SPA. As part of the amendment approval, Sacramento LAFCo identified conditions to ensure future annexation of the SPA would include adequate services for new development within proposed annexation areas; avoid premature conversion of agricultural resources; preserve open space; and encourage planned, logical, and orderly patterns of urban growth. Prior to annexation, the project applicant(s) must demonstrate that the project meets the conditions established in Resolution No. LAFC 1196 provided below.

- **City General Plan Revisions.** Revise and update the City's general plan in accordance with State law.
- **City General Plan Housing Element.** Obtain a certification of substantial compliance from the California Department of Housing and Community Development consistent with Government Code Section 65585(d) or (h). The City shall establish in its approved Housing Element that it has or will meet its regional share housing needs for all income levels for the second and third Housing Element revisions, as defined in Government Code Section 65588.
- **Land Use Designations.** Adopt appropriate land use designations for all property within the Sphere of Influence area.
- **Pre-zoning.** Pre-zone the property consistent with Government Code Section 56375 and the Folsom General Plan.
- **Comprehensive Planning.** Develop comprehensive planning of the SPA that demonstrates well planned, orderly development that avoids the premature conversion of open space.
- **Master Service Agreement.** Submit a Master Services Agreement that identifies a program for implementation and financing for major infrastructure and services components needed to support the proposed distribution, location, extent, and intensity of proposed land uses. The Master Services Agreement must identify a water supply source and the process for securing sufficient water supplies to serve the annexed area.
- **Local Roadway Improvements.** Prepare a plan for necessary improvements to each jurisdiction's roadway network to accommodate increased traffic from the SPA in cooperation with Sacramento and El Dorado Counties. This plan must include a list of improvements, responsible jurisdiction, phasing plan, and clearly defined financing mechanism. Implementation of this plan must result in service levels on local roadways consistent with each jurisdiction's general plan.
- **Regional Roadway Improvements.** The City, in cooperation with Caltrans, Sacramento County, El Dorado County, the El Dorado County Transportation Commission, and SACOG, must identify traffic and transportation measures that are needed to mitigate potential impacts on regional transportation facilities from proposed development within the SPA. The City must also identify a funding mechanism to construct the traffic and transportation measures necessary to fully mitigate impacts from the SPA, and a timeline for the construction of improvements. As soon as reasonably possible, these improvements should be programmed into the Metropolitan Transportation Plan and Metropolitan Transportation Improvement Program.
- **Transit Master Plan.** Prepare a Transit Master Plan consistent with the City's General Plan. The master plan must identify bus transit routes, bus turnouts, pedestrian shelters, bus transfer stations, alignments for rail service, and the location of rail service stations.

- **Bikeway Master Plan.** Prepare a Bikeway Master Plan consistent with the City's General Plan. The master plan must identify bikeway and pedestrian facilities in the SPA consistent with the goals and policies of the City's general plan and incorporate bikeway designs for Prairie City Road and White Rock Road to be equivalent, or better, than those in the Sacramento City/County Bikeway Master Plan.

- **Drainage Master Plan.** Conduct hydraulic and hydrologic modeling of that portion of Alder Creek which transverses the SPA. A Drainage Master Plan must be prepared and address flood hazards, identify flood protection measures, and document no net increase in downstream floodwater surface elevations.

- **Habitat Mitigation Strategy.** Document the City's multi-species habitat mitigation strategy (Habitat Conservation Plan [HCP]) for the SPA. The strategy must address mitigation of impacts on habitat and biological resources that meets Federal and State regulatory requirements. The City may fulfill these requirements through participation in South Sacramento County HCP process.

- **Surface and Groundwater Contamination.** Document that on-site surface contamination has been remediated to Federal and State regulatory standards, and that groundwater contamination has been remediated or is being remediated effectively prior to annexation of any property owned by Aerojet General Corporation.

- **Water Supply.** Demonstrate that the City has a sufficient water supply to serve existing customers, future customers within the existing service area, and all proposed uses within the SPA in compliance with the terms and conditions of the Water Forum Agreement. This demonstration must be sufficient for LAFCo to determine water availability per Government Code Section 56668(k).

- **Wastewater Facilities.** Demonstrate the timely availability of wastewater transmission and treatment capacity to serve existing customers, future customers within the existing service area, and all proposed uses within the SPA.

- **Special Districts.** Meet and confer with the El Dorado Irrigation District (EID), the Sacramento Metropolitan Fire District, and any other special districts regarding impacts on these districts, including fiscal and operational impacts and loss of property tax revenue. With respect to EID, the City must not request any detachment from the EID service area.

- **School Mitigation.** Where permitted by law, incorporate feasible school mitigation requirements into any development agreements.

- **Mitigation Monitoring.** Comply with the mitigation measures identified in environmental review for expansion of sphere of influence boundary and adopted pursuant to CEQA by LAFCo Resolution No. LAFC 1193, including:

    - establish necessary roadway improvements and financing mechanisms;
    - implement requirements to reduce air quality emissions by 35%;
    - prepare an Air Quality Plan;
    - complete tree surveys and implement tree protection measures;
    - complete biological surveys and adopt avoidance and mitigation policies;
    - minimize incompatibility impacts on historic landscapes;
    - implement hazardous materials plans;
    - investigate and remediate railroad right-of-way, mining, and radio/transfer sites;
    - define the Alder Creek 100-year floodplain; and
    - identify secure sufficient water supplies.

- **Compliance with MOU.** Demonstrate compliance with the following conditions established in the MOU between the City and County, effective November 14, 2000:

- Prepare and adopt a comprehensive development plan to ensure the SPA would be efficiently served and resources would be protected.

- Provide for collaborative participation by the public and stakeholders including Sacramento and El Dorado Counties, the Folsom Cordova Unified School District and other stakeholders. The City must provide the opportunity for public participation through public hearings, community forums, neighborhood meetings, and other public meetings as deemed necessary.

- Identify water supplies to serve the SPA. Consistent with Goal 40 of the General Plan Public Facilities Element, no development may occur in the SPA until adequate water infrastructure or an infrastructure financing and phasing plan is in place.

- Preserve oak woodland, biological resources, and other habitat through preservation of open space by requiring the preservation of 30% natural open space within the annexed area.

- Develop an infrastructure financing and phasing plan. Consistent with Goal 40 of the General Plan Public Facilities Element, no development may occur in the SPA until adequate infrastructure or an infrastructure financing and phasing plan is in place.

- Establish revenue sharing agreements with Sacramento County establishing the apportionment of future tax revenues in the SPA.

Measure W

In November 2004, following a series of Visioning workshops, ballot Measure W (City Ordinance No. 1022) passed with support from 69% of the City voters. With the passage of Measure W, the City Charter was amended to require the Folsom City Council to take certain actions related to each of the issue areas described below prior to LAFCo's approval of annexation:

- **Water Supply**. Identify and secure the sources of water supply to serve the SPA without reducing the existing water supply currently serving users to the north of U.S. Highway 50, and at no cost to existing Folsom residents.

- **Transportation.** Adopt an Infrastructure Funding and Phasing Plan for the construction of roadways and transportation improvements that are necessary to reduce traffic impacts resulting from development of the SPA. The timing of the construction of the transportation improvements shall be tied to the anticipated rate of growth and associated traffic impacts. Existing Folsom residents shall not be required to pay fees for the construction of any new transportation improvements required to serve the SPA.

- **Open Space.** Maintain 30% of the SPA as natural open space to preserve oak woodlands and sensitive habitat areas. Natural open space cannot include active park sites, residential yard areas, golf courses, parking lots, or their associated landscaping.

- **Schools.** Provide the funding and construction of all necessary school facilities for the SPA so that Folsom residents north of U.S. 50 are not required to pay for the construction of new school facilities serving the SPA and existing schools are not overcrowded by development of the SPA.

- **Development Plan.** Adopt a General Plan Amendment to serve as the blueprint for development within the SPA. The General Plan Amendment will only be adopted after the completion and certification of an Environmental Impact Report.

- **Public Notice.** Every registered voter in the City must be mailed a notice of time, place, and date of the public meetings and hearings before the Planning Commission and City Council. The notice must include a

summary of the SPA proposal with the full proposal and associated environmental review available for public review at the City Clerk's office, at all Folsom public libraries, and on the City's website.

- **Implementation.** All existing City plans, policies, ordinances, and other legislative acts must be amended as necessary, as soon as possible, and in the time and manner required by State law, including CEQA, to ensure consistency between the Charter Amendment and those plans, policies, and other provisions.

Sacramento County Urban Service Boundary and Urban Policy Area

The *Sacramento County General Plan* (Sacramento County 1993) provides for growth and development in the unincorporated area through 2010. Portions of the Sacramento County General Plan contain policies for urban development including urban communities and the infrastructure necessary to serve them. Other sections of the Sacramento County General Plan describe strategies to recognize and preserve areas of open space and natural resources. As a whole, the general plan reflects a balance between the amount and location of land uses in urban areas and those to remain in a rural or natural setting.

The Sacramento County General Plan designates two boundaries that guide policies for growth. The Urban Service Boundary (USB) is the boundary of the urban area in the unincorporated portion of Sacramento County. It is a permanent boundary that will not be modified except under extraordinary circumstances and will be used as a planning tool for urban infrastructure providers for developing very long-range master plans that would accompany future urbanization. (Sacramento County 2009:3-11.)

The Urban Policy Area (UPA) defines the area expected to receive urban levels of public infrastructure and services within the 20-year planning period of the Sacramento County General Plan. The UPA provides the geographic basis for infrastructure master plans, particularly for public water and sewerage, which require large capital investment and relatively long lead time for the installation of capital improvements. (Sacramento County 2009:3-11.)

The SPA is adjacent to but outside of the north and west side of the USB and UPA. As shown in Exhibit 3A.10-3, the SPA and lands south and west of the SPA are within the unincorporated area of Sacramento County. These lands are designated by the Sacramento County General Plan as General Agriculture (80 acres), General Agriculture (80 acres)/Resource Conservation Area, Industrial Extensive, Natural Preserve, and Public/Quasi Public. Table 3A.10-2 shows these land use designations, identifies the compatible zoning districts, and defines allowable uses.

Lands north of the SPA are located outside of Sacramento County jurisdiction, within the City of Folsom, and are governed by the City of Folsom General Plan land use designations (see "City of Folsom General Plan," below).

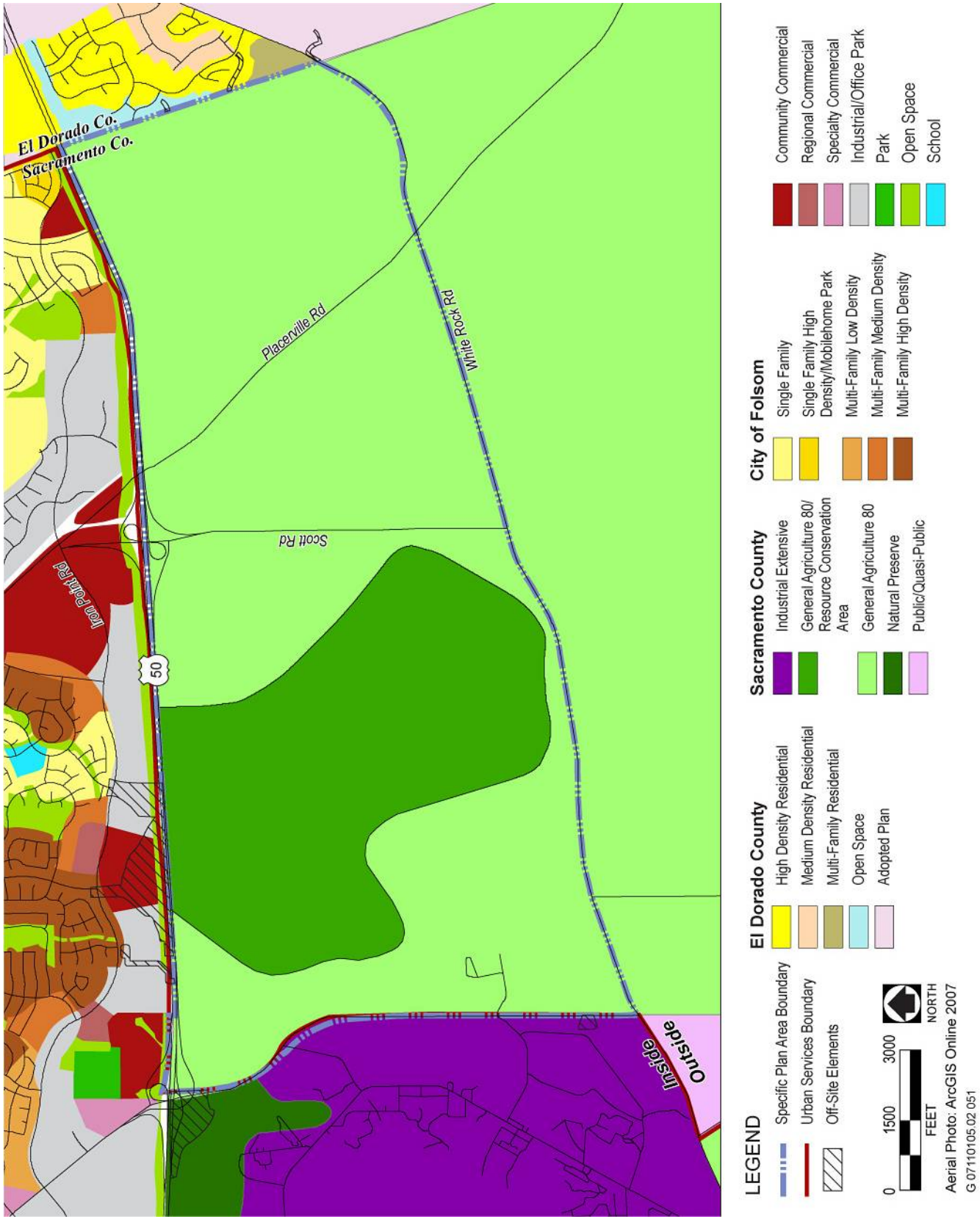
Lands east of the SPA are located outside of Sacramento County jurisdiction in the unincorporated area of El Dorado County and are governed by the El Dorado County General Plan land use designations (see "El Dorado County General Plan," below).

Sacramento County General Plan Goals and Policies

The following goals and policies outlined in the *Sacramento County General Plan* (1993) relating to land use planning are applicable to the No Project Alternative:

Land Use Element

GOAL: Land use patterns that minimize the impacts of new and existing development while maintaining the quality, character, and identity of neighborhood and community areas.



Source: Sacramento County 1993, El Dorado County 2004, City of Folsom 1988

General Plan Land Use Designations **Exhibit 3A.10-3**

Table 3A.10-2
Adopted Sacramento County, El Dorado County, and City of Folsom General Plan Land Use Designations

Land Use Designation	Compatible Zoning District	Definition
Sacramento County		
General Agriculture (80 acres)	AG-80 (Agricultural, 80-acre minimum lot size)	The General Agriculture (80 acres) land use designation identifies areas with an 80-acre minimum parcel size that are generally used for agricultural purposes. These areas have parcels large enough to maintain economically viable farming operations. Typical farming activities include dry land grain, and irrigated and dry land pasture. This land use designation allows only for agricultural production and single-family dwelling units at a density no greater than one unit per 80 acres.
Resource Conservation Area	AG-80 (Agricultural, 80-acre minimum lot size)	The Resource Conservation Area combining designation identifies areas with special resource management needs (i.e., vernal pools, wetland creation, waterfowl management, and blue oak woodland harvesting) while recognizing the validity of the underlying land use designation. The intent of this designation is to develop programs and incentives to assist land owners with resource protection and enhancement.
Industrial Extensive	SPA (Special Planning Area)	The Industrial Extensive land use designation identifies area where land use activities require large areas of land and do not require urban levels of service.
Natural Preserve	AG-80 (Agricultural, 80-acre minimum lot size) SPA (Special Planning Area)	The Natural Preserve land use designation identifies critical natural habitat for resource protection, including riparian valley oak woodland and permanent or seasonal marshes.
Public/Quasi-Public	A-10 (Interim Agricultural, 10-acre minimum lot size) AG-20 (Agricultural, 20-acre minimum lot size) AG-80 (Agricultural, 80-acre minimum lot size) SPA (Special Planning Area)	The Public/Quasi-Public land use designation establishes areas for uses such as schools, fire stations, cemeteries, and solid and liquid waste disposal. These areas are often significant size, under County jurisdiction, regional in scope, specified by state law, or have significant land use impacts.
El Dorado County		
Multi-Family Residential	RM (Multifamily Residential) RF (Recreational Facilities)	The Multi-Family Residential land use designation identifies those areas suitable for high-density, multifamily structures such as apartments, single family attached dwelling units (i.e., air-space condominiums, townhouses), and multiplexes, at density of 5 –24 dwelling units per acre (du/ac). Lands identified as Multi-Family Residential are located in areas with the highest degree of access to transportation facilities, shopping and services, employment, recreation, and other public facilities.

Table 3A.10-2
Adopted Sacramento County, El Dorado County, and City of Folsom General Plan Land Use Designations

Land Use Designation	Compatible Zoning District	Definition
High-Density Residential	R1 (One-Family Residential) RF (Recreational Facilities)	The High-Density Residential land use designation identifies those areas suitable for intensive single-family residential development at densities from 1–5 du/ac. Allowable residential structure types include single family attached (i.e., air-space condominiums, townhouses) and detached dwellings and manufactured homes.
Medium-Density Residential	R1A (One-Acre Residential) RF (Recreational Facilities)	The Medium-Density Residential land use designation establishes areas suitable for detached single-family residences with larger lot sizes with parcel sizes of 1–5 acres and a density of one du/ac. This designation is applied where the character of an area is single-family residences; where the absence or reduced level of infrastructure including roads, water lines, and sewer lines does not justify higher densities; where the topography poses a constraint to higher densities; and as a transitional land use between the more highly developed and the more rural areas of the County.
Open Space	OS (Open Space) RF (Recreational Facilities)	The Open Space land use designation designates public lands under governmental title where no development other than that specifically needed for government-related open space uses is desired. This land use includes state parks, ecological preserves, and public lands acquired specifically for open space uses. It may also be used on private lands to maintain natural features within clustered development.
City of Folsom		
Single Family	R-1-M (Residential, Single-Family Dwelling, Small Lot District)	The single family land use designation identifies those areas suitable for single family detached homes at low to medium densities with a density of two du/ac.
Single Family High Density/Mobile Home Park	R-1-M (Residential, Single-Family Dwelling, Small Lot District)	This land use designation identifies those areas suitable for single-family dwelling units with densities from 4–6.9 du/ac. Residential structure types include halfplexes, mobile home parks, and attached single-family homes.
Multi-Family Medium Density	R-M (Residential Multifamily Dwelling District)	The Multi-Family Medium Density land use designation identifies those areas suitable for medium-density multifamily developments with densities from 12–17.9 du/ac. These lands uses are generally located along arterial roads and public transportation routes, near commercial centers and public institutions, and as buffers between industrial and commercial areas and single-family neighborhoods.

Table 3A.10-2
Adopted Sacramento County, El Dorado County, and City of Folsom General Plan Land Use Designations

Land Use Designation	Compatible Zoning District	Definition
Multi-Family High Density	R-M (Residential Multifamily Dwelling District) R-4 (General Apartment District)	The Multi-Family High Density land use designation identifies those areas suitable for high-density multifamily developments with densities from 18–25 du/ac. These lands uses are generally located near commercial centers or regional commercial centers but may include parcels at the intersection of arterial roads, along transit routes, adjacent to public institutions, and as part of a commercial/industrial development compatible with residential uses.
Community Commercial	C-1 (Neighborhood Business District) C-2 (Central Business District)	The Community Commercial land use designation identifies those areas that provide goods and services for large neighborhood areas.
Regional Commercial	C-3 (General Commercial District)	The Regional Commercial land use designation identifies those areas that are primarily highway-oriented retail commercial areas and are designed mainly for customers from outside the city of Folsom but also including Folsom residents.
Specialty Commercial	C-3 (General Commercial District) BP (Business and Professional District)	The Specialty Commercial land use designation identifies those areas that mainly serve a purpose not fulfilled by the other commercial designations. Land uses within this designation include Sutter Street Historic District, specialty commercial districts, business/professional offices, and other identified areas as appropriate. Building intensity and employment density are determined on a case-by-case basis through a planned development process.
Industrial/Office Park	BP (Business and Professional District) M-1 (Light Industrial District) M-L (Limited Manufacturing District)	The Industrial/Office Park land use designation identifies those areas suitable for warehousing/storage facilities and industrial parks.
Park	OSC (Open Space Conservation District)	The Park land use designation identifies areas designated for parks.
Open Space	OSC (Open Space Conservation District)	The Open Space land use designation identifies areas designated for open space.
School	--	The School land use designation identifies areas designated for schools.

Source: Sacramento County 1993, El Dorado County 2004, City of Folsom 1988

Objective: Reserve the land supply to amounts that can be systematically provided with urban services and confine the ultimate urban area within limits established by natural resources.

- **Policy LU-57:** The County shall not provide urban services beyond the Urban Policy Area, except when the County determines the need for health and safety purposes.

- **Policy LU-58:** The County shall maintain an Urban Service Boundary that defines the long-range plans (beyond twenty years) for urbanization and extension of public infrastructure and services, and defines important areas for protecting as open space and agriculture.

GOAL: Policies and programs of County departments and other governmental agencies and jurisdictions mutually consistent with one another and with the policies contained in this plan.

Objective: Plan implementation achieved by coordination between the County and independent agencies, districts, and commissions.

- **Policy LU-71:** Annexations should only be advocated which:

    - ensure provisions and demonstrate maintenance for adequate municipal services;

    - are consistent with state law and LAFCo standards and criteria;

    - provide for equitable distribution, based on region-wide analysis, of social services and low income housing needs;

    - are consistent with General Plan and Community Plan policies; and

    - preserve community identity.

The following goals and policies outlined in the *Sacramento County General Plan* (1993) relating to land use planning are applicable to the No Project Alternative:

Objective: Limited agricultural-residential land use expansion outside the USB which does not compromise objectives for protecting prime agricultural lands and open space, and avoids groundwater overdraft and contamination.

- **Policy LU-62:** Future agricultural-residential development outside the USB…shall be limited to existing agricultural-residential lands so designated on the Land Use Diagram and new areas adjacent to existing areas with agricultural-residential land use designations.

Sacramento County General Plan Update

The existing horizon of the Sacramento County General Plan ends in 2010, and the process to update the General Plan was initiated in 2002. In June 2007, Sacramento County prepared a draft general plan and began conducting an environmental review of the General Plan update. A notice of preparation was prepared and circulated for public review in August 2007 (State Clearinghouse Number 2007082086). The draft environmental impact report (DEIR) for the general plan update was released on May 1, 2009, for a 45-day public review period. Adoption of the updated general plan is anticipated in mid 2010 (Sacramento County 2010).

The Sacramento County General Plan update will have a planning horizon of 2030, which is consistent with the planning horizons of SACOG's Sacramento Region Blueprint. The general plan update contains objectives and policies that are intended to guide Sacramento County toward a more compact urban character by concentrating

growth within existing urbanized areas and strategically located new growth areas, thereby using land resources as efficiently as possible (Sacramento County 2007a).

Sacramento County Zoning Code

The Sacramento County zoning code (Sacramento County 2007b) has been adopted to protect and promote the public health, safety, and general welfare of the community and to implement the Sacramento County General Plan goals, policies, and objectives and to guide the future growth of the County. The zoning code regulates the use of buildings, structures, and land for agricultural, industrial, businesses, residential, and open space land uses including agriculture, recreation, enjoyment of scenic beauty and use of natural resources, and other purposes.

As of December 2007, the Sacramento County Zoning Code provides for a total of 15 zoning districts: six base districts and nine "special and combining land use zones." The nine special combining land use zones are not used by themselves, but when they are used in combination with other zoning districts, they can provide specific additional uses and/or requirements.

As shown in Exhibit 3A.10-4, the SPA and lands south and west of the SPA are within the unincorporated area of Sacramento County and are currently governed by the Sacramento County Zoning Code. These lands are zoned as A-10 (Interim Agricultural, 10-acre minimum lot size), AG-20 (Agricultural, 20-acre minimum lot size), AG-80 (Agricultural, 80-acre minimum lot size), and SPA (Special Planning Area). Table 3A.10-3 shows these zoning districts, identifies the zoning code, and defines allowable uses.

Lands north of the SPA are located outside of Sacramento County jurisdiction, within the City of Folsom, and are governed by the City of Folsom zoning code (see "City of Folsom Zoning Code," below).

Lands east of the SPA are located outside of Sacramento County jurisdiction in the unincorporated area of El Dorado County and are governed by the El Dorado County zoning ordinance (see "El Dorado County Zoning Ordinance," below).

El Dorado County General Plan

The *El Dorado County General Plan* (2004) establishes a land use development pattern that makes the most efficient and feasible use of existing infrastructure and public services, provides guidelines for new and existing development that promotes a sense of community and that maintains or enhances the quality of the County, defines those characteristics which make the County rural and provides strategies for preserving these characteristics, and provides opportunities for positive economic growth.

As shown in Exhibit 3A.10-3, the lands east of the SPA are within the unincorporated area of El Dorado County and are governed by the El Dorado County General Plan. These lands are designated as High-Density Residential (HDR), Medium Density Residential (MDR), Multi-Family Residential (MFR), and Open Space (OS). Table 3A.10-2 shows these land use designations, identifies the compatible zoning districts, and defines allowable uses.

El Dorado County General Plan Goals and Policies

No goals and policies outlined in the El Dorado County General Plan (2004) relating to land use are applicable to the Proposed Project or alternatives under consideration.

El Dorado County Zoning Ordinance

The El Dorado County Zoning Ordinance (El Dorado County 2009) has been adopted to allow use of modern planning and development techniques, effect more efficient use of land, allow flexibility of development, provide for a combination of different land uses that complement each other but which may not in all aspects conform to

Table 3A.10-3
Adopted Sacramento County, El Dorado County, and City of Folsom Zoning Districts

Zoning District	Zoning Code	Allowable Uses
Sacramento County		
Interim Agriculture (10-acre minimum lot size)	A-10	The Interim Agriculture (10-acre minimum lot size) zoning district provides for agricultural uses while reserving these areas for possible future urban, recreational, or industrial uses.
Agricultural (20-acre minimum lot size)	AG-20	The Agricultural (20-acre minimum lot size) zoning district promotes long-term agricultural uses and discourages the premature and unnecessary conversion of agricultural land to urban uses. All agricultural uses and one single-family residence per parcel are permitted uses.
Agricultural (80-acre minimum lot size)	AG-80	The Agricultural (80-acre minimum lot size) zoning district promotes long-term agricultural uses and discourages the premature and unnecessary conversion of agricultural land to urban uses. All agricultural uses and one single-family residence per parcel are permitted uses.
Special Planning Area	SPA	The Special Planning Area combining zone identifies areas having existing architectural, environmental, social, or other characteristics that are intended to be maintained. New development in these areas should meet conditions that existing standards of the basic zone may not address.
El Dorado County		
One-Acre Residential	R1A	The One-Acre Residential zoning district allows for one-family detached dwelling units; guesthouses as an accessory use to an existing dwelling; accessory uses and structures including garages, swimming pools, and boathouses; excavation of earth and drilling of wells exclusively for residential purposes; and public parks, playgrounds, and golf courses.
One-Family Residential	R1	The One-Family Residential zoning district allows for one-family detached dwelling units, noncommercial accessory uses and buildings, excavation of earth and drilling of wells exclusively for residential purposes, public utilities distribution lines, and public parks.
Multifamily Residential	RM	The Multifamily Residential zoning district allows for one-family detached dwelling units, multifamily dwelling units, noncommercial accessory uses and buildings, excavation of earth and drilling of wells exclusively for residential purposes, public utilities distribution lines, and public parks.
Recreational Facilities	RF	The Recreational Facilities zoning district provides for the orderly development and maintenance of lands and areas suitable and desirable for recreational pursuits and to protect those areas from the encroachment of unrelated uses. This districts allows for picnic areas, ball fields and courts, public utilities structures or overhead lines, playgrounds, golf courses, swimming pools, non-motorized snow play areas, stables, riding and hiking trails, lakes and marinas for non-motorized craft, fishing, and hunting.
Open Space	OS	The Open Space zoning district identifies open space areas for protection of natural resources, preservation of agricultural production, preservation of recreational areas, and protection of prime or critical wildlife habitat. This district allows for single family detached dwelling units, agricultural accessory buildings, timber production and harvesting, and other agricultural crop production.

Table 3A.10-3
Adopted Sacramento County, El Dorado County, and City of Folsom Zoning Districts

Zoning District	Zoning Code	Allowable Uses
City of Folsom		
Residential Single Family, Small Lot District	R-1-M	The Residential Single Family, Small Lot District allows for single-family dwelling units, utility installations, public parks, schools, libraries, fire stations, and other public buildings.
Residential Multifamily Dwelling District	R-M	The Residential Multifamily Dwelling District allows for single-family zero lot line dwelling units, two-family dwelling units, multifamily dwelling units, utility installations, apartments, public parks, schools, libraries, fire stations, and other public buildings.
General Apartment District	R-4	The General Apartment District allows for two-family dwelling units, multifamily dwelling units, utility installations, apartments, public parks, schools, libraries, fire stations, and other public buildings.
Business and Professional District	BP	The Business and Professional District designates areas suitable for business and professional offices including low-intensity commercial uses and compatible with higher-intensity residential uses. This zoning district may serve as a buffer between retail commercial and residential uses and should be located along major arterial roadways.
Neighborhood Business District	C-1	The Neighborhood Business District provides for low-intensity retail commercial activities oriented to serve nearby residential areas.
Central Business District	C-2	The Central Business District provides for a wide range of commercial activities adjacent to major arterial roadways and thoroughfares. This zoning district includes all shopping centers.
General Commercial District	C-3	The General Commercial District provides for high-intensity commercial activities that may include heavy auto and truck traffic. This zoning district is located adjacent to major arterial roadways and thoroughfares and includes all shopping centers.
Light Industrial District	M-1	The Light Industrial District provides for high-intensity commercial activities that may include heavy auto and truck traffic. Permitted uses include wholesale and storage warehouses; feed and fuel yards; manufacturing, processing, fabricating, refining, repairing, and packaging facilities; and utility installations.
Limited Manufacturing District	M-L	The Limited Manufacturing District is designed to accommodate a limited group of business, professional, research, and technical manufacturing uses that have specific requirements for space, light, and air. Permitted uses include commercial and professional offices, research institutions, manufacturing facilities, and utility installations.
Open Space Conservation District	OSC	The Open Space Conservation District is intended to designate areas to be generally maintained as open space. Permitted uses include agricultural uses, cattle and dairy farms, public and private parks, golf courses, and floodplain areas. One single-family dwelling unit per 10 acres of land is permitted.

Source: Sacramento County 1993, El Dorado County 2004, City of Folsom 1988

the existing zoning regulations, and encourage a more efficient use of public and/or private services. As of March 2009, the El Dorado County Zoning Ordinance provides for 34 general land use zoning districts and 17 Lake Tahoe Basin zoning districts.

As shown in Exhibit 3A.10-4, lands east of the SPA are within the unincorporated area of El Dorado County and are governed by the El Dorado County zoning ordinance. These lands are zoned as R1A (One-Acre Residential), R1 (One-Family Residential), RM (Multifamily Residential), RF (Recreational Facilities), and OS (Open Space). Table 3A.10-3 shows these zoning districts, identifies the zoning code, and defines allowable uses.

City of Folsom General Plan

The *City of Folsom General Plan* (1993) provides for physical, economic, and environmental growth of the City. The City's General Plan is oriented toward the physical development of land uses, a circulation network, and supporting public facilities and services. As a whole, the general plan is intended to retain and enhance Folsom's quality of life, separate identity, and sense of community.

As shown in Exhibit 3A.10-3, lands north of the SPA are within the Folsom City limits and are governed by the City of Folsom General Plan. These lands are designated by the City of Folsom General Plan as Single Family (SF), Single-family High Density/Mobile Home Park (SFHD), Multi-family Low Density (MLD), Multi-family Medium Density (MMD), Multi-family High Density (MHD), Community Commercial (CC), Regional Commercial (RCC), Specialty Commercial (CA), Industrial/Office Park (IND), Park (P), Open Space (OS), and School (S). Table 3A.10-2 shows these land use designations, identifies the compatible zoning districts, and defines allowable uses.

City of Folsom General Plan Goals and Policies

The following goals and policies outlined in the *City of Folsom General Plan* (1993) Land Use Element relating to land use planning would be applicable to the Proposed Project and the four action alternatives. There are no goals or policies that would apply to the No Project Alternative.

GOAL 2: To ensure that the City exercise appropriate controls over the planning process.

- **Policy 2.3:** General Plan Amendments may be approved when the applicant has successfully indicated substantial benefit could be derived from the project.

    1. Requests for higher residential densities must include a demonstration of need for higher density housing.

    2. Requests for land use changes must include an evaluation of economic, social and environmental factors which would be enhanced by a change in the land use.

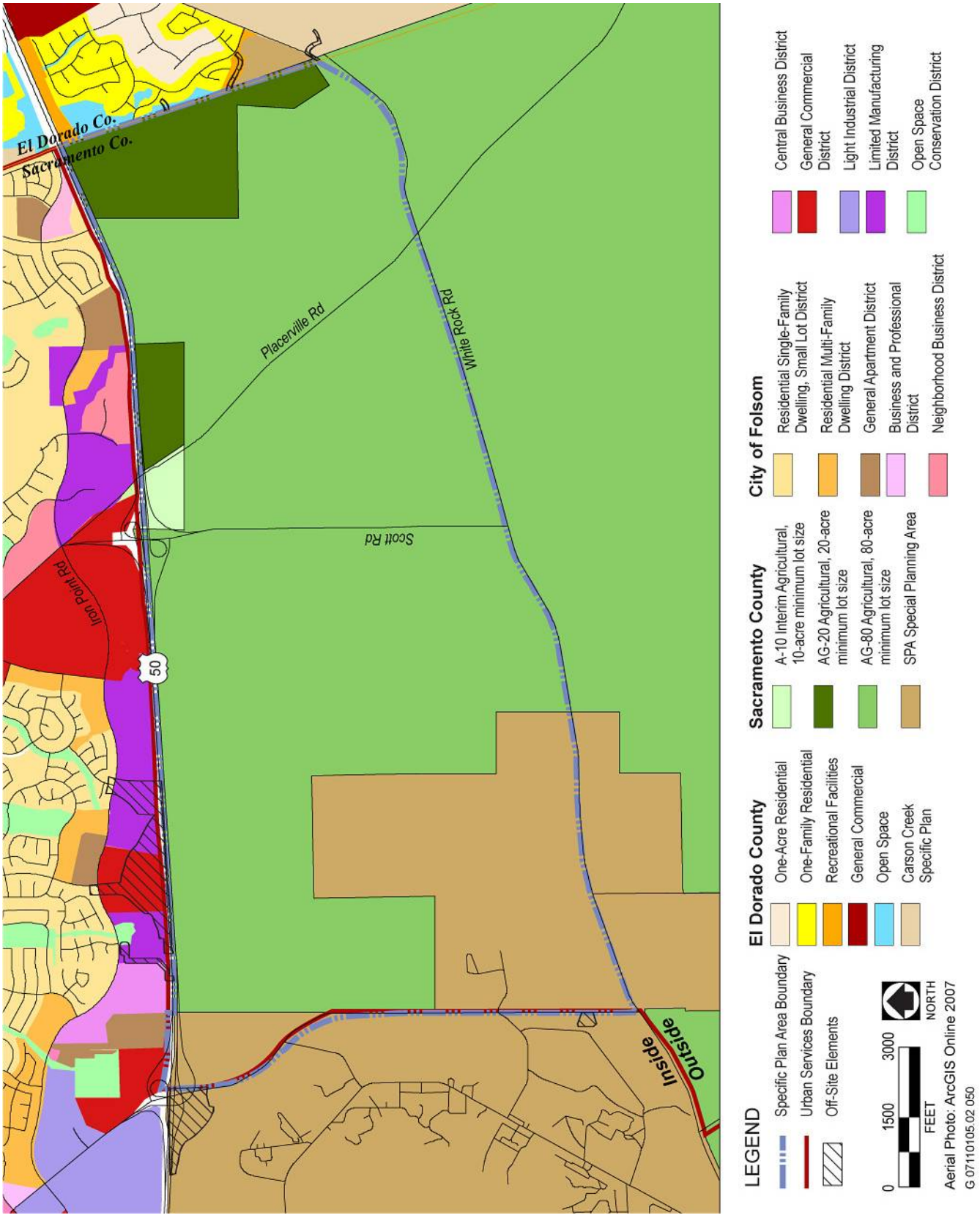
    3. Design features for open space, improved recreational facilities, protection of natural features and sensitive to surrounding development shall be carefully evaluated.

GOAL 3: To address comprehensively Folsom's development issues on the basis of community-wide needs.

- **Policy 3.3:** Development standards shall be prepared for large land holdings prior to approval of tentative maps or Planned Development permits. Development standards may consist of standards adopted by relationships among land uses within the area covered by the plan. Development standards may be included in specific plans, area plans, or be reference as a condition of approval.

GOAL 4: To provide opportunities for residents to live, work, shop, and enjoy leisure activities within the City.

Policy 4.2: The City will plan for a central community district and a regional shopping center.



Source: Sacramento County 1993, El Dorado County 2004, City of Folsom 1998

Zoning Map **Exhibit 3A.10-4**

- **Policy 4.3:** Neighborhood business areas will be allowed subject to size and business restrictions. The location of such business areas are based on area or community plans for the projects to be served by the neighborhood business area. Neighborhood business should be pedestrian-oriented, that is, their customers are primarily from the residents in the immediate vicinity of the business.

GOAL 7: To provide for the orderly annexation and development of unincorporated areas within Folsom's Sphere of Influence.

- **Policy 7.1:** The City shall only annex those lands which can be developed in accordance with the City's General Plan, fiscally sound additions to the City, can be adequately served by municipal (or acceptable alternative) facilities and services and are part of a planned, orderly annexation program.

- **Policy 7.2:** All properties proposed for annexation shall be pre-zoned by the City in a manner consistent with the General Plan. Until facilities and services can be provided, such properties will be designated as agricultural reserve. The existing County zoning or General Plan designation which applies to a property may be considered in determining the appropriate pre-zoning of the subject land which is served by on-site facilities or connected to County facilities.

- **Policy 7.3:** Prior to the annexation of lands to the City, the applicant shall submit a plan demonstrating the financial feasibility of providing services and facilities to the area proposed for annexation.

- **Policy 7.4:** The General Plan and zoning designations for annexed lands should consider the following criteria:

    - The capacity of facilities and municipal services.

    - The environmental effects that development on lands proposed for annexation may have on properties within the existing city limits.

    - Existing land uses, if any, on and in the vicinity of the annexed land.

    - The extent of any natural habitats and features of the landscape which should be preserved.

    - The demonstrated need for additional housing, retail commercial uses, other commercial uses, and industrial uses.

GOAL 8: To allow a variety of housing types which provides living choices for Folsom residents.

- **Policy 8.9:** All multiple family projects will be required to obtain a planned development permit in accordance with the City's Zoning Code. Similar development approvals, such as Specific Plans that cover the same requirements as the planned development permit shall be considered a substitute.

- **Policy 8.10:** Residential densities within an area plan or specific plan may vary, provided 1) that the dwelling unit buildout within the plan shall not exceed the authorized by the Land Use Element of the General Plan and 2) in no instance shall densities within any portion of the plan area exceed 25 dwelling units per acre. An area plan or specific plan is defined as a large development area typically over 100 acres with an overall master development plan.

GOAL 10: To provide for a commercial and industrial base of the City to encourage:

1. A strong tax base.
2. More jobs within the City.
3. A greater variety of commercial goods and services.

4. A regional shopping center.
5. Businesses and industrial compatible with Folsom's quality of life.

- **Policy 10.1:** The City shall have a variety of commercial uses such as:

    1. ….

    2. Individual businesses outside of a commercial area, serving a commercial or industrial project or providing highway-oriented services.

    3. Small commercial centers serving individual neighborhoods.

    4. A central business district with offices and retail establishments serving the entire community.

    5. A regional retail center serving Folsom residents and others from outside the community.

    6. ….

    7. Specialty commercial areas.

GOAL 11: A plan for a central commercial district that includes retail, office, and service establishments, and cultural and entertainment facilities.

- **Policy 11.2:** The purpose of the central commercial district shall be to provide a location for businesses, to provide a focus for entertainment activities, and to provide a City financial center.

GOAL 12: To plan for regional commercial centers.

- **Policy 12.1:** Regional commercial centers shall be primary highway-oriented retail commercial areas. The purpose of the centers shall be to provide locations for businesses whose customers come primarily from outside the City of Folsom, although businesses may also provide goods and services to Folsom residents.

- **Policy 12.2:** Regional centers should be located close and accessible to Highway 50, preferably near an interchange.

- **Policy 12.5:** Highway-commercial areas shall be designated adjacent to U.S. 50 in order to support the travelling public at major interchanges.

GOAL 13: To plan for small neighborhood-oriented convenience commercial areas which provide goods and services that may meet the daily needs of nearby residents.

- **Policy 13.1:** Neighborhood convenience commercial areas should be located so the residents in each neighborhood may meet their daily needs for commercial goods and services.

- **Policy 13.2:** Neighborhood commercial areas shall in general be limited to five acres or less.

- **Policy 13.6:** Neighborhood commercial centers shall be developed under the Planned Development Process.

GOAL 15: Plan for community commercial areas providing goods and services for large neighborhood areas.

- **Policy 15.1:** Community commercial centers shall in general range in size from five to ten acres.

- **Policy 15.4:** Community commercial centers should be developed adjacent to higher density residential, offices, and public uses.

- **Policy 15.5:** Community commercial centers shall be developed under the Planned Development Process.

City of Folsom Zoning Code

The City of Folsom zoning code (City of Folsom 2006, as amended) has been adopted to protect and promote the public health, safety, peace, morals, comfort, convenience, and general welfare of the community and to implement the City of Folsom General Plan goals, policies, and objectives and to guide the future growth of the City. The zoning code assists in providing a comprehensive plan for orderly development of the City through site-specific development and land use regulations that govern the placement, size, shape of structures, and type of uses.

As of October 2006, the City of Folsom Zoning Code provides for a total of 25 zoning districts: 20 base districts and five "combining districts." The five special combining land use zones are not used by themselves, but when they are used in combination with other zoning districts, they can provide specific additional uses and/or requirements.

Exhibit 3A.10-4, lands north of the SPA are within the Folsom City limits and are governed by the City of Folsom zoning code. These lands are zoned as R-1-M (Residential Single-Family Dwelling, Small Lot District), R-M (Residential Multi-Family Dwelling District), R-4 (General Apartment District), BP (Business and Professional District), C-1 (Neighborhood Business District), C-2 (Central Business District), C-3 (General Commercial), M-1 (Light Industrial District), M-L (Limited Manufacturing District), and OSC (Open Space and Conservation District). Table 3A.10-3 shows these zoning districts, identifies the zoning code, and defines allowable uses.

3A.10.3 Environmental Consequences and Mitigation Measures

Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. These thresholds also encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. The Proposed Project or alternatives under consideration would result in a significant impact related to land use planning if they would do any of the following:

- physically divide an established community;

- conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect;

- conflict with any applicable habitat conservation plan or natural community conservation plan;

- convert Important Farmland (i.e., Prime Farmland, Unique Farmland, or Farmland of Statewide Importance) as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use;

- conflict with existing zoning for agricultural use or a Williamson Act contract; or

- involve other changes in the existing environment which, due to their location or nature, could result in conversion of Important Farmland to nonagricultural use.

Impacts associated with potential conflicts with the South Sacramento County Habitat Conservation Plan are addressed in Section 3A.3, "Biological Resources - Land."

ANALYSIS METHODOLOGY

Evaluation of potential land use impacts of the Proposed Project and the four action alternatives and the off-site U.S. 50 interchange improvements, detention basin, and sewer force main in Sacramento County was based on a review of planning documents pertaining to the SPA and vicinity, including: the *Sacramento County General Plan* (1993) and zoning ordinance, the Sacramento County General Plan Update DEIR (2009), the *City of Folsom General Plan* (1988) and zoning code, and the SACOG Region Blueprint. The land use impacts of the two roadway connections from the Folsom Heights property into El Dorado Hills under the Proposed Project Alternative were based on a review of the *El Dorado County General Plan* (2004) and zoning ordinance. The land use impacts under the No Project Alternative were based on the *Sacramento County General Plan* (1993) and zoning ordinance, and the Sacramento County General Plan Update DEIR (2009). Additional background information on land uses were obtained through field review and consultation with appropriate agencies. In addition, the DOC Important Farmland maps for Sacramento and El Dorado Counties and the DOC map of Williamson Act contracts in Sacramento County were used to determine the agricultural significance of the lands in the SPA and in the off-site improvement areas.

The off-site elements include construction of the Prairie City Road and Oak Avenue interchange improvements, the Rowberry Drive Overcrossing, a sewer force main, and a detention basin west of Prairie City Road. Approval of the project would allow acquisition of right-of-way and construction of these improvements. Therefore, these elements would not be inconsistent with existing Sacramento County or City of Folsom land use designations or zoning or conflict with other land use plans, policies, regulations, and ordinances.

ISSUES NOT ADDRESSED FURTHER IN THIS EIR/EIS

- **Physically divide an established community**—The SPA consists of livestock grazing lands, and there is only one existing single-family residence and associated agricultural outbuildings located on the western side of the SPA. Therefore, project implementation would not physically divide an established community and this issue is not evaluated further in this EIR/EIS

- **Conversion of Important Farmland to nonagricultural uses**—The Sacramento County Important Farmland map designates the SPA and off-site U.S. 50 interchange improvements, the sewer force main, and the detention basin as Grazing Land and Urban and Built-Up Land. The two roadway extensions from the Folsom Heights property into El Dorado Hills are designated by the El Dorado County Important Farmland Map as Grazing Land and Urban and Built-Up Land. These farmland designations are not considered Important Farmland under CEQA (California Public Resources Code Sections 21060.1 and 21095 and State CEQA Guidelines Appendix G). Thus, there would be no impact related to the conversion of Important Farmland or changes which result in the conversion of Important Farmland, and this issue is not evaluated further in this EIR/EIS.

Potential conflicts with any applicable habitat conservation plan or natural community conservation plan are evaluated in Section 3A.3, "Biological Resources - Land," of this EIR/EIS.

IMPACT ANALYSIS

Introduction to the Analysis

The Folsom South of U.S. 50 Specific Plan Project includes two off-site roadways that would extend from the Folsom Heights property and connect to the Stonebriar subdivision in El Dorado Hills. The northern roadway segment would connect directly into an existing cul-de-sac at the terminus of Winterfield Drive on the eastern boundary of the SPA. The southern roadway connection would cross undeveloped open land to connect with

Prima Drive. This undeveloped land is designated by the El Dorado County General Plan as High-Density Residential and is zoned One-Family Residential (R1) and Recreational Facilities (RF) by the El Dorado County Zoning Ordinance (Exhibits 3A.10-2 and 3A.10-3). The two roadway connections were identified as future roadway improvements in the DEIR prepared for the Joerger Ranch project (Michael Brandman Associates 1992). As identified in that DEIR, the Joerger Ranch project included potential secondary access roads in the western portion of the SPA (page 4-88 and Exhibit 4.8-3), and noted that additional CEQA review would be required after the roadway alignments were identified. Because the Folsom South of U.S. 50 Specific Plan Project would require construction of these roadway connections, this EIR/EIS provides an analysis of the physical impacts from construction those roadway connections. Approval of the Folsom South of U.S. 50 Specific Plan Project would allow acquisition of right-of-way and construction of the two roadway connections. These connections are identified in existing plans and would not be inconsistent with existing El Dorado County land use designations or zoning.

The land use planning and zoning authority of local jurisdictions in California is set forth in the state's planning laws. Currently, both Sacramento County and the City of Folsom have planning jurisdiction over the SPA, though the City would have no direct land use authority over the area unless and until annexation to the City is approved by the Sacramento LAFCo. Because the SPA is located within the unincorporated area of Sacramento County and outside the legal boundaries of Folsom, Sacramento County maintains the authority to designate allowable land uses and approve development on the site. Following LAFCo's approval of the annexation, Sacramento County would relinquish land use planning authority to the City, and the Sacramento County General Plan would no longer apply to the annexed areas. Nonetheless, the project may be appropriately compared to the Sacramento County General Plan to determine the consistency of the project with existing land use designations because the City does not have the current land use control. It should be noted that any inconsistency of the project with Sacramento County or Folsom land use designations and zoning code is an issue related to land use regulation and not a physical environmental consequence of the project, and therefore would not be considered a significant impact under CEQA. Specific impacts associated with other resource and issue areas are addressed in each technical "A" or "Land" Sections of this EIR/EIS as appropriate. These technical sections provide a detailed analysis of other relevant environmental effects resulting from implementation of the project.

The project would be inconsistent with the overall intent of the Sacramento County General Plan's land use designations. The SPA is designated by the Sacramento County General Plan as General Agriculture (80 acres) and General Agriculture (80 acres)/Resource Conservation Area (Exhibit 3A.10-3). The General Agriculture (80 acres) land use designation identifies areas that are intended to be used for agricultural purposes and have parcels large enough to maintain economically viable farming operations. This land use designation allows only agricultural production and single-family dwelling units at a density no greater than one unit per 80 acres. The Resource Conservation Area combining designation identifies areas with special resource management needs while recognizing the validity of the underlying land use designation. Pursuant to California Government Code Section 65454, a specific plan must be consistent with the local government's general plan. Development of the project would require approval of a general plan amendment by the City of Folsom, and the general plan amendments would be approved concurrently with adoption of the specific plan. The specific plan includes goals, objectives, policies, and implementation measures that would make the specific plan and general plan consistent with one another. Implementation of the specific plan would be administered by the City of Folsom in concert with the City's General Plan and other implementing documents. Exhibit 2-3 in Chapter 2, "Alternatives," shows the proposed general plan land use designations, and Table 3A.10-4 summarizes definitions and permitted uses within the land use designations.

According to the Sacramento County Zoning Map, the SPA is zoned as AG-80 (Agricultural, 80-acre minimum lot size), AG-20 (Agricultural, 20-acre minimum lot size), A-10 (Interim Agricultural, 10-acre minimum lot size), and SPA (Special Planning Area) (Exhibit 3A.10-4). These agricultural zoning districts promote long-term agricultural uses and discourage the premature and unnecessary conversion of agricultural land to urban uses and are compatible with the General Agriculture (80 acres) and General Agriculture (80-acres)/Resource Conservation Area land use designations. The SPA (Special Planning Area) combining zone identifies areas having existing

Table 3A.10-4
Folsom South of U.S. 50 Specific Plan Proposed Land Use and Zoning Districts

Proposed Land Use Designation	Proposed Zoning District	Specific Plan Definition	Proposed Project Uses
Single Family	SP-SF	Densities of 1– 4 du/ac. The single-family residential land use designation would provide for individually owned, single family detached homes that may be creatively sited due to slopes and other natural features. Most areas with this land use designation are adjacent to open space areas and act as a transition from undeveloped areas to residential development. Additional neighborhood and community serving amenities, such as parks, libraries, community clubhouses, and emergency services facilities, are also permitted.	Single family detached residential development including larger executive-style housing, large-lot residential estates, and conventional single-family neighborhoods.
Single-Family High Density	SP-SFHD	Densities of 4–7 du/ac. The Single-Family High Density residential land use designation would provide for single-family residential development that promotes walkability. Areas with this land use designation are generally on level terrain and are located in some instances as a transition between larger lot residential neighborhoods and higher-density multifamily residential sites. Additional neighborhood and community serving amenities, such as parks, libraries, community clubhouses, and emergency services facilities, are also permitted.	Single-family residential development including detached, attached, clustered, zero lot line, and attached two-residences. The single-family unit may include one secondary residential rental unit per lot.
Multi-Family Low Density	SP-MLD	Densities of 7–12 du/ac. The Multi-Family Low Density residential land use designation would encourage a variety of housing types. High-density residential uses would be located in small residential pockets and near planned mixed-use centers. Additional neighborhood and community serving amenities, such as parks, libraries, community clubhouses, and emergency services facilities, are also permitted.	Multifamily residential development including small-lot single-family residential units, such as single family patio homes, single family zero lot line courtyard residential units, and attached residential units, attached or detached row homes and townhomes.
Multi-Family Medium Density	SP-MMD	Densities of 12–20 du/ac. The Multi-Family Medium Density residential land use designation would provide for detached single-family units, attached single-family units, and multifamily residential units in close proximity to commercial centers and community amenities. Areas with this land use designation are generally in the town center and in proximity to mixed-use and larger commercial areas. Additional neighborhood and community serving amenities, such as parks, libraries, community clubhouses, and emergency services facilities, are also permitted.	Residential development with maximum flexibility including detached single-family units, attached single-family units, and multifamily units.

Table 3A.10-4
Folsom South of U.S. 50 Specific Plan Proposed Land Use and Zoning Districts

Proposed Land Use Designation	Proposed Zoning District	Specific Plan Definition	Proposed Project Uses
Multi-Family High Density	SP--MHD	Densities of 20–30 du/ac. The Multi-Family High Density residential land use designation would provide for multifamily residential units in close proximity to commercial centers and major roadways. Additional neighborhood and community serving amenities, such as parks and assisted living facilities, are also permitted.	Multifamily residential development including apartment buildings, condominiums, fourplexes, row homes, and townhomes.
Mixed-Use	SP-MU	Densities of 9–30 du/ac. The Mixed Use land use designation would encourage the development of residential, commercial, office, and civic uses. This land use designation covers two distinct mixed-use types of areas: the Town Center and the smaller neighborhood centers. Town Center parcels would be developed in a traditional vertical mixed-use format with street level uses containing retail and service-based uses. Neighborhood centers may develop as vertical or horizontal mixed-uses with commercial and service-based uses that are designed to serve the local community. Residential elements within the neighborhood centers may include separate, higher density residential buildings, either in a vertical format or in a horizontal alignment.	Residential development including apartments, row homes, townhomes, condominiums, apartments, and live/work studios. Vertical mixed-use development with ground floor commercial uses with offices and/or residential above, and horizontal mixed-use consisting of a mixture of single use buildings (i.e., buildings dedicated solely to residential, office, or retail uses) on a single site or block. Additional uses include specialty retail shops, cafes, restaurants, and entertainment venues; neighborhood-serving commercial uses; civic uses; and higher density housing.
Industrial/Office Park	SP-IND/OP	0.30–0.40 floor-area-ratio (FAR). The Industrial/Office Park land use designation would provide potential new areas for employment opportunities in Folsom. Land uses within this designation are intended to be lower intensity and appropriately sited and designed to be compatible with the adjacent oak woodlands, topography, and adjacent land uses.	Business, professional, and administrative office uses; medical offices; light industrial uses; and research and development facilities.
Community Commercial	SP-CC	0.25–0.30 FAR. The Community Commercial land use designation would provide a variety of community-based retail and service uses within walking distance of residential neighborhoods.	Grocery stores, retail shops, restaurants, and professional offices.
General Commercial	SP-GC	0.25–0.30 FAR. The General Commercial land use designation would provide a wide range of commercial, retail, and service uses in proximity to major thoroughfares that may be of a larger scale and highway-oriented.	Retail, office, and personal services and civic amenities including fire stations, police substations, and common open space areas.

Table 3A.10-4
Folsom South of U.S. 50 Specific Plan Proposed Land Use and Zoning Districts

Proposed Land Use Designation	Proposed Zoning District	Specific Plan Definition	Proposed Project Uses
Regional Commercial	SP-RC	0.25–0.30 FAR. The Regional Commercial land use designation would provide large-scale retail, entertainment, and service uses. This designation is situated along U.S. 50 and Scott Road and would be located adjacent to and just north of the Town Center. This adjacency is intended to promote a relationship between this regional-scale commercial and the walkable character of the Town Center.	Regional retail uses; stand-alone retail uses; restaurants; service uses; large indoor entertainment venues, including movie theatres; and civic amenities, including fire stations, police substations, and common open space areas.
Entertainment District	Entertainment District Overlay	The Entertainment District would be located north of Easton Valley Parkway and west of Scott Road adjacent to the regional commercial center and near the Town Center. This adjacency is intended to creating a strong relationship between the district, Town Center, and regional commercial center.	Entertainment, dining, retail, personal services that creates a blend of local, regional, and national merchandisers.
Parks	SP-P	The Parks land use designation provides for active and passive recreational opportunities.	Community parks, neighborhood parks, and local parks.
Open Space	SP-OS	The Open Space land use designation would recognize the natural open space areas with habitat and scenic value. These areas include oak woodlands, riparian corridors, and landscape parkways. Land uses within this land use designation would ensure the preservation and enhancement of the natural open space habitat and features.	Passive outdoor recreational activities, including walking, hiking, horseback riding, and bicycling; ancillary facilities such as public restroom facilities and outdoor interpretive/educational facilities; maintenance and repair of ditches and other stormwater management facilities; and construction, maintenance, and repair of facilities necessary to protect the integrity of wetlands or riparian corridors.
Public/Quasi-Public	SP-P-QP	The Public/Quasi-Public land use designation would encompass a variety of uses that are both desired and required within a comprehensive community setting.	Educational facilities; governmental facilities; public safety facilities such as fire stations and police substations; public utility facilities; and cultural, recreational, and religious facilities.

Source: Data compiled by AECOM in 2009

architectural, environmental, social, or other characteristics that are intended to be maintained. The land on the SPA that is owned by Aerojet General Corporation, which includes Area 40, is zoned as SPA (Special Planning Area).

The SPA is to be zoned by the city as an Overlay Specific Plan Combining District (SP-). This overlay district allows for zoning designations to be created that are unique to and only applicable to the SPA. The zoning districts for the project establish the desired zoning requirements of the SPA. While generally consistent, some elements of the proposed zoning would differ from that of the Folsom Zoning Code to reflect the SPA's unique nature. On adoption of the specific plan, the property would be prezoned consistent with Government Code Section 56375 and the Folsom General Plan. Exhibit 2-3 in Chapter 2, "Alternatives," shows the proposed land use designations, and Exhibit 2-4 shows the proposed zoning for the SPA. Table 3A.10-4 summarizes definitions and permitted uses within each zoning district.

Impacts that would occur under each alternative development scenario are identified as follows: NP (No Project), NCP (No USACE Permit), PP (Proposed Project), RIM (Resource Impact Minimization), CD (Centralized Development), and RHD (Reduced Hillside Development). The impacts for each alternative are compared relative to the PP at the end of each impact conclusion (i.e., similar, greater, lesser).

IMPACT 3A.10-1 Consistency with Sacramento LAFCo Guidelines. *Annexation of the SPA into the City of Folsom would require approval by Sacramento LAFCo.*

On-Site Elements

NP

Under the No Project Alternative, the SPA would not be annexed into the city, and no off-site water facilities would be constructed. The No Project Alternative would not result in actions that would require approval by Sacramento LAFCo, such as changes in government organization, annexation to a local agency, or reorganization of a service provider's boundaries. Therefore, the No Project Alternative would have **no direct** or **indirect** impacts related to consistency with Sacramento LAFCo guidelines. No inconsistency with Sacramento LAFCo guidelines would result under the No Project Alternative. ***[Lesser]***

NCP, PP, RIM, CD, RHD

LAFCo is charged with applying the policies and provisions of the Cortese-Knox-Hertzberg Local Government Reorganization Act (California Government Code Section 56000 et seq.) to its decisions regarding annexations, incorporations, reorganizations, and other changes in government organization. This act establishes the process through which a local agency boundary change is made and associated planning authority is transferred from one local agency to another. Generally, LAFCo is responsible for determining whether an annexation is consistent with the LAFCo objectives and policies of ensuring that services would be available to new development within proposed annexation areas; avoiding premature conversion of farmland; and ensuring planned, logical, and orderly patterns of urban growth.

For the project, the Sacramento LAFCo oversees the establishment or revision of boundaries for county, cities, and special districts. In June 2001, the Sacramento LAFCo approved the City's sphere of influence amendment application (Resolution No. LAFC 1196), and the City's sphere of influence was expanded to include the SPA. As part of the amendment approval, LAFCo identified conditions to ensure future annexation of the SPA would include adequate services for new development within proposed annexation areas; avoid premature conversion of agricultural resources; preserve open space; and encourage planned, logical, and orderly patterns of urban growth. Sacramento LAFCo would need to conduct proceedings to consider if the project meets LAFCo guidelines and the conditions identified in Resolution No. LAFC 1196 for annexation of the SPA (see "Sacramento Local

Agency Formation Commission," above). The following discussion summarizes the project's consistency with LAFCo Resolution No. LAFC 1196 for annexation of the SPA into the Folsom City limits.

As part of LAFCo Resolution No. LAFC 1196, the project must demonstrate compliance with the MOU between the City of Folsom and Sacramento County. The MOU outlines a comprehensive planning process for the SPA, including public participation with various stakeholders and the general public. It also addresses a number of issues including water supply, transportation, schools, and open space that were later incorporated into language found in Measure W and subsequently in the City Charter.

As required by LAFCo, the Proposed Project and the four action alternatives would maintain at least 30% of the SPA as natural open space to preserve oak woodlands and sensitive habitat areas. (See Exhibits 2-3, 2-10, 2-12, 2-14, and 2-16 in Chapter 2, "Alternatives.") Further, the Proposed Project and the four action alternatives would not result in the conversion of Important Farmland to nonagricultural uses, because the site does not contain Important Farmland.

The Proposed Project and the four action alternatives would include improvements to regional and local roadways including U.S. 50, Easton Valley Parkway, Prairie City Road, Empire Ranch Road, White Rock Road, Rowberry Drive, and Oak Avenue. Public transit routes and a network of bike trails would also be included under all five action alternatives. (See Section 3A.15, "Traffic and Transportation - Land.")

The City has identified a water supply and wastewater conveyance and treatment facilities to service the Proposed Project and the four action alternatives. Long-term water supplies would be provided by the Natomas Central Mutual Water Company through an existing Central Valley Project contract entitlement (see Chapter 2, "Alternatives" for a detailed discussion of proposed water supply). Wastewater collection, conveyance, and treatment would be provided by Sacramento Regional County Sanitation District and El Dorado Irrigation District. Mitigation measures in Section 3A.18, "Water Supply - Land," [from RMC] and Section 3A.16, "Utilities and Service Systems - Land," would ensure adequate water supplies and wastewater conveyance and treatment would be available before implementation of the Proposed Project or any of the action alternatives and these services would take place exclusively to serve development at the SPA. Therefore, adequate municipal services would be available.

The City of Folsom Fire Department, City of Folsom Police Department, and Folsom Cordova Unified School District would provide fire, police, and school service and facilities and equipment, respectively. The Proposed Project and the action alternatives would result in construction of sufficient fire, police, and school facilities and provide adequate equipment to ensure that adequate levels of service are provided. In addition, the project applicant(s) would pay state-mandated school impact fees to the Folsom Cordova Unified School District. (See Section 3A.14, "Public Services - Land.")

As part of project implementation, an Infrastructure Funding and Phasing Plan for the construction of roadways and transportation improvements and a Public Facilities Financing Plan to define the specific mechanisms required to fund capital costs of all municipal infrastructure would be adopted. Existing Folsom residents would not be required to pay fees for the construction of any new transportation improvements or municipal and public services required to serve the SPA.

The City of Folsom would annex the SPA into its territory, and adopt a General Plan Amendment defining the compatible land uses for the SPA as listed in Table 3A.10-4 above. Approval of a general plan amendment would ensure that development of the proposed land uses identified by the specific plan would be consistent with the City's General Plan. An analysis of environmental impacts associated with the required General Plan Amendment follows in Section 3A.10.4, below.

Development at the SPA would be logical extension of existing and planned urban development in the City. The northern boundary of the site is contiguous to existing urban development within the City limit boundary and the SPA is within the City's sphere of influence and has been identified in the City General Plan as an area planned

for urban development. The SPA is also designated as an area targeted for new urban growth in the Sacramento Region Blueprint (see Impact 3A.10-2 below). Other nearby planned or approved developments, including the Westborough at Easton Specific Plan to the west; the Promontory, El Dorado Hills and Bass Lake Specific Plans to the northeast; the Valley View Specific Plan to the east; and the Carson Creek Specific Plan to the southeast, have converted or have been approved to convert predominantly agricultural and open space areas to urban uses.

Implementation of the Proposed Project and action alternatives under consideration would meet the requirements of the Cortese-Knox-Hertzberg Act and the Sacramento LAFCo Guidelines identified in Resolution No. LAFC 1196 for annexation of the SPA. Because the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives would result in a logical extension of existing urban areas of the City and because regional and local roadway improvements and adequate utilities and public services and revenues to achieve service standards would be provided, this **direct** impact is considered **less than significant**. **No indirect** impacts would occur. (Refer to the other "Land" sections in Chapter 3 of this EIR/EIS for analysis of physical impacts on the environment associated with these services.) The development proposed under the Proposed Project and action alternatives under consideration would be **consistent** with Sacramento LAFCo guidelines. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

Off-Site Elements

Construction of the off-site freeway interchange improvements, the sewer force main, the detention basin west of Prairie City Road, and the two roadway connections from the Folsom Heights property into El Dorado Hills would not result in actions that would require approval by Sacramento LAFCo, such as changes in government organization, annexation to a local agency, or reorganization of a service provider's boundaries. Therefore, implementing these elements would have **no direct** or **indirect** impacts. No inconsistency with Sacramento LAFCo guidelines would result under the Proposed Project and action alternatives under consideration. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.10-2 Consistency with the SACOG Sacramento Region Blueprint. *Project implementation could conflict with the SACOG Sacramento Region Preferred Blueprint Scenario.*

On-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural land use and zoning classification AG-80. No off-site water facilities would be constructed. The SACOG Blueprint envisions the SPA for development with urban uses.

Based on SACOG Blueprint principles, the No Project Alternative could potentially result in future conversion of agricultural land and less protection of natural resources over the long term in the greater Sacramento region because more land would be required for expansion of the overall regional urban areas. Such new development, like the project, would be required to comply with the policies of the local jurisdictions. In addition, impacts of these projects would undergo separate environmental review to identify potential impacts and mitigation measures. In summary, because dense urban development would not occur under the No Project Alternative, this alternative would be **inconsistent** with the SACOG Preferred Blueprint Scenario. ***[Greater]***

The Sacramento Region Blueprint is advisory and therefore does not establish land use restrictions on any jurisdiction. SACOG has no land use authority. SACOG makes clear that the land use designations presented on the Blueprint Preferred Scenario are conceptual and reflect general land use locations in a local area. Although it is only advisory, the Blueprint provides policy guidance in the Sacramento region for long-term regional land use and transportation planning that would potentially result in the protection of additional natural resources (because less land would be required for urban uses), less conversion of agricultural land, and reduction in traffic that would improve air quality in the region. Although the Blueprint is only advisory, the City encourages the types and intensity of land uses shown in the Preferred Blueprint Scenario.

Under smart growth principles, areas that are planned for development are developed at higher densities. Although these higher densities may result in greater on-site impacts on biological, cultural, open space, and agricultural resources, the overall area of disturbance within the region is reduced in the long term as development is concentrated in particular locations. Sacramento County has experienced demographic pressure which has reflected an increasing statewide population and intrastate migration from the San Francisco Bay Area, and the City of Folsom is interested in furthering its goals and objectives of providing a mix of housing and new jobs to its residents. Smart growth principles therefore suggest that developing the site with a higher density use while avoiding wetland areas and other environmental resources would focus market demand for development into an area near existing development, infrastructure, and services.

The types of land uses under the No USACE Permit Alternative would be the same as those under the Proposed Project Alternative. However, the project components would be reconfigured under the No USACE Permit Alternative to avoid the placement of dredged or fill material into waters of the U.S., including wetlands. This alternative would provide the greatest area of open space and avoid many of the impacts to high-quality biological habitat and cultural resources (see Exhibit 2-16 in Chapter 2, “Alternatives”).

The number of jobs generated by No USACE Permit Alternative would exceed the job projections identified in the Blueprint for the SPA. This alternative accommodates approximately 11,171 jobs, which is 3,671 more jobs than anticipated in the Blueprint. However, this alternative would generate 2,039 less than the Proposed Project Alternative.

The No USACE Permit Alternative would provide residential development on a similar footprint compared to the Proposed Project Alternative; however, the additional natural resources protection would result in fewer dwelling units. The No USACE Permit Alternative would construct 6,373, which is 6,127 less than identified in the Blueprint for the SPA, and would construct 3,837 fewer residential units than the Proposed Project Alternative. Overall the average density across the residentially designated area would decrease to approximately 5.14 du/ac compared to 6.65 du/ac in the Proposed Project Alternative.

The reduced numbers of dwelling units under the No USACE Permit Alternative would be substantially less than the Blueprint and Proposed Project Alternative resulting in reduced amounts of project-generated traffic and air quality emissions. However, the Blueprint envisions a higher density of development on the SPA than proposed under the No USACE Permit Alternative. Although low density on a particular property may reduce the levels of impacts occurring on or emanating from the property, low densities can be considered an inefficient use of finite land resources. In areas with growing populations, low-density development coupled with increasing market demand can result in development being pushed outward toward other areas on the urban periphery, with the long-term consequence of more overall loss of habitat, open space, and farmland.

Based on Blueprint principles, development under the No USACE Permit Alternative could potentially result in future conversion of agricultural land and less protection of natural resources over the long term in the greater Sacramento region because more land would be required for expansion of the overall regional urban areas. Such new development, as proposed under the No USACE Permit Alternative, would be required to comply with the

policies of the local jurisdictions. In addition, impacts of these projects would undergo separate environmental review to identify potential impacts and mitigation measures. (See "A" or "Land" Sections of this EIR/EIS for an evaluation of the physical impacts on the environment associated with development of the proposed project.) In summary, the No USACE Permit Alternative would be **inconsistent** with the SACOG Sacramento Region Preferred Blueprint Scenario. ***[Greater]***

PP

The Proposed Project Alternative reflects the concept of smart growth, consistent with the SACOG Blueprint. These features are summarized below:

- **Transportation Choices:** A public transit corridor would be included throughout the SPA with connections to the town center, regional commercial center, and neighborhood centers. Bus transit routes would be integrated into systems provided by Folsom and Regional Transit. Multi-use trails, bicycle trails, and pedestrian walkways and sidewalks would be incorporated into the development.

- **Mixed-Use Development:** A mixed-use Town Center and smaller neighborhood centers would accommodate development of residential, commercial, office, and civic uses. Neighborhood centers may develop as vertical or horizontal mixed-uses with commercial and service-based uses that are designed to serve the local community. Residential elements within the neighborhood centers may include separate, higher density residential buildings, either in a vertical format or in a horizontal alignment.

- **Compact Development:** A regional commercial center would be situated along U.S. 50 and Scott Road adjacent to and just north of the mixed-use town center. This adjacency is intended to promote a relationship between this regional-scale commercial and the walkable character of the Town Center. Additional commercial uses would be of a larger scale and highway oriented. Commercial and service-based uses would be incorporated into neighborhood centers and include residential elements such as separate, higher density residential buildings.

- **Housing Choice and Diversity:** A variety of housing types are proposed to better serve the economic diversity of local homebuyers, including single family detached and attached homes, apartments, condominiums, and townhomes.

- **Use of Existing Assets***:* Land uses are linked to existing transportation patterns, such as U.S. 50, Prairie City Road, and Scott Road. Additional linkages to the City north of U.S. 50 would be proved through improvements to the existing interchanges at U.S. 50 and Prairie City Road and at U.S. 50 and Scott Road/East Bidwell Street, a new interchange at U.S. 50 and Oak Avenue, and a new overcrossing of U.S. 50 at Rowberry Drive.

- **Quality Design:** The Proposed Project Alternative is intended to provide a variety of high-quality neighborhood, regional commercial center, town center, and neighborhood center designs, appropriate to the scale and use of these areas. Open space, recreational uses, and parks are proposed throughout the community and integrated within its design. Approximately 30% of higher density residential uses would be located near commercial uses, parks, and schools to create walkable communities.

- **Natural Resource Conservation:** The Proposed Project Alternative includes conservation of 30% of the SPA as natural open space. These areas would provide protection of oak woodlands, riparian corridors, creeks, wetlands, and heritage trees.

The Blueprint identifies the SPA as a future planned community accommodating the long-term needs of Folsom and contributing to the Sacramento region. The SACOG Blueprint Preferred Scenario anticipates the project would generate approximately 7,500 jobs and develop 12,000 households. The Blueprint's land use designation

for the SPA is illustrated in Exhibit 3A.10-2. The Proposed Project Alternative would exceed the job projections identified in the Blueprint for the SPA. This alternative accommodates approximately 13,210 jobs, which is 5,710 more jobs than anticipated in the Blueprint.

The Proposed Project Alternative would develop 10,210 dwelling units, which is 1,790 dwelling units less than identified in the Blueprint for the SPA. Overall average density across the residentially designated area of 6.65 du/ac. Although the project would include a lesser density of residential development than identified in the Blueprint for the SPA, the Proposed Project Alternative fulfills the principles of smart growth identified in the Blueprint. As discussed above, this alternative would allow for a system of multimodal transportation; would provide a variety of mixed-use areas and a range of housing choices; and would emphasize compact development, quality design, and natural resource conservation. (See "A" or "Land" Sections of this EIR/EIS for an evaluation of the physical impacts on the environment associated with project development.) In summary, the Proposed Project Alternative would be **consistent** with the SACOG Sacramento Region Preferred Blueprint Scenario.

RIM

The types of land uses under the Resource Impact Minimization Alternative would be the same as those under the Proposed Project Alternative. However, the project components would be reconfigured under the Resource Impact Minimization Alternative to include additional areas of high-quality biological habitat in the proposed preserve area, preservation of most of the known on-site cultural resources, and avoid many of the impacts on U.S. Army Corps of Engineers (USACE) jurisdictional wetlands (see Exhibit 2-10 in Chapter 2, "Alternatives").

The number of jobs generated by Resource Impact Minimization Alternative would exceed the job projections identified in the Blueprint for the SPA. This alternative accommodates approximately 9,501 jobs, which is 2,001 more jobs than anticipated in the Blueprint. However, this alternative would generate 3,709 fewer jobs than the Proposed Project Alternative.

The Resource Impact Minimization Alternative would provide residential development on a similar footprint compared to the Proposed Project Alternative; however, the additional natural resources protection would result in substantially fewer dwelling units. The Resource Impact Minimization Alternative would construct 7,965 dwelling units, which is 4,035 dwelling units less than identified in the Blueprint for the SPA, and would construct 2,245 fewer residential units than the Proposed Project Alternative. Overall, the average density across the residentially designated area would decrease to approximately 6.0 du/ac compared to 6.65 du/ac under the Proposed Project Alternative.

The reduced numbers of dwelling units under the Resource Impact Minimization Alternative would be substantially less than the Blueprint and Proposed Project Alternative resulting in reduced amounts of project-generated traffic and air quality emissions. However, the Blueprint envisions a higher density of development on the SPA than is proposed under the Resource Impact Minimization Alternative. Although low density on a particular property may reduce the levels of short-term impacts occurring on or emanating from the property, low densities can be considered an inefficient use of finite land resources. In areas with growing populations, low-density development coupled with increasing market demand can result in development being pushed outward toward other areas on the urban periphery, with the long-term consequence of more overall loss of habitat, open space, and farmland.

Based on Blueprint principles, development under the Resource Impact Minimization Alternative could potentially result in future conversion of agricultural land and less protection of natural resources over the long term in the greater Sacramento region because more land would be required for expansion of the overall regional urban areas. Such new development, as proposed under the Resource Impact Minimization Alternative, would be required to comply with the policies of the local jurisdictions. In addition, impacts of these projects would undergo separate environmental review to identify potential impacts and mitigation measures. (See "A" or "Land" Sections of this EIR/EIS for an evaluation of the physical impacts on the environment associated with

development of the proposed project.) In summary the Resource Minimization Alternative would be **inconsistent** with the SACOG Sacramento Region Preferred Blueprint Scenario. ***[Greater]***

CD

The types of land uses under the Centralized Development Alternative would be the same as those under the Proposed Project Alternative. However, project components would be reconfigured under the Centralized Development Alternative to provide additional open space within the eastern foothills and avoid and/or reduce impacts on USACE jurisdictional wetlands, high-quality biological habitat, cultural resources, and visual resources. A higher density of residential development would be located within the central portion of the SPA, thereby reducing potential impacts related to the amount of project-generated traffic and air quality emissions (see Exhibit 2-12 in Chapter 2, "Alternatives").

The number of jobs generated by Centralized Development Alternative would exceed the job projections identified in the Blueprint for the SPA. This alternative accommodates approximately 13,575 jobs, which is 6,075 more jobs than anticipated in the Blueprint, and would include 365 more jobs than the Proposed Project Alternative.

The Centralized Development Alternative would include less residential development than identified in the Blueprint for the SPA and would construct 9,026 dwelling units, which is 2,974 dwelling units less than identified in the Blueprint for the SPA and would construct 1,184 fewer dwelling units than the Proposed Project Alternative. However, this alternative would have a higher density of residential development on a smaller footprint compared to the Proposed Project Alternative, resulting in more dwelling units per acre. Overall, the average density across the residentially designated area would increase to 7.85 du/ac in the Centralized Development Alternative compared to 6.65 du/ac in the Proposed Project Alternative.

The Centralized Development Alternative fulfills the principles of smart growth identified in the Blueprint. As discussed above, this alternative would allow for a system of multimodal transportation; would provide a variety of mixed-use areas and a range of housing choices; and would emphasize compact development, quality design, and natural resource conservation. Smart growth principles suggest that developing the site with a higher density, centralized land use pattern would focus market demand for development into an area near existing development, infrastructure, and services. Although the project would include less residential development than identified in the Blueprint for the SPA, a higher density of residential development would be located within central portion of the SPA, thereby reducing potential impacts related to the amount of project-generated traffic and air quality emissions. (See "A" or "Land" Sections of this EIR/EIS for an evaluation of the physical impacts on the environment associated with development of the proposed project.) In summary, the Centralized Development Alternative would be **consistent** with the SACOG Sacramento Region Preferred Blueprint Scenario. ***[Similar]***

RHD

The types of land uses under the Reduced Hillside Development Alternative would be the same as those under the Proposed Project Alternative. However, project components would be reconfigured under the Reduced Hillside Development Alternative to avoid and/or reduce impacts on USACE jurisdictional wetlands, high-quality biological habitat, cultural resources, and visual resources. A higher density of residential development would be located within the central portion of the SPA, thereby reducing potential impacts related to the amount of project-generated traffic and air quality emissions (see Exhibit 2-14 in Chapter 2, "Alternatives").

The number of jobs generated by Reduced Hillside Development Alternative would exceed the job projections identified in the Blueprint for the SPA. This alternative accommodates approximately 14,180 jobs, which is 6,680 more jobs than anticipated in the Blueprint, and would include 970 more jobs than the Proposed Project Alternative.

The Reduced Hillside Development Alternative would have a greater density of residential development than identified in the Blueprint for the SPA. This alternative would construct 11,553 dwelling units, which is 447 fewer dwelling units than identified in the Blueprint, and would construct 1,343 more dwelling units than the Proposed Project Alternative. This alternative envisions a higher density of residential development on a slightly smaller footprint compared to the Proposed Project Alternative, resulting in more dwelling units per acre. Overall, the average density across the residentially designated area would increase to 7.84 du/ac under the Reduced Hillside Development Alternative compared to 6.65 du/ac under the Proposed Project Alternative.

Although the Reduced Hillside Development Alternative would include a greater density of residential development and exceed the jobs projections identified in the Blueprint for the SPA, the Reduced Hillside Development Alternative fulfills the principles of smart growth identified in the Blueprint. As discussed above, this alternative would allow for a system of multimodal transportation; would provide a variety of mixed-use areas and a greater range of housing choices based on its larger number of units; and would emphasize compact development, quality design, and natural resource conservation.

Smart growth principles suggest that developing the site with a higher density, centralized land use pattern would focus market demand for development into an area near existing development, infrastructure, and services. A higher density of residential development would be located within central portion of the SPA, thereby reducing potential impacts related to the amount of project-generated traffic and air quality emissions. (See "A" or "Land" Sections of this EIR/EIS for an evaluation of the physical impacts on the environment associated with development of the proposed project.) In summary, the Reduced Hillside Development Alternative would be **consistent** with the SACOG Sacramento Region Preferred Blueprint Scenario. ***[Lesser]***

Off-Site Elements

Construction of the off-site U.S. 50 highway interchange improvements, the sewer force main, the detention basin, and the two roadway connections from the Folsom Heights property into El Dorado Hills would not involve construction of new housing or development of new businesses; therefore, implementing the off-site elements would not result in land uses that would conflict with the SACOG Sacramento Region Blueprint. **No inconsistency** with SACOG Sacramento Region Preferred Blueprint Scenario would result from construction of the off-site elements under the Proposed Project or the other four action alternatives under consideration. ***[Similar]***

IMPACT 3A.10-3 Cancellation of Existing On-Site Williamson Act Contracts. *Project implementation could result in the cancellation of Williamson Act contracts.*

On-Site Elements

NP

Under the No Project Alternative, up to 44 rural residences could be developed under the existing Sacramento County AG-80 zoning, and no off-site water facilities would be constructed. Development under this land use designation and zoning would not result in cancellation of existing Williamson Act contracts; therefore, **no direct** or **indirect** impacts would occur. ***[Lesser]***

NCP, PP, RIM, CD, RHD

As shown in Table 3A.10-1 and Exhibit 3A.10-1, approximately 1,530 acres of the SPA consist of agricultural lands under existing Williamson Act contracts. Notices of nonrenewal were filed on these parcels in 2004 and 2006; as a result, these existing contracts will expire in 2014 and 2016, respectively. Project implementation would require the cancellation of one or more of these Williamson Act contracts before their expiration date because the proposed land uses would not be permitted under the existing contracts.

Because the timing of the development of particular phases of the SPA is unknown at this time (see Section 2.3.1 in Chapter 2, "Alternatives," for a discussion of project phasing), future Williamson Act cancellation requests would be submitted on an as-needed basis, in conjunction with tentative map or other entitlement actions. The project applicant(s) for development of parcels under Williamson Act contract would need to apply to the City of Folsom for contract cancellation; as a result, the actual determination of consistency with the statutory consistency requirements would be made by the Folsom City Council, as it would succeed to the contracts upon annexation of the SPA. The City would be required to make findings supporting the cancellation of all Williamson Act contracts pursuant to California Government Code Section 51282 by determining if the cancellation is consistent with the purpose of the California Land Conservation Act or the cancellation is in the public interest (as discussed in detail in the "Regulatory Framework" section above). As a result, this **direct** impact is considered **significant**. The **indirect** impact that removing the impediment of Williamson Act contracts for urban development could result in the cancellation of additional Williamson Act contracts on lands near the SPA south of White Rock Road is evaluated in Impact 3A.10-3 below and EIR/EIS Sections 4.1, "Cumulative Impacts," and 4.2, "Growth-Inducing Impacts," of Chapter 4, "Other Statutory Requirements." ***[Similar]***

Mitigation Measure: No feasible mitigation measures are available.

Off-Site Elements

The off-site U.S. 50 interchange improvements, sewer force main, detention basin, and the two roadway connections from the Folsom Heights property into El Dorado Hills would not be located on parcels identified as being held under Williamson Act contracts. Therefore, implementing the off-site elements would not result in cancellation of Williamson Act contracts and this **direct** impact is considered **less than significant**. **No indirect** impacts would occur.

Mitigation Measure: No mitigation measures are required.

Implementation of the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives would likely result in the cancellation of one or more of the existing Williamson Act contracts prior to their expiration dates in 2014 and 2016 to accommodate the project development. Feasible mitigation measures, such as participation in an agricultural conservation easement, are not available to reduce impacts associated with the cancellation of these Williamson Act contracts to a less-than-significant level because no such programs are available. Therefore, this impact remains **significant and unavoidable**.

IMPACT 3A.10-4 Potential Conflict with Existing Off-Site Williamson Act Contracts. *Project implementation could conflict with lands under Williamson Act contracts south of the SPA; thereby potentially resulting in cancellation of those contracts.*

On-Site Elements

NP

The No Project Alternative could include development under the existing Sacramento County land use designation of General Agriculture (80 acres) and AG-80 zoning, and no off-site water facilities would be constructed. This land use designation and zoning identifies areas that are generally used for agricultural purposes and have parcels large enough to maintain economically viable farming operations. Development under this land use designation and zoning would not conflict with existing Williamson Act contracts or result in the cancellation of such contracts; therefore, **no direct** or **indirect** impacts would occur.

Land south of the SPA is characterized primarily by seasonal grazing land in an unincorporated area regulated by Sacramento County and the majority of these lands are under Williamson Act contracts. As discussed above, project implementation would require the cancellation of Williamson Act contracts because the proposed land uses would not be permitted under the existing contracts. The removal of the SPA from Williamson Act contracts for urban development may encourage the non-renewal of contracts on lands south of the SPA.

The land south of the SPA is located in a rural unincorporated portion of Sacramento County beyond the USB. The USB defines the ultimate boundary of urban development and is intended to be permanent, allowing modification only under special circumstances. These lands are not within the UPA, and it is not expected this area would receive urban levels of public infrastructure and services to support urban development. The Teichert and Walltown quarries are proposed 0.9 mile and 1.2, respectively, south of the SPA and would require cancellation of lands under Williamson Act contracts. No urban development is currently proposed south of the projects site. Nonetheless, land uses inconsistent with Williamson Act provisions and resulting in subsequent contract non-renewals could occur through requests for general plan amendments and rezoning of these lands. Project implementation could conflict with existing Williamson Act contracts or result in the cancellation of such contracts on lands south of the SPA and this **indirect** impact is considered **potentially significant**. **No direct** impacts would occur. (See also Chapter 4, "Other Statutory Requirements.") ***[Similar]***

Mitigation Measure: No feasible mitigation measures are available.

Off-Site Elements

The off-site U.S. 50 interchange improvements, the sewer force main, the detention basin in Sacramento County, and the two roadway connections into El Dorado Hills would be located on or adjacent to parcels identified as under Williamson Act contracts. Therefore, implementing the off-site elements would not conflict with existing Williamson Act contracts or result in the cancellation of such contracts. Therefore, implementing the off-site elements would not result in cancellation of Williamson Act contracts and this **indirect** impact is considered **less than significant**. **No direct** impacts would occur. (See also Chapter 4, "Other Statutory Requirements.")

Mitigation Measure: No mitigation measures are required.

Implementation of the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives could conflict with existing off-site Williamson Act contracts or result in the cancellation of such contracts on lands south of the SPA. No feasible mitigation measures are available to reduce impacts associated with potential conflicts or cancellation of these off-site Williamson Act contracts to a less-than-significant level. Therefore, this impact remains potentially **significant and unavoidable**.

CITY OF FOLSOM GENERAL PLAN AMENDMENT

Introduction

Implementation of the Proposed Project Alternative, Resource Impact Minimization Alternative, Centralized Development Alternative, or Reduced Hillside Development Alternative would require that the density ranges for certain Folsom General Plan land use designations be altered from the City's current ranges. Specifically, the following changes would be made:

- The density range for the Single Family (SF) designation would change from 2-4 units per acre to 1-4 units per acre, reducing the minimum density by one. This change would not change the maximum potential

number of units which could occur on Single-Family-designated land, but would allow these areas to build out at a lower density than is currently permitted.

- The density range for the Multi-family Medium Density (MMD) designation would change from 12-18 units per acre to 12–20 units per acre. This change would allow Multi-family Medium Density areas to build out at a slightly higher maximum density than is currently permitted. An additional 2 units could be constructed on each acre of Multi-family Medium Density -designated land.

- The density range for the Multi-family High Density (MHD) designation would change from 18-25 units per acre to 20-30 units per acre. For future development proposals on Multi-family High Density-designated land, the minimum permitted density would rise from 18 to 20 units per acre, while the maximum permitted density would increase to 30 units per acre. An additional 5 units could be developed on each acre of Multi-family High Density-designated land.

These amended General Plan densities would affect lands designated Single Family, Multi-family Medium Density, and Multi-family High Density throughout the existing City of Folsom, as well as the SPA. However, the majority of the land within the existing City limits is either built out, or has entitlements to build at a specified density. The change from existing conditions which would potentially occur as a result of the proposed changes would affect land which is currently undeveloped.

The changes to the Single Family density range would permit only lower-density development than is currently possible, and would not result in the potential for new population or housing units. However, the changes to the density ranges for the Multi-family Medium Density and the Multi-family High Density designations could increase the number of units and the associated population for undeveloped Multi-family Medium Density and Multi-family High Density parcels within the existing City of Folsom.

There are currently 24.2 acres of undeveloped land in the Multi-family Medium Density designation, and 88.2 acres of undeveloped land in the Multi-family High Density designation. Buildout of these areas at the proposed densities would increase the potential number of units in the Multi-family Medium Density designation by 49 units, from 435 to 484. An additional 441 units would be possible in the Multi-family High Density designation, increasing the maximum theoretical buildout from 2,205 to 2,646 units. The City of Folsom uses a factor of 1.94 persons per dwelling to estimate the population for multi-family development. Using this factor, the potential increase in units represents a potential population increase of 95 (to a total of 939 residents) for undeveloped Multi-family Medium Density-designated areas, and a potential population increase of 856 (to a total of 5,133) for undeveloped Multi-family High Density-designated areas. This would represent a total potential population increase of 951 people that was not evaluated in the existing General Plan EIR.

Evaluation of Impacts

The following sections evaluate the effects of the proposed density changes in the existing City of Folsom. Because the General Plan map for the existing City would not be changed, those impacts that are related to the geographical location of an action would be the same as those analyzed in the EIR for the City's existing General Plan. However, because the changes to the Multi-family Medium Density and Multi-family High Density density ranges have the potential to increase the number of units and, therefore, the population in the City of Folsom, impacts that are related to population or number of residential units must be reevaluated.

ISSUE AREAS WITH NO CHANGES

A number of issue areas addressed under CEQA and NEPA focus on impacts which are related to the geographic location and type of land use. These issue areas include:

- Agricultural Resources;
- Biological Resources;

- Cultural Resources;
- Geology, Soils, Minerals, and Paleontological Resources;
- Hazards and Hazardous Materials;
- Hydrology and Water Quality;
- Land Use and Planning; and
- Mineral Resources.

Because the proposed density changes would not alter the geographic location or type of land use which could occur on Multi-family Medium Density, and Multi-family High Density-designated areas, thresholds and impacts in these issue areas would not differ from those analyzed in the existing General Plan EIR.

The changes to the Single Family density range would not result in population or unit increases over the existing General Plan, and so impacts in the Single-Family–designated areas would not differ from those analyzed in the existing General Plan EIR's analysis of impacts.

EVALUATION OF GENERAL PLAN AMENDMENT

The following sections discuss the potential impacts that would occur as a result of changes to the density range in Multi-family Medium Density and Multi-family High Density-designated areas. Implementation of the proposed General Plan Amendment (GPA) would result in the potential for an additional 490 units on Multi-family Medium Density and Multi-family High Density parcels, and therefore an additional 951 residents, above and beyond what would be permitted under the existing General Plan.

Aesthetic Resources

The additional units could be constructed on infill parcels already designated for multi-family development by the City of Folsom, within the urbanized area of the City of Folsom. Although the increases in permitted density would result in more units, these increases would not be expected to substantially change the physical appearance or size of the structures that would be constructed compared to those which could be constructed under the existing General Plan. Multi-family residential units in the City of Folsom require a use permit and approval as a planned development, and the height of multifamily structures is limited to 4 stories. These standards would not change as a result of the proposed density changes included in the GPA. The Multi-family Medium Density and Multi-family High Density parcels which would be affected by the GPA are in areas characterized by urban development, and impacts related to scenic vistas, and scenic resources would be less than significant. There would be potentially significant short-term impacts on visual character during construction activities. Implementation of Mitigation Measure 3A.1-5 would reduce this impact to the extent feasible; however, the required screening of construction activity would not necessarily reduce this impact to a less-than-significant level.

In addition, the increased density of residential units could increase impacts related to creation of light and glare. This impact would be potentially significant. Implementation of Mitigation Measure 3A.1-6 would reduce this impact to the extent feasible, but this impact would remain significant and unavoidable.

Air Quality

The City of Folsom is located in the Sacramento Valley Air Basin (SVAB). The SVAB is in nonattainment status for ozone and respirable particulate matter with an aerodynamic diameter of 10 micrometers or less (PM_{10}). Construction of 490 additional units beyond those considered in the existing General Plan EIR could result in direct significant short-term construction-related air quality impacts, as well as direct significant long-term operational impacts related to increased population and number of automobile trips. No indirect impacts would occur. These increased impacts would contribute to cumulative net increases of criteria pollutants.

Implementation of Mitigation Measures 3A.2-1a, 3A.2-1b, and 3A.2-2 would reduce construction-related and operational emissions to the extent feasible, but these impacts would remain significant and unavoidable.

Many of the Multi-family Medium Density and Multi-family High Density-designated areas are located adjacent to arterial roadways. Development of multi-family housing in these areas could increase the number of sensitive receptors exposed to toxic air contaminant (TAC) emissions, resulting in a direct significant impact. No indirect impacts would occur. Implementation of Mitigation Measure 3A.2-4b would reduce this impact, but not to a less-than-significant level; therefore, this impact would remain significant and unavoidable. The GPA would only result in density changes in residential districts, not use changes, and therefore no direct or indirect impacts related to odors would occur.

Climate Change

The GPA would result in the construction of 490 additional residential units beyond those considered in the existing General Plan EIR. As noted below under "Transportation and Traffic," the traffic analysis for the project includes the additional units that would result from adoption of the GPA. These additional residential units represent approximately 951 more residents than under the existing General Plan who would be living in relatively higher-density environments within close proximity to existing services in the City of Folsom. To the extent that these additional units would accommodate regional growth at higher densities near existing centers, the proposed GPA would represent policy action to reduce greenhouse gas emissions. However, additional units would increase GHG emissions over current emissions, contributing to a cumulatively significant impact. Implementation of Mitigation Measures 3A.2-1a, 3A.2-1b, 3A.4-1, and 3A.4-2 would reduce construction-related emissions and operational emissions associated with the GPA to the extent feasible, but the contribution to a significant cumulative impact would remain significant and unavoidable.

Noise

The proposed GPA could result in construction of an additional 490 units beyond those analyzed in the existing General Plan EIR. These new units would result in increased traffic volumes, potentially increasing traffic-related noise impacts (increased traffic which would be generated by the GPA is incorporated into the 2030 traffic scenario analyzed for the project, and therefore traffic related noise impacts are analyzed in Section 3A.11, "Noise – Land"). These units would also be predominantly located along high-traffic roadways, potentially increasing the number of residents exposed to excess noise and resulting in a direct potentially significant impact. No indirect impacts would occur. Implementation of mitigation measures described in Section 3A.11, "Noise – Land," would reduce these impacts, but, as with impacts related to land use changes in the SPA, not to a less-than-significant level. Therefore, this impact would be significant and unavoidable.

Population and Housing

The proposed GPA could result in the construction of an additional 490 units that were not planned for under the existing General Plan. Construction of these additional units would result in a population increase of about 951 additional residents within the City of Folsom beyond the totals forecast in the existing General Plan and EIR. However, the City's 2009 Housing Element forecasts an increase of 32,179 residents between 2008 and 2030. This projected increase is greater than the increase that would result from the GPA and the construction of any of the land use alternatives described in this EIR/EIS. This impact would be less than significant. The indirect physical impacts of increased population are evaluated throughout this section. Because these increased units would be constructed on currently vacant or undeveloped parcels, the GPA would not directly or indirectly displace existing housing or residents. Therefore, there would be no direct or indirect impact related to displacement of housing or residents.

Public Services

For a discussion of public service providers and standards in the City of Folsom, please refer to Section 3A.14, "Public Services - Land." The Folsom Fire Department goal is 1.6 firefighters per 1,000 residents, and there are currently not sufficient firefighters to attain this goal with the existing population. Although any new units constructed under the GPA would be required to pay fire impact fees, the addition of 951 residents beyond those considered in the existing General Plan EIR would increase demand for fire services within the City of Folsom. Construction of additional units would also potentially increase demand for fire flow over existing conditions. Police response times in the City of Folsom do not meet the Police Department's standards, and the addition of new residents would potentially increase the demand for police services in the City of Folsom. These direct impacts would be potentially significant. No indirect impacts would occur. Implementation of existing City regulations and Mitigation Measures 3A.14-1 and 3A.14-2 would reduce these impacts to a less-than-significant level. The addition of 49 new Multi-family Medium Density units and 441 new Multi-family High Density units would generate 89 new students based on the Folsom Cordova Unified School District's student generation rates for Multi-family Medium Density (0.36 students per unit) and Multi-family High Density (0.16 students per unit). Under California law, payment of school impact fees, which is already required as a condition of approval in the City, is considered adequate mitigation for increased demand for schools, so this impact would be less than significant.

Recreation

The proposed GPA would result in an additional 951 residents in the City of Folsom beyond those envisioned in the existing Parks and Recreation Master Plan. the City's standard for adequate parkland is 5 acres per 1,000 residents. The City's ratio of park acreage per 1,000 residents is currently approximately 5.3; addition of these residents not accounted for in existing park planning would reduce the ratio to about 5.2. Therefore, because the proposed GPA would not reduce the City's ratio of park acreage below the City standard, there would no direct impacts related to provision of parkland. The proposed GPA would not increase the use of existing park facilities beyond acceptable standards in a manner that would cause substantial deterioration of existing facilities. Therefore, this indirect impact would be less than significant.

Traffic and Transportation

The 2030 traffic forecasts used in this EIR/EIS assume that all vacant parcels in the City would build out at the maximum permissible densities after implementation of the GPA (20 units per acre maximum in Multi-family Medium Density areas, and 30 units per acre maximum in Multi-family High Density areas). At these maximum densities, the change would increase the number of peak hour vehicle trips generated within the City by about 294 trips over conditions without the GPA. The Multi-family Medium Density and Multi-family High Density parcels are scattered around the City, with an increase of about 65 peak hour trips or less from any one parcel over conditions without the GPA. Under Cumulative No Project conditions, some intersections within the City would operate at unacceptable conditions (i.e. LOS D or worse). If vacant Multi-family Medium Density and Multi-family High Density parcels were developed to the currently permissible maximum densities (17.9 units per acre in Multi-family Medium Density and 25 units per acre in Multi-family High Density), the decrease in peak hour traffic volume at any intersection within the City compared to the analyzed total would be small and would not appreciably change intersection levels of service compared to the Cumulative No Project conditions. Traffic impacts of the GPA are included in the analysis contained in Section 3A.15, "Traffic and Transportation – Land." This analysis identified several significant impacts, and imposes mitigation measures to reduce impacts related to the GPA to the extent feasible. Therefore, no further mitigation is required beyond the mitigation measures already outlined in Section 3A.15, "Traffic and Transportation - Land". However, implementation of the GPA would contribute to the significant and unavoidable traffic and transportation impacts identified in Section 3A.15.

Utilities, Service Systems, and Water Supply

Section 3B.16, "Public Utilities and Services - Water," provides background on water demand within the City of Folsom. Demand in the City is projected to decrease in coming years as construction activity declines. All additional units would be required to document the availability of sufficient water supplies as part of individual project review by the City of Folsom. The City's 2005 UWMP estimates that at buildout under the current General Plan, with an average density of 13.595 units per acre in multi-family areas, water demand would exceed supply in single dry years. Construction of an additional 490 units beyond those planned for in the current General Plan and UWMP would result in potentially significant impacts related to water supply.

Section 3A.16, "Utilities and Service Systems - Land," provides background information on other utility providers within the City of Folsom. The construction of 490 additional units beyond those analyzed in the existing General Plan EIR could potentially result in wastewater flows that would exceed local collection and conveyance capacity within the existing City boundary, which would be a direct significant impact. No indirect impacts would occur. Implementation of Mitigation Measures 3A.16-1 and 3A.16-3 would require individual projects approved in GPA areas to provide proof of capacity for service prior to City approval of tentative subdivision maps or improvement plans. Therefore, implementation of these mitigation measures would reduce this impact to a less-than-significant level. Based on the data regarding treatment and conveyance capacity presented in Section 3A.16, "Utilities and Service Systems - Land," SRCSD would have treatment and conveyance capacity for the 490 additional units; therefore, direct impacts related to treatment and conveyance capacity outside the City boundary would be less than significant. No indirect impacts would occur. Although demand for solid waste, electricity, natural gas, telecommunications, and cable infrastructure would increase, existing capacity could accommodate the increased units in the existing city (please refer to Section 3A.16, "Utilities and Service Systems– Land" for a discussion of utility capacity in Folsom). Therefore, direct impacts related to demand for solid waste, electricity, natural gas, telecommunications, and cable infrastructure would be less than significant. No indirect impacts would occur.

Growth-Inducing Impacts (Folsom General Plan Amendment)

The GPA could result in the construction of up to 490 additional units (which could result in up to 951 new City residents) that are not accounted for in the existing Folsom General Plan's growth projections. This development would occur at relatively higher densities (multi-family) compared to the typical development pattern in the Sacramento Region, and would place more residents in infill locations, in closer proximity to more services, generally aligning with the principles of the SACOG Blueprint.

No infrastructure or public services improvements are proposed as part of the GPA; to the extent that specific individual developments which might occur under the GPA would require improvements, the potential growth implications of these improvements would be identified and analyzed at a project level; insufficient data concerning the potential location and capacity of any improvements makes such an evaluation speculative at a program level.

Folsom and the Sacramento region are slightly job-rich relative to the population. The GPA could result in the construction of residential units; no job-generating uses are envisioned as part of the GPA. These units would likely have a relatively small effect on the overall jobs-housing balance, but construction of additional units would bring the City and the region slightly closer to a balance between jobs and housing. Based on its effects with respect to development density and location, utilities and services, and jobs-housing balance, the GPA would not be expected to have significant growth-inducing impacts.

3A.10.4 RESIDUAL SIGNIFICANT IMPACTS

No feasible mitigation measures are available to reduce the conflict between the No USACE Permit and Resource Impact Minimization Alternatives and the SACOG Preferred Blueprint Scenario to a less-than-significant level.

The City would determine whether conflicts between the project and the SACOG Preferred Blueprint Scenario would translate into potentially significant environmental impacts. In determining whether any particular conflict translates into such an effect, the City would carefully consider whether implementation of the No USACE Permit and Resource Impact Minimization Alternatives, compared with implementation of a Blueprint-based plan, would yield either a lost opportunity to accomplish a long-term environmental benefit, or a lost opportunity to minimize a long-term environmental impact For these reasons, this impact must be assumed to remain **significant and unavoidable**. Impacts related to the consistency of the No Project, Centralized Development, and Reduced Hillside Development Alternatives with the SACOG Preferred Blueprint Scenario would be less than significant; therefore, no residual significant impacts would result from implementation of these action alternatives.

Impacts related to the cancellation of existing on-site Williamson Act contracts to accommodate the project development would be **significant and unavoidable** and no feasible mitigation measures are available to reduce impacts to a less-than-significant level. In addition, project implementation could conflict with existing off-site Williamson Act contracts or result in the cancellation of such contracts on lands south of the SPA and no feasible mitigation measures are available to reduce this impact to a less-than-significant level.

Several impacts of the GPA would remain **significant and unavoidable** after implementation of all feasible mitigation, including aesthetics, air quality, climate change, noise, population and housing, and traffic.

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This section was prepared by RMC Water and Environment.

3B.10 LAND USE AND AGRICULTURAL RESOURCES – WATER

3B.10.1 AFFECTED ENVIRONMENT

The Off-site "Water" Study Area includes a large portion of Sacramento County, stretching from the Natomas basin, north of the City of Sacramento, to eastern Sacramento County, south of U.S. 50 and the City of Folsom. As provided in Chapter 2, "Alternatives," the Off-site" Water" Study Area is divided into four zones, which include the (1) NCMWC's service area, (2) Sacramento River, (3) Freeport Project, and (4) alternative conveyance alignments or physical improvements. The Sacramento River is described in extensive detail in Section 3B.9, "Hydrology and Water Quality – Water." A description of the Freeport Project and how it relates to the Off-site Water Facilities is provided in Chapter 1, "Introduction," and Chapter 2, "Alternatives." Extensive detail regarding existing land use within Zone 3 is provided in the Freeport Regional Water Project EIR/EIS, which is incorporated by reference. Based on these considerations, the land use and planning description for the affected environment is focused to Zone 4 of the "Water" Study Area where physical improvements are proposed as part of the Off-site Water Facilities Alternatives, in east-central Sacramento County. Additionally, a general description of land use patterns within Zone 1 of the "Water" Study Area is provided to establish the necessary context for potential indirect impacts to irrigated agriculture within the Natomas Basin.

EXISTING LAND USES

The physical environment of the "Water" Study Area is suited for a broad range of land uses. Land use within NCMWC's service area largely consists of irrigated agriculture, with the exception of the southern portion, which is currently urbanizing from northern Sacramento and to the Sacramento/Sutter County line. This trend is expected to continue over the next 20-years with new growth planned within the Natomas Vision Area in the southern portion of NCMWC's service area and the planned Sutter Pointe Specific Plan development in north of the Sacramento/Sutter County line.

Land uses within eastern Sacramento County, in the vicinity of Zone 4 of the "Water" Study Area, are characterized by a similar transition to urbanized land uses with growth extending to the east from the City of Rancho Cordova and south from the City of Folsom. Unlike the Natomas basin, agricultural uses in eastern Sacramento County largely consist of grazing mixed with large surface mining operations. These two portions of the "Water" Study Area are described in more detail below.

Eastern Sacramento County – Zone 4 of the "Water" Study Area

A description of existing land uses are provided for each Off-site "Water" Alternative below. Where alternatives overlap, this fact is noted.

Off-site Water Facility Alternatives 1 and 1A

As described and illustrated in Chapter 2, "Alternatives," the water conveyance facilities would extend from the Freeport bifurcation at Vineyard and Gerber Roads and extend cross-county to the FSC, west of the intersection of Grant Line Road and Sunrise Boulevard, and then north along Grant Line Road and White Rock Road. Under these alternatives, the initial segment of the conveyance alignment and pump station would be constructed within an agricultural-residential area that extends along Gerber Road and east to the FSC. The Wild Hawk Golf Course is located immediately south of the bifurcation, near the intersection of Vineyard Road and Gerber. Several residences are also located north of the golf course and further east along Gerber Road. Agricultural-residential uses continue to the east along Gerber Road and past its current terminus to the FSC.

From the FSC, the conveyance alternatives would extend north and northeast along Grant Line Road and past the Kiefer Landfill, which is situated approximately 1/2 mile east of the roadway at Kiefer Boulevard. Grant Line Road currently delineates the eastern extent of urban growth planned within the eastern portion of the County; however, currently, much of the land base is currently used for grazing. Although, new residential and commercial uses are developing along Douglas Road, west of Grant Line Road, the extension of these uses to Grant Line Road is not expected for several years. Additionally, several large existing and proposed aggregate mining operations are located along Grant Line Road, both to the east and west of the roadway. Several OHV recreation areas are also located along White Rock Road, to the south and west of the proposed White Rock WTP. Exhibit 3B.10-1 illustrates the White Rock WTP site, surrounding uses, and current County General Plan land use designations.

Off-site Water Facility Alternatives 2, 2A, and 2B

These alternatives would originate at the Vineyard SWTP or North Douglas Water Tanks and extend to the Folsom SPA. The new pump facilities would be constructed at the Vineyard SWTP, which is currently under construction, or the North Douglas Water Tanks. Off-site Water Facility Alternative 2 could potentially include improvements along Florin and Eagles Nest Roads, which include scattered agricultural-residences, small farming operations, and livestock grazing. A large nursery is also located along Florin Road, between Excelsior and Eagles Nest Roads.

As described in Chapter 2, "Alternatives," Off-site Water Facility Alternative 2 would follow Eagles Nest Road north to Douglas Road. Eagles Nest Road, north of Florin Road is characterized as a rural roadway with only a few agricultural residences located in areas just north of Florin Road. Eagles Nest Road transitions into an unpaved roadway. The Off-site Water Facility Alternative 2 alignment transitions along a paved roadway through the Mather Regional Park and adjacent to the Mather Golf Course.

In contrast to Off-site Water Facility Alternative 2, Off-site Water Facility Alternative 2A would deviate from Florin Road and travel north along Excelsior and Mather Field Roads north to Douglas Road. The southern section of this alignment is very similar to Off-site Water Facility Alternative 2 in terms of existing land uses. This alignment would border the western edge of Mather Regional Park and the Sacramento Raceway Motorsports Park before entering Eastridge Estates. Eastridge Estates consists of low-density, single-family residential subdivisions with Veterans Park situated near its geographic center. At the intersection with Douglas Road, the alignment is within 1/4 mile of Mather Airport.

Once at Douglas Road, Off-site Water Facility Alternatives 2 and 2A would cross the FSC and Sunrise Boulevard and extend east to Grant Line Road. East of Sunrise Boulevard, single-family residential communities are developing immediately south of Douglas Road within the Sunrise-Douglas Community Plan Area. Although areas north of Douglas Road are planned for eventual development, these areas are still relatively undeveloped and used primarily for grazing. The Sunrise-Douglas Community Plan area includes the conceptual development plan for approximately 6,015 acres north and south of Douglas Road, west of Grant Line Road, and corresponds with the southeastern portion of the City of Rancho Cordova.

Off-site Water Facility Alternative 2B would join the Off-site Water Facility Alternative 2 alignment at the intersection of Ivan Way and Douglas Road and, once at Grant Line Road, would follow the same route as described for Off-site Water Facility Alternative 1. Uses along Ivan Way include new low-density residential areas to the west within the North Douglas Community Plan and agricultural grazing lands to the east.

Existing General Plan Land Use Designations for the White Rock and Folsom Boulevard WTP Sites

Exhibit 3B.10-1

Off-site Water Facility Alternatives 3 and 3A

Under Off-site Water Facility Alternatives 3 and 3A, the raw-water conveyance alignments would generally follow the same alignments as described for Off-site Water Facility Alternatives 2 and 2A, respectively. The main difference in these two alternatives is that these alignments would extend from the Freeport bifurcation as opposed to the Vineyard SWTP to the White Rock WTP site, thereby adding additional roadway along Vineyard and Florin Roads. Exhibit 3B.10-1 illustrates the White Rock WTP site, surrounding uses, and current Sacramento County General Plan land use designations. Uses along the additional length of roadway are similar to that previously described with agricultural-residential situated on large lots, generally greater than 10 acres. In addition, a series of waste lagoons are located immediately south of Florin Road and the Vineyard SWTP.

Off-site Water Facility Alternatives 4 and 4A

As described in Chapter 2, "Alternatives," these alternatives would follow the same respective alignments as Off-site Water Facility Alternatives 3 and 3A up to Douglas Road and just east of Sunrise Boulevard. These alternatives would then deviate from Douglas Road and follow Sunrise Boulevard north for a short distance before deviating from the roadway, just south of Mechanical Drive. The alignment would then travel north through undeveloped property along the western perimeter of the planned Rio del Oro Specific Plan area. Numerous commercial and light and heavy industrial uses are situated just west of the alignment along Luyung Drive. In the future, uses proposed within the Rio del Oro Specific Plan area along the conveyance alignment include a mix of commercial and industrial land uses.

North of White Rock Road, the conveyance alignment would follow the planned Rancho Cordova Parkway, which is planned for construction in conjunction with new development proposed within the City of Rancho Cordova's Westborough Planning Area. This area is planned for residential, commercial, and office uses similar to the proposed Glenborough at Easton community. The Westborough Planning areas currently consist of open space and are lined with remnant dredge tailings, which are characteristic of the Aerojet property, including Rio del Oro.

The Folsom Boulevard WTP site location is located at the northern edge and adjacent to the Westborough Planning Area and just south of Folsom Boulevard and the FSC. Existing land uses along Folsom Boulevard near the WTP site include commercial and industrial uses. Multifamily residential uses are located further east along Folsom Boulevard and south of U.S. 50. Land uses south of Folsom Boulevard include the Aerojet industrial facilities, the Hazel Avenue Light Rail Station and parking lot, and the Folsom Auto Mall. Lands to the east are undeveloped and currently used for seasonal grazing. These lands also include open space resources such as Alder Creek and several other drainages, stock ponds, wetland and riparian habitat, and oak woodland. Exhibit 3B.10-1 illustrates the Folsom Boulevard WTP site, surrounding uses, and current Sacramento County General Plan land use designations.

Natomas Central Mutual Water Company Service Area – Zone 1 of the "Water" Study Area

The NCMWC service area is located in northern Sacramento County and southern Sutter County and encompasses approximately 33,000 acres. Land use within the NCMWC's service area is primarily agricultural, although northern portions of the City of Sacramento are located within the extreme southern portion of the NCMWC's service area. Land uses associated with these populated areas include residential, industrial, and commercial.

In addition to growth pressures from the south, the proposed Sutter Pointe Specific Plan area within southern Sutter County the Sutter/Sacramento County line consists of 7,500 acres planned for various forms of development. Current land uses include agricultural and industrial uses, primarily rice fields, but also the 50-acre Sysco Corporation warehousing and distribution center and the Holt Tractor Manufacturing facility. Other existing and planned developments within and/or adjacent to NCMWC's service area include Sacramento International Airport expansion projects and Metro Air Park, Placer Vineyards Specific Plan, the Rio Linda/

Elverta Community Plan, Natomas Vision development area, and The Natomas Basin Conservancy Mitigation Lands, which are managed in conjunction with the Natomas Basin Habitat Conservation Plan (City of Sacramento 2003).

EXISTING AGRICULTURAL RESOURCES

Much of the land base within Sacramento County was, at one time, considered highly productive farmland. Existing agricultural land uses within the eastern portion of the "Water" Study Area, roughly corresponding with Zone 4, include large-scale dry-land farming, animal husbandry, small-scale agricultural-residential uses, and small-scale irrigated farming operations in areas north of Jackson Highway/SR 16, west of Grant Line Road, and south of Douglas Road along Sunrise Boulevard. Areas west of Sunrise Road and north of Jackson Highway/ SR 16 consist of rangeland and dry-land farming. East of Sunrise Boulevard, existing agricultural operations include sheep and cattle range grazing, and large fields of clover, alfalfa, wheat, and oats. Operations north of Douglas Road include a small-scale cherry orchard and livestock grazing.

Natomas Central Mutual Water Company – Zone 1 of the "Water" Study Area

The NCMWC service area is located in northern Sacramento County and southern Sutter County and encompasses approximately 33,000 acres. Agricultural land uses dominate within NCMWC's service area, although urban uses within northern portions of the City of Sacramento are encroaching into the southern portion of NCMWC's service area. Portions of NCMWC's service area are planned to continue undergoing this transition in land use as urban development expands from the south and new development becomes established in south Sutter County. This transition is already occurring and is reflected in Table 3B.10-1 by the change in total crop acreages for 2004 and 2007. Notwithstanding this recent reduction, large portions of the NCMWC's service area will remain in agriculture or open space corresponding to provisions of the Natomas Basin Habitat Conservation Plan and the current update (City of Sacramento 2003).

Table 3B.10-1
Natomas Central Mutual Water Company 2004 and 2007 Crop Acreages

Crop Type	2004	2007
Alfalfa	0	741
Clover	181	0
Corn	422	648
Golf Course	90	120
Grain	40	227
Grass/Hay	0	195
Kiwis	3	3
Managed Marsh	433	439
Melons, Squash	95	75
Misc. Deciduous	56	5
Mixed Pasture	41	21
Mixed Truck	0	14
Onions and Garlic	12	50
Peppers	5	10
Rice	17,279	11,604
Safflower	390	149
Sunflowers	0	139
Tomatoes	341	35
Vineyard	0	0
Wheat	924	850
Total	**20,762**	**15,325**

Source: Wagner and Bonsignore 2007

Agricultural Production and Revenues

In 2007, agricultural production within Sacramento County earned approximately $364.8 million for the State of California's economy (Sacramento County 2007b). Grapes and wine were the top commodities in Sacramento County producing $74.15 million in 2007. Milk and Nursery Stock were the next two largest commodities generating $66.1 and $37.7 million, respectively for Sacramento County (Sacramento County 2007b).

Farmland Quality

Prime farmland, as defined by the U.S. Department of Agriculture (USDA), is farmland characterized by the best combination of physical and chemical features enabling it to sustain long-term agricultural production (FMMP 2006). Farmland of Statewide Importance includes lands that are nearly prime farmland and may produce as high a yield as prime farmland when treated and managed according to acceptable farming methods. Some lands in this category may include those that are set aside by state law for agricultural purposes.

To assess the quality of the "Water" Study Area for agricultural cultivation, the City reviewed Important Farmland maps produced by the California Department of Conservation's (DOC's) Farmland Mapping and Monitoring Program (FMMP). The 2006 important farmland maps for Sacramento County indicate that portion of Zone 4 of the "Water" Study Area, or areas east of Excelsior Road are mainly classified as grazing land or other with small, isolated areas of Farmland of Local and Statewide Importance. These classifications differ substantially from those within Zone 1 of the "Water" Study Area, or the NCMWC's service area, which is generally classified as Prime Farmland or Farmland of Statewide Importance. Through 2006, Sacramento County contained approximately 19,597 acres of Prime Farmland, 9065 acres of Farmland of Statewide Importance, and approximately 464.5 acres of Unique Farmland (FMMP 2006).

Table B3.10-2 provides a summary of agricultural land within Sacramento County converted to nonagricultural uses during the time frame from 2004 to 2006.

Table 3B.10-2
Farmland Conversion from 2004–2006 in Sacramento County

Land Use Category	Total Acres Inventoried		2004–2006 Acreage Changes		
	2004	2006	Acres Lost	Acres Gained	Net Change
Prime Farmland	110,278	106,667	3,813	202	-3,611
Farmland of Statewide Importance	56,141	51,217	5,180	256	-4,924
Unique Farmland	15,187	15,268	402	483	81
Farmland of Local Importance	39,873	41,961	3,854	5,942	2,088
Important Farmland Subtotal	**221,479**	**215,113**	**13,249**	**6,883**	**-6,366**
Grazing Land	163,175	156,977	6,694	496	-6,198
Agricultural Land Subtotal	**384,654**	**372,090**	**19,943**	**7,379**	**-12,564**
Urban/Built Land	165,630	175,523	60	9,953	9,893
Other	67,548	70,242	5,536	8,230	2,694
Water	18,253	18,230	32	9	-23
Total Area Inventoried	**636,085**	**636,085**	**25,571**	**25,571**	**0**

Note: *During the period of 2004–2006 Sacramento County experienced a 9,893-acre net increase in Urban and Built-Up Land.
Source: California Department of Conservation, Division of Land Resource Protection 2006, (Table A-24)

Soil Suitability

The suitability of the local soil resource plays a crucial part in the determination of a plot's farmland designation. The land capability classification system developed by the USDA, Natural Resource Conservation Service (NRCS), rates each of the soil types within the County in relation to its limitations for crop management. A soil rated as Class I is considered to have few limitations whereas a soil rated as Class VIII could have severe limitations that, in many circumstances, would preclude it from commercial crop production. Generally, areas contained within Zone 4 of the Off-site Water Facilities Study Area are characterized by soils rated from Class IV to VII. In contrast, soils within the Natomas Basin are rated I to III, with soil wetness or shallow groundwater during winter months being the primary limitation to crop production.

3B.10.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

There are no Federal plans, policies, regulations, or laws related to land use planning that are applicable to the Off-site Water Facility Alternatives under consideration.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

The following state plans, policies, regulations, and laws related to land use and planning are relevant to the Off-site Water Facility Alternatives, and are described in detail in Section 3A.10, "Land Use and Agricultural Resources – Land:"

- State Planning Law, California Government Code Section 65300 et seq.
- State Zoning Laws, California Government Code Section 65800 et seq.
- Local Agency Formation Commissions, Cortese-Knox-Hertzberg Local Government Reorganization Act
- California Important Farmland Inventory System and Farmland Mapping and Monitoring Program
- California Land Conservation Act of 1965

Williamson Act

According to the maps prepared by the DOC, multiple properties within Sacramento and Sutter County portions of NCMWC's service area are under the provisions of an existing Williamson Act contract. Within Sacramento County, the remaining contracted lands within NCMWC's service area are generally limited to lands along and immediately south of the Sacramento/Sutter County line (DOC 2008). A large block of these properties are identified as land in non-renewal status east of SR 99.

The White Rock WTP site is currently under the provisions of a Williamson Act contract. According the Sacramento County Assessor's Office, a non-renewal notice was filed for this property in 2008 (Sacramento County Assessor 2010).

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

The following state plans, policies, regulations, and laws related to land use and planning are relevant to the Off-site Water Facilities, and are described in detail in Section 3A.10, "Land Use and Agricultural Resources – Land:"

- Sacramento Area Council of Governments' Sacramento Region Blueprint
- Memorandum of Understanding between Sacramento County and the City of Folsom
- Sacramento Local Agency Formation Commission and Resolution No. LAFC 1196
- Measure W
- Sacramento County Urban Service Boundary and Urban Policy Area

- Sacramento County General Plan Land Use Element and General Plan Designations; see Table 3.10A-2

Sacramento County General Plan – Land Use Element

The Sacramento County General Plan Land Use Element (Sacramento County 1993) identifies two basic types of land use designations: urban and rural, both of which are present in the "Water" Study Area. Urban designations are those planned for urban use during the time horizon of the General Plan (a 20-year plan), while rural designations are outside the area planned for urban uses during the time horizon of the General Plan.

A major emphasis of the General Plan Land Use Element is to achieve compact growth patterns that make the most efficient use of County lands. The current and past status quo of land development has created "low-density, auto-dependent land use patterns," causing unnecessary loss of "open space, deteriorating air quality, decrease in housing affordability, degradation of public facilities, and increase in traffic congestion" (Sacramento County 1993). In order to ensure a more efficient use of land in the future, the General Plan establishes a specific area where growth will occur, the Urban Policy Area (UPA), within a larger ultimate growth area delineated by an Urban Services Boundary (USB). As shown in Exhibit 3B.10-1, the proposed Folsom SPA and White Rock WTP site are located outside the USB, however, much of the remaining portions of the "Water" Study Area are located within the USB.

The General Plan includes the County's policies for the use of public and private land. These policies cover a range of land use planning issues and are intended to guide County decision-making for land use in the County. Many of the General Plan policies relate to environmental issues and are intended to avoid or mitigate environmental effects.

The land use designation for the White Rock WTP is General Agriculture (80 acres) and zoned AG-80; see Exhibit 3B.10-1. Areas to the south and north are both currently zoned AG-80 with a Resource Conservation [AG-80(RC)] combining district. The General Agriculture designation identifies land that is generally used for agricultural purposes, but is less suited for intensive agricultural than the Agricultural Cropland land use designation. The minimum lot size allowed is 80 acres, which is large enough to maintain an economically viable farming operation. Typical farming activities include dry land grain, and irrigated and dry land pasture. Constraints found in areas with this designation include shallow soils, uncertain water supply, moderate slopes, fair to poor crop yield, and farm unit fragmentation. Only agricultural production is permitted in areas with this designation. The General Agriculture/80 acre designation allows single-family dwelling units at a density no greater than 80 acres per unit (Sacramento County 1993).

Lands within the Folsom Boulevard WTP site and adjacent areas are designated Industrial Extensive under the County General Plan (see Exhibit 3B.10-1). This land use designation allows activities that require large areas of land and do not require urban levels of services. Extensive Industrial areas are not located within the urban portion of the County and do not require public infrastructure and services. Further, the General Plan indicates that urbanized levels of service will not be extended to these areas during the current planning period. Floor Area Ratios range from 0.15 to 0.40. (Sacramento County 1993).

Sacramento County General Plan Update

Sacramento County is preparing the first comprehensive update of its General Plan since it was adopted in 1993. This update is necessary to plan for growth in the County's next planning cycle (2005–2030) and to address new emerging planning issues.

A public review draft of the Land Use Element for the General Plan Update was published on May 30, 2007, and includes strategies that would accommodate the County's growth allocation defined in SACOG's adopted Sacramento Region Blueprint (Sacramento County 2007a, SACOG 2004). SACOG's Blueprint allocates 99,700 new residential units for the unincorporated County through 2030. Because this allocation exceeds the current residential holding capacity of the county's UPA, the draft General Plan Update includes management strategies

to accommodate this growth. One strategy includes establishment of new growth areas that would include new mixed use communities, in currently undeveloped portions of the "Water" Study Area within Zone 4 (Sacramento County 2007a).

The Sacramento County General Plan provides for growth and development in the unincorporated area through the year 2010. At the time of this EIR/EIS's preparation, the County remains in the process of updating the current General Plan, which was adopted in 1993. Part of the overall goal of the Sacramento County General Plan is the maintenance of the County's agricultural lands and their agricultural productivity. Sacramento County has recognized the importance of agricultural issues and continues to promote the following general goals (Sacramento County 1993):

GOAL: Maintenance of the County's agricultural lands, their agricultural productivity and natural resource benefits they provide; and

GOAL: Maintenance of farming and related industries as a strong and viable sector of the economy of a rapidly urbanizing County.

In addition to the above goals, the County has established the following objectives and policies to manage agricultural land. Those policies and objectives that are applicable to this project are as follows:

Urban Encroachment Objective. Prime Farmlands as defined by the California Department of Conservation, and lands with intensive agricultural investments, such as orchards, vineyards, dairies, and other concentrated livestock or poultry operations, should be protected from urban encroachment.

- **Policy AG-5:** Mitigate loss of prime farmlands or lands with intensive agricultural investments through CEQA requirements to provide in-kind protection of nearby farmland.

Agricultural Zoning Objective. Retain agricultural land holdings in units large enough to guarantee future and continued agricultural use.

- **Policy AG-8:** Agricultural land divisions shall not adversely affect the integrity of agricultural pursuits. Agricultural land divisions may be denied if the reviewing authority finds that the division of land is likely to create circumstances inconsistent with this policy. (Sacramento County 1993)

Sacramento County Zoning Code

The Zoning Code of Sacramento County regulates the use of buildings, structures, and land in unincorporated Sacramento County in order to encourage the most appropriate use of land. The zoning code establishes Land Use Zones and describes the purposes, permitted uses, special conditions, and prohibitions for the land use zones.

Sacramento Local Agency Formation Commission

The Sacramento Local Agency Formation Commission (LAFCo) is a Countywide Commission, required in each California County. LAFCo's primarily goal is to ensure the orderly formation of local governmental agencies and preserve agricultural and open space lands. In this role, LAFCo has the power to approve local agency boundary changes, annexations, and agency formations.

As part of the City of Folsom's sphere of influence Amendment, LAFCo adopted Resolution LAFC 1196, which includes Condition (3) requiring that at the time "an application to annex property within the sphere of influence, the City shall submit to LAFCo for its review and approval, an updated Master Services Element which includes a program for implementing and financing measures necessary to support the provision of major components of infrastructure and services, and other essential services, needed to support the distribution, location, extent, and intensity of land uses proposed within the sphere of influence Amendment Area. The Master Services Element

shall identify a water sources and ability to acquire said water sources sufficient to service the area contained in the annexation application. The Master Services Element shall identify the process the City will undertake to acquire and secure a water supply sufficient for LAFCo to determine compliance with Condition (11)(a) of this Resolution."

In addition to issues relating to the City's annexation of lands within the Folsom sphere of influence, the Sacramento County LAFCo would retain approval authority for any annexation of unincorporated County land to City jurisdiction for the WTP site. Applicable polices as contained in LAFCo's Policy, Standards and Procedures Manual are identified in Section 3A.10, "Land Use and Agricultural Resources – Land."

City of Rancho Cordova General Plan

Portions of Zone 4 of the "Water" Study Area are contained within the planning jurisdiction of the City of Rancho Cordova. Rancho Cordova officially became a city on July 1, 2003. Upon incorporation, the City adopted applicable portions of the County's general plan and zoning ordinance, as well as applicable community and specific plans, and zoning designations in areas within the newly incorporated city.

On June 26, 2006, the Rancho Cordova City Council adopted the City of Rancho Cordova General Plan. The "Water" Study Area encompasses several Planning Areas within the City of Rancho Cordova including the Aerojet, Rio del Oro, Grant Line South, West, Jackson, Westborough, Glenborough, and East Planning Areas. These planning areas are illustrated in Exhibit LU-6 of the City's General Plan. Detailed planning efforts within the City of Rancho Cordova are generally specific to each of the City's Planning Areas.

The Folsom Boulevard WTP site is located within the Westborough Planning Area. The Westborough Planning Area is currently the subject of a development application that features primarily residential development focused around a regional town center at the new Rancho Cordova Parkway/U.S. 50 interchange. The regional town center will likely feature significant retail shopping with other restaurant, service, office, and residential uses at a density of 15 to 25 units per acre. Entertainment venues and/or sports-oriented uses may be a key component of the town center. Because of the area's proximity to U.S. 50 and light rail the average residential density for the project will be approximately seven units per acre (City of Rancho Cordova 2006).

Specific land use planning goals and policies contained in the city of Rancho Cordova's General Plan applicable to the Off-site Water Facilities Alternatives are identified below:

- **Policy LU.4.1:** Coordinate with regional and local planning agencies and jurisdictions to set land use, circulation, park, and environmental policies and cooperate in the implementation of programs and developments/improvements consistent with the City of Rancho Cordova's General Plan.

    - **Action LU.4.1.1:** Establish and maintain agreements or working relationships with SACOG, Sacramento County, and the cities of Folsom, Sacramento, and Elk Grove to facilitate a coordinated approach to land use decisions that affect each jurisdiction.

    - **Action LU.4.1.2:** Facilitate agreements (e.g., memorandums of understanding) for critical planning topics and activities with neighboring jurisdictions and SACOG and allow for shared responsibility and an equal voice for all participants.

- **Policy LU.6.2:** Ensure subsequent detailed land planning for those Planning Areas with Conceptual Land Plans.

    - **Action LU.6.2.1:** Require the development and approval of Specific Plans or Special Planning Areas for the Aerojet, East, Glenborough, Grant Line North, Grant Line South, Grant Line West, Jackson, Mather, Rio del Oro, Suncreek/Preserve, and Westborough Planning Areas to create parcel-specific land use plans for those areas. Subsequent land use plans shall be consistent with relevant General Plan provisions and

shall reflect the ideas communicated in the Conceptual Land Plans and associated planning area descriptions.

- **Policy LU.6.4:** Revitalize Folsom Boulevard consistent with the Folsom Boulevard Planning Area.

  - **Action LU.6.4.1:** Develop, adopt, and implement a Folsom Boulevard Specific Plan that refines the vision and creates a detailed land plan with action steps for revitalization of the corridor. The Specific Plan shall include a land plan consistent with the vision and development envelope in the General Plan as well as the Planning Area description.

  - **Action LU.6.4.2:** Analyze development projects proposed for the Folsom Boulevard Planning Area for consistency with the planning area description for the corridor.

City of Folsom General Plan

The City's General Plan outlines the pattern of urban growth and the requirements for individual land uses for areas north of U.S. 50 and within the current city limits. The City's General Plan does not contain specific policy language as it relates to the Off-site Water Facility Alternatives. However, the Folsom Specific Plan, in which the Off-site Water Facilities would ultimately serve, would require an amendment to the City's General Plan in conjunction with a petition for annexation of the Folsom SPA into the City of Folsom.

As part of the southern extension of the City's sphere of influence, the City entered into an MOU with LAFCo to establish a guide for regional, long-range planning efforts relative to the annexation of the Folsom SPA. The MOU addresses a number of issues including water supply, transportation, schools, and open space that were later incorporated into language found in Measure W and subsequently the City Charter. Measure W requires the City to take certain actions related to each of the issue areas. In terms of water supply, Measure W requires the City to identify and secure the sources of water supply to serve the SPA without reducing the existing water supply currently serving users to the north of U.S. 50, and at no cost to existing Folsom residents.

3B.10.3 Environmental Consequences and Mitigation Measures

Thresholds of Significance

The compatibility of land uses is based largely upon the anticipated environmental effects on adjacent uses. Since general, community, and specific plans are adopted by Sacramento County and the Cities of Folsom and Rancho Cordova to promote orderly, efficient development and avoid land use compatibility issues and associated environmental effects, the Off-site Water Facility Alternatives are evaluated for consistency with the goals, policies, and objectives of the adopted plans for local jurisdictions and water agencies.

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. These thresholds also encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. For the purposes of this EIR/EIS, the Off-site Water Facilities would result significant environmental effects to land use and agricultural resources if it would:

- physically divide an established community;

- conflict with any applicable water master plan or land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect;

- develop land uses that are incompatible with each other or with adjacent uses;

- convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use;

- conflict with existing zoning for agricultural use, or a Williamson Act contract; or

- involve other changes in the existing environment which, due to their location or nature, could result in impacts to existing agricultural operations.

Potential land use conflicts or incompatibility with adjacent areas are sometimes the result of environmental effects, such as the generation of noise or objectionable odors. Biological resources, noise, traffic, light/glare, public service-related effects of the Off-site Water Facilities are discussed in detail in other relevant "Water" sections of Chapter 3.

ANALYSIS METHODOLOGY

This evaluation of the Off-site Water Facility Alternatives considers potential land use conflicts resulting from the placement of new structures in agricultural and residential areas within Zone 4 of the Off-site Water Facility Study Area and consistency with applicable Federal, state, local, and regional planning documents. Background regarding Zone 4 was obtained through a combination of field reconnaissance to verify existing land use and review of pertinent planning documents, including, but not limited to: the *Sacramento County General Plan* (1993) and zoning ordinance, the Sacramento County General Plan Update DEIR (2009), the *City of Folsom General Plan* (1988) and zoning code, and the *City of Rancho Cordova General Plan* (2006) and zoning ordinance. To analyze land use consistency and land use conflicts, the Off-site Water Facility Alternatives were reviewed relative to the existing and planned land use designations for each jurisdiction.

In the context of the actions proposed in conjunction with the Off-site Water Facility Alternatives, the consistency evaluation also considers other applicable water-related planning documents including, but not limited to, SCWA's Water Supply Master Plan, the Water Forum Agreement (WFA), LAFCo's Resolution Approving the sphere of influence extension, and related documents, and other applicable regional water planning documents. Many of these regulations are described in more detail in other applicable sections and Section 3A.10, 3A.10, "Land Use and Agricultural Resources – Land," of this EIR/EIS. The standard for consistency used here is based on The Planners Guide to Specific Plans (OPR 2001): "An action, program, or project is consistent with the general plan if, considering all its aspects, it will further the objectives and policies of the general plan and not obstruct their attainment."

In some instances, a plan or land use inconsistency also poses physical environmental consequences, such as noise or traffic. In these cases, the consequences are generally referenced in this section with more detail provided in the discussion provided in the specific "Water" section of Chapter 3 that focuses on that issue (e.g., noise).

Important Farmlands and agricultural operations within the "Water" Study Area were identified using a combination of data from the DOC's FMMP, the County Agricultural Commissioner, and field reconnaissance (DOC 2006). The Off-site Water Facility Alternatives were then analyzed to determine the potential extent for direct and/or indirect conversion of Important Farmland[1]. Additionally, potential conflicts with existing agricultural zoning, incompatibility with existing Williamson Act contracts, or other changes resulting from the implementation of the Off-site Water Facilities, which could remove Important Farmland from agricultural production were considered.

[1] Important Farmland includes lands classified as Prime Farmland, Farmland of Statement Importance, and Unique Farmland.

ISSUES NOT DISCUSSED FURTHER IN THIS EIR/EIS

Physical Division of an Established Community—New structural facilities associated with the Off-site Water Facilities would be located within existing road right-of-way or on undeveloped land. Once constructed, the water conveyance pipeline would be buried underground and not visible at the ground surface. The two Off-site WTP site locations currently under evaluation would be constructed at undeveloped locations within Zone 4 of the "Water" Study Area and, therefore, are not located within an established community. Based on these considerations, it is reasonable to conclude that the Off-site Water Facilities would not physically divide an established community and no impact would occur. Therefore, this issue area is not discussed further.

IMPACT ANALYSIS

Impacts that would occur under each of the Off-site Water Facility Alternatives are identified as follows:

NCP (No USACE Permit Alternative)

PA (Proposed Off-site Water Facility Alternative)

1 (Off-site Water Facility Alternative 1 – Raw Water Conveyance – Gerber/Grant Line Road Alignment and White Rock WTP)

1A (Off-site Water Facility Alternative 1A Raw Water Conveyance – Gerber/Grant Line Road Alignment Variation and White Rock WTP)

2 (Off-site Water Facility Alternative 2 Treated Water Conveyance – Douglas Road Alignment and Vineyard SWTP)

2A (Off-site Water Facility Alternative 2A Treated Water Conveyance – Excelsior Road Alignment Variation and Vineyard SWTP)

2B (Off-site Water Facility Alternative 2B Treated Water Conveyance – North Douglas Tanks Variation and Vineyard SWTP)

3 (Off-site Water Facility Alternative 3 Raw Water Conveyance – Excelsior Road Alignment and White Rock WTP)

3A (Off-site Water Facility Alternative 3A Raw Water Conveyance – Excelsior Road Alignment Variation and White Rock WTP)

4 (Off-site Water Facility Alternative 4 Raw Water Conveyance – Easton Valley Parkway Alignment and Folsom Boulevard WTP)

4A (Off-site Water Facility Alternative 4A Raw Water Conveyance – Easton Valley Parkway Alignment Variation and Folsom Boulevard WTP).

The impacts for each alternative are compared relative to the PA at the end of each impact conclusion (i.e., similar, greater, lesser).

IMPACT 3B.10-1 Conflict with Applicable Water Resource Management and Facility Plans, Policies, or Regulations. *Implementation of the Off-site Water Facility Alternatives would not conflict with applicable water resource management and facility plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect.*

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A

The various actions that are common to the Off-site Water Facility Alternative were evaluated in relation to existing public infrastructure and water supply planning documents for the region at large. These documents

include, the Public Facility Elements of the General Plans adopted by local jurisdictions (e.g., Sacramento County, City of Rancho Cordova) and water supply planning documents prepared at local, regional, state, and Federal levels by multiple agencies (e.g., Water Forum Agreement and Groundwater Management Plans). The planning documents were reviewed to assess the consistency of the operational components of the Off-site Water Facility Alternatives with applicable goal, polices, and objectives. A review of these planning documents indicates that the Off-site Water Facility Alternatives are respectful of existing surface water and groundwater interests and environmental concerns and are generally consistent with the objectives of local jurisdictions. The full text of the goals, policies, and objectives can be reviewed in each jurisdiction's General Plans and related planning documents; pertinent goals and objectives are referenced in Sections 3A.10.2 and 3B.10.2, Regulatory Framework.

From an operational perspective, implementation of the Off-site Water Facilities would be consistent with the City of Folsom's General Plan goals and objectives adopted to ensure the adequate provision of potable water supplies to new development. The Off-site Water Facilities would be consistent with the voter-approved Measure W by securing a new surface water supply for the Folsom SPA and constructing the necessary conveyance and treatment improvements to avoid any impacts to the City's existing water supply and treatment and conveyance infrastructure. Additionally, based on these considerations and the details provided in Chapter 2, "Alternatives," the Off-site Water Facility Alternatives demonstrate compliance with Conditions 3 and 11 of LAFCo's Resolution LAFC 1196, which require the securing of a sufficient, reliable water supply to serve new development prior to annexation of lands from within the Folsom SPA into the City. Based on these considerations, these alternatives would be **consistent** with these polices and, therefore, **direct** or **indirect** impacts would be **less than significant.** ***[Similar]***

The Off-site Water Facilities would support the improvement of the City of Folsom's infrastructure in areas annexed from the County and encourage the efficient and cost-effective delivery of potable water to these areas. Further, the Off-site Water Facilities would be consistent with the County's General Plan policies PF-1, PF-2, PF-3, and PF-5. These policies direct annexing jurisdictions to provide adequate public infrastructure to meet the needs of future development while minimizing impacts to in-stream water flow in the Sacramento and American Rivers by integrating diversions at Freeport and funding all facility operations associated with the WTP and conveyance facilities. Further, under the alternative, new structural features for the Off-site Water Facilities would be limited outside the Folsom SPA (e.g., underground pipelines) and integrated into the Freeport Project (e.g., existing permitted diversion). From these perspectives, it is reasonable to conclude that the methods of conveyance, diversion, and the proposed water supply for the Off-site Water Facility Alternatives would be consistent with County and City General Plan policies adopted for the purposes of mitigating or avoiding significant environmental impacts. For these reasons, this **direct** and **indirect** impact is considered **less than significant** and **consistent** with adopted plans and policies. ***[Similar]***

The assignment of CVP water to the City would further objectives identified for the region under the WFA by securing new surface water supplies for M&I uses and using existing diversion/intake facilities. The Off-site Water Facilities would involve only a minor change in operation for the CVP service systems to deliver water to the City under an M&I schedule instead of NCMWC under an agricultural delivery schedule. As provided in Section 3B.9, "Hydrology and Water Quality – Water," these changes would be less than significant and could entail desirable benefits. The assigned CVP water would continue to be stored in reservoirs north of the Delta until needed by the City. Based on these considerations, operation of the Off-site Water Facility Alternative would be **consistent** with operational objectives for Reclamation (e.g., flow objectives) as they relate to the continued operation of the CVP north of the Delta. For these reason, no inconsistencies with Federal plans and polices adopted for the purposes for avoiding or mitigating significant environmental effects would occur under the No USACE Permit Alternative, Proposed Off-site Water Facility Alternative and the **direct** and **indirect** impact would be **less than significant** with adopted plans and policies. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

IMPACT 3B.10-2 Conflict with Applicable Local Agency Land Use Plans, Policies, or Regulations. *Implementation of the Off-site Water Facility Alternatives could conflict with an applicable land use plan, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect.*

NCP, PA

Under this alternative, new structural features for the Off-site Water Facilities would be limited outside the Folsom SPA (e.g., underground pipelines) and contained within the Folsom SPA (e.g., On-Site WTP) and integrated into the Freeport Project (e.g., existing permitted diversion). From these perspectives, it is reasonable to conclude that the location of the structural facilities water supply for the No USACE Permit and Proposed Off-site Water Facility Alternative would be consistent with County and City General Plan land use policies adopted for the purposes of mitigating or avoiding significant environmental impacts (e.g., land use incompatibility). Similarly, this alternative would be **consistent** with LAFCo's general policy of siting urban forms of development, including the WTP, within a City's sphere of influence or the Folsom SPA. Additionally, the On-site WTP would be required to adhere to the policies and guidelines set forth in the Folsom Specific Plan as they pertain to development setbacks, height restrictions, and access. Based on these considerations, **direct** or **indirect** impacts would be **less than significant**. ***[Similar]***

Beyond the conveyance pipeline, the Off-site pump station would likely be the most substantial improvement outside the Folsom SPA. This facility would be constructed within close proximity to the Freeport bifurcation and would require a small easement, which is assumed to be within 200-foot corridor study area under consideration. This facility would likely be subject to the County's use requirements and could require a use permit. Given the small size of the facility and land area requirements, its placement along Vineyard or Gerber Roads would not present a substantial inconsistency with existing land use patterns and, from a planning context, impacts would be **less than significant**. Nuisance related issues are addressed in the other corresponding resource sections as provided in the "Water – B" portions of Chapter 3. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

1, 1A, 3, and 3A

The main distinguishing feature for these alternatives from the No USACE Permit Alternative and Proposed Off-site Water Facility Alternative is that they would require the City to annex the White Rock WTP site to within its jurisdiction or seek development entitlements through the County to enable for construction of the WTP. To annex the White Rock WTP site, the City would be required to amend its currently adopted sphere of influence prior to annexing the property prior to pre-zoning the White Rock WTP site to public use. Annexation of the White Rock WTP would be subject to LAFCo approval and would need to be included as part of the City's proposed Corporation Yard application, if pursued, for the sphere of influence amendment. Ultimate approval from LAFCo is not guaranteed given several factors. First, annexation of agriculturally designated land by the City is generally discouraged; however, emphasis is typically placed on the land's productivity, which at this time, the current use is limited to grazing. Secondly, as shown in Exhibit 3B.10-1, the White Rock WTP site is located outside the County USB, with urban-type uses generally discouraged. Lastly, the annexation and development of the WTP would require cancellation of a Williamson Act Contract, currently undergoing the non-renewal process. These **direct** and **indirect** impacts would be **inconsistent** with LAFCo's adopted plans and policies and considered **significant**. ***[Greater]***

The City's WTP would be considered an institutional use under the adopted County General Plan and could, under certain circumstances, be allowed within the AG-80 zone subject to a use permit from the County. Goals and policies applied to the agricultural use focus on avoiding the placement of urban-type land uses, which may

be disruptive to the agricultural economy, near agriculturally zoned lands. As the WTP is a non-sensitive, institutional use, its operations would not be disruptive to adjacent grazing, aggregate mining, and OHV uses. Likewise, these adjacent activities would not be disruptive to typical operations at a WTP. However, ultimate approval would or a use permit would be the discretion of Sacramento County and the City would be subject to any conditions of use. However, the WTP under these alternatives would be constructed outside the current confines of the County USB and, therefore, there is no guarantee the County would approve the City's application. This **inconsistency** with the County's General Plan combined with uncertainties regarding whether the County would approve the City's application within the necessary time frame are considered **significant direct** impacts. ***[Greater]***

Mitigation Measure 3B.10-2: Acquire Development Approvals for Off-site WTPs.

The City shall implement one of the two following options to enable development of the White Rock WTP under Off-site Water Facility Alternatives 1, 1A, 3, and 3A:

(1) Annexation and Pre-Zoning to Public Use. The City shall file an application with Sacramento LAFCo to amend its sphere of influence to include the White Rock WTP and City Corporation Yard, if applicable. The application shall include a statement describing that the sphere of influence amendment is necessary to ensure the provision of adequate water supply, distribution, and treatment for planned development with the Folsom SPA. Subject to LAFCo approval of the sphere of influence amendment, the City shall prepare an application to annex and prezone the White Rock WTP site for Public Use. As part of the White Rock WTP site's design, spacing opportunities between the WTP facilities and adjacent land use shall be maximized to encourage open space continuity and disruption to adjacent agricultural areas. Prior the annexation approval, the City shall provide LAFCo with the following: (a) dedications of rights-of-way; (b) improvements for vehicle access; (c) the placement of structures and their associated height; and (d) landscaping/open space for the protection of adjoining and nearby properties.

or

(2) Obtain County Use Permit or General Plan Amendment. The City shall file an application with Sacramento County for a Use Permit to allow the operation of the proposed WTP within the AG-80 zone. The City shall comply with the conditions of the Use Permit, so that the WTP site is developed consistent with County requirements in terms of the following: (a) dedications of right-of-way; (b) improvements for vehicle access; (c) the placement of structures and their associated height; and (d) landscaping for the protection of adjoining and nearby properties. Alternatively, the City may file an application for a General Plan Amendment and Rezone to designate the White Rock WTP site for Public Use. In addition to complying with the requirements of the Public zone, the City shall develop the site consistent with the County's for the following: (a) dedications of right-of-way; (b) improvements for vehicle access; (c) the placement of structures and their associated height; and (d) landscaping for the protection of adjoining and nearby properties.

Implementation: City of Folsom Utilities Department

Timing: Prior to acquisition and development of the Off-site WTP

Enforcement:
1. For annexation and sphere of influence applications: Sacramento County LAFCo.
2. For the entitlement and General Plan applications through Sacramento County: Sacramento County Planning and Community Development Department.

2, 2A, and 2B

Under Off-site Water Facility Alternatives 2, 2A, and 2B, the City would purchase capacity within SCWA's Vineyard SWTP, thereby consolidating treatment operations at one location and no new WTP would be required. With purchased capacity at the Vineyard SWTP, the construction of a new WTP would not be required and, therefore, a conditional use permit from the County or SOI amendment through LAFCo would not be required for these Off-site Water Facility Alternatives. Additionally, pumping facilities would likely be located on the Vineyard SWTP or Douglas Tanks site and, therefore, the **direct** and **indirect** impacts related to land use planning and planning consistency are **consistent** with adopted plans and policies and **less than significant**. ***[Lesser]***

Mitigation Measure: No mitigation measures are required.

4 and 4A

Similar to Alternative 1, Off-site Water Facility Alternatives 4 and 4A would involve the construction of a new WTP, but at a different location. The Folsom Boulevard WTP site is located south of Folsom Boulevard and currently designated under the County General Plan as Industrial. Additionally, the Folsom Boulevard WTP is located within the County's USB. The operation of the WTP within this designation and associated zone is considered a permitted use. In this context, the placement of a WTP at this location would generally be **consistent** with the County's General Plan and **direct** and **indirect** impacts would be **less than significant**. ***[Similar]***

Under these alternatives, the WTP would be located adjacent to the planned Westborough Planning Area for the City of Rancho Cordova. A development proposal for the Westborough at Easton was submitted to that City and the associated CEQA documentation is currently in preparation. Based on information provided in the NOP for the Westborough at Easton project, the WTP site would be situated within the vicinity of uses including Public, Park, and Medium and High Density. Additionally, these alternatives would involve similar planning issues related to LAFCo's approval for annexation and the County development entitlement process. These factors in conjunction with the close proximity of planned residential uses present **potentially inconsistent** land use planning issues. ***[Greater]***

Mitigation Measure: Implement Mitigation Measure 3B.10-2.

Implementation of Mitigation Measure 3B.10-1 could reduce potentially significant impacts related to inconsistencies with existing land use policies and plans under Off-site Water Facility Alternatives 1, 1A, 3, 3A, 4, and 4A to a less-than-significant level by requiring use permits or annexation to the City prior to the construction and operation of the White Rock and Folsom Boulevard WTPs. However, given that discretionary approval conflict would be required by either LAFCo or the corresponding local jurisdiction (e.g., Sacramento County), the City is unable to guarantee that the prescribed mitigation measure reduce inconsistencies associated with potential conflicts with LAFCo's policies and Sacramento County's USB to a less-than-significant level. Therefore, this impact remains **potentially significant and unavoidable** for Off-site Water Facility Alternatives 1, 1A, 3, and 3A, 4 and 4A. Impacts under Alternatives 2, 2A, and 2B would be **less than significant**.

IMPACT 3B.10-3 Conversion of Important Farmland to Nonagricultural Uses. *Implementation of the Off-site Water Facility Alternatives could result in the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural uses.*

NCP, PA, 1, and 1A

As described in Chapter 2, "Alternatives," the conveyance pipeline alignments under Alternatives PA, 1, and 1A would generally follow existing roadways from the Freeport Project bifurcation. Based on review of aerial

photographs and field reconnaissance, these agricultural areas include dry land farming, grazing, and small patches of irrigated farmland. No important farmlands are identified within the conveyance alignment under these alternatives except for the area between the Freeport bifurcation and Grant Line Road. This area contains several small, fragmented areas of Unique Farmland and Farmland of Statewide Importance. These lands would be temporarily impacted during construction. However, following pipeline installation, roadways within these areas would be restored to preproject conditions, thereby ensuring continued agricultural cultivation.

In terms of the WTP site, these Off-site Water Facility Alternatives would require acquisition and conversion of up to 10 acres of grazing land to nonagricultural use, according to maps prepared pursuant to the FMMP. Grazing land is not considered Important Farmland and, therefore, the conversion of 10 acres would not result in a significant impact. Therefore, implementation of the Off-site Water Facilities would not convert important farmland to nonagricultural uses. The On-Site WTP is located on similarly designated land within the Folsom SPA and its construction would result in a similar impact. This **direct** impact would be **less than significant**. ***[Similar]***

The Off-site Water Facilities would increase water supply to the City of Folsom, which in turn could facilitate and remove an obstacle to urban growth within the City's adopted sphere of influence. Chapter 4, "Other Required Analyses," provides a detailed discussion of the growth-inducement potential and the related secondary effects of growth of the Off-site Water Facilities, which includes the indirect impact related to potential conversion of farmland and open space.

Impacts to Natomas Central Mutual Water Company Service Area

The assignment of surface water from NCMWC to the City of Folsom would not conflict with or prevent the continuation of existing agricultural uses within NCMWC's service area. Based on a study prepared by Wagner and Bonsignore (2007) and included in Appendix M-II, the amount of water transferred to the City would not adversely affect current cropping patterns within the NCMWC. As shown in Table 3B.10-1, the NCMWC has experience a crop reduction of over 5,000 acres in the crop acreage between 2004 and 2007. Based on current development patterns, this decline is expected to continue over time but at a slower rate. Notwithstanding this current pattern of development, even if rice production were to increase in the future, landowners within the NCMWC would have sufficient surface water supplies to service the land available for planting in most years and no supplemental groundwater during normal conditions would be required.

Similar to existing conditions, landowners would continue to also have the option to pump groundwater in critically dry years. Based on these considerations, the Off-site Water Facility Alternatives would not limit the availability of surface water for NCMWC's service area or require a long-term or permanent fallowing of agricultural lands within the NCMWC to facilitate the assignment of a portion of NCMWC's CVP water supply for the Off-site Water Facility Alternatives. Therefore, implementation of the Off-site Water Facilities would not convert Important Farmland to nonagricultural uses and this **direct** impact is considered **less than significant**. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

2, 2A, 2B, 3, 3A, 4, and 4A

As described in Chapter 2, "Alternatives," the conveyance pipeline alignments under the above alternatives would generally follow existing roadways from the Freeport Project bifurcation to the Vineyard SWTP under Alternatives 2, 2A, and 2B; to the White Rock WTP under Alternatives 3 and 3A; or to the Folsom Boulevard WTP under Alternatives 4 and 4A. Areas north of Vineyard Road are generally already planned for future urban development and are currently not classified as Important Farmlands. The Folsom Boulevard WTP site is classified as urban and, therefore, is not considered Important Farmland. Beyond these differences, these alternatives would have the same impact as described for Alternatives 1 and 1A. Therefore, implementation of the

Off-site Water Facilities would not convert Important Farmland to nonagricultural uses and the **direct** impact would be **less than significant**. ***[Lesser]***

The Alternatives 2, 2A, 2B, 3, 3A, 4, and 4A would increase water supply to the City of Folsom, which in turn could facilitate and remove an obstacle to urban growth within the City's adopted sphere of influence. Chapter 4, "Other Statutory Requirements," provides a detailed discussion of the growth-inducement potential and the related secondary effects of growth of the Off-site Water Facilities, which includes the **indirect** impact related to potential conversion of farmland and open space.

Mitigation Measure: No mitigation measures are required.

IMPACT 3B.10-4 Cancellation of Existing On-site Williamson Act Contracts. *Construction of the Off-site Water Facility Alternatives could conflict with lands under Williamson Act contracts; thereby potentially resulting in cancellation of those contracts.*

NCP, PA, 1, and 1A

Construction of the conveyance pipeline under Alternatives PA, 1, and 1A would be located primarily within existing roadway right-of-way with the exception of a small section of agricultural land between the Freeport bifurcation and Grant Line Road and, under Alternative 1A between Prairie City Road and the northern terminus of Grant Line Road. This would require a temporary construction easement and a permanent easement. No existing Williamson Act Contracts are on file for areas bordering the conveyance alignment under Alternatives PA, 1, and 1A.

Construction of the WTP under Alternatives PA, 1, 1A, 3, 3A, 4, and 4A would occur on land currently protected by a Williamson Act Contract, but as described in the setting section, that land is currently in non-renewal status. For instances where the Off-site Water Facilities would affect contracted lands, such as the WTP site, the Williamson Act has specific provisions for acquisition of contracted land for public improvements. Article 6 of the Williamson Act (California Government Code Sections 51290–51295) provides that a public entity may acquire land within an agricultural preserve for a public improvement through eminent domain or in lieu of eminent domain, and that this action terminates the contract.

However, given that these alternatives would necessitate the premature cancellation of the existing Williamson Act non-renewal process, these alternatives would be in conflict with the general intent of the Williamson Act. This **indirect** impact would be **significant**. ***[Similar]***

Impacts to Natomas Central Mutual Water Company Service Area

Implementation of the Off-site Water Facilities would not conflict with existing agricultural zoning or Williamson Act contracts within the NCMWC's service area since no change in existing land use would occur. As discussed in Impact 3B.10-2 above, implementation of the Off-site Water Facilities would not limit the availability of surface water for NCMWC's service area or require a long-term or permanent fallowing of agricultural lands within the NCMWC to facilitate the Assignment Agreement. Therefore, implementation of the Off-site Water Facilities would not adversely affect lands under the provisions of a Williamson Act contract or result in premature cancellation of existing contracts. This **direct** impact is considered **less than significant**. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure: No Feasible Mitigation Measures are Available.

2, 2A, 2B, 3, 3A, 4, and 4A

Large tract of Williamson Act contracted land is located east of Eagles Nest Road and along the Alternatives 2, 2A, 2B, 3, 3A, 4, and 4A alignments. However, given that the conveyance pipeline would be installed underground and along the periphery of these contracted lands, the Off-site Water Facilities would not have a substantial effect on productivity of the land, existing zoning, or would not require contract cancellation. Under Off-site Water Facility Alternative 4 and 4A, the Folsom Boulevard WTP would be constructed within an existing urbanized area just east of the City of Rancho Cordova. This area does not contain any agriculturally zoned properties or Williamson Act Contracts. Based on these considerations, the **direct** and **indirect** impacts to Williamson Act contracted lands is considered **less than significant**. ***[Lesser]***

Mitigation Measure: No mitigation measures are required.

Implementation of Alternatives PA, 1, and 1A would conflict with existing off-site Williamson Act contracts or result in the cancellation of such contracts on lands south of the project site. No feasible mitigation measures are available to reduce impacts associated with potential conflicts or cancellation of these off-site Williamson Act contracts to a less-than-significant level. Therefore, this impact remains **potentially significant and unavoidable**.

IMPACT 3B.10-5 Potential Temporary Disruptions to Existing Agricultural Operations. *Implementation of the Off-site Water Facilities could potentially affect existing agricultural operations and result in a loss in agricultural productivity.*

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A

The conveyance pipeline options under these alternatives would primarily be located within existing road rights-of-way, although construction areas may extend into adjacent lands used for agriculture. Although the pipeline would be buried and installed in close proximity to the roadway, construction activities may require the removal of existing irrigation structures and topsoil. The temporary disruption caused by installation of the conveyance pipeline and auxiliary structures has the potential to be significant depending on its ultimate placement. If not sufficiently buried, future use of tillage equipment, drainage facilities, or other agricultural activities within the easement may not be possible thereby resulting in a loss in agricultural productivity. Therefore, this **direct** temporary impact would be **significant**. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure 3B.10-5: Restore Affected Agricultural Lands to Preproject Conditions.

The City shall consult with all affected land owners where the selected alignment would cross Important Farmland. As part of the easement acquisition process, the City shall demonstrate a good-faith effort to negotiate with affected landowners an agreed-upon compensation for the loss of any existing pasture and/or row crops currently in production. During these consultations the City shall also, in conjunction with landowners' input, identify areas along the right-of-way that could be left in agricultural production as well as locations for access gates to allow for city staff access. Access gate locations shall be included in the final design plans for the Off-site Water Facilities. Compensation for the loss of crops and associated revenues shall be up to the provisions of law.

Implementation: City of Folsom Utilities Department

Timing: Immediately following construction

Enforcement: Sacramento County Community Development and Planning Department

Implementation of Mitigation Measure 3B.10-4 would reduce significant impacts related to disruption of existing agricultural operations under the Proposed Off-site Water Facility Alternative and Off-site Water Facility

Alternatives 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A to a less-than-significant level by restoring agricultural land within the easement area to preproject conditions.

3B.10.4 RESIDUAL SIGNIFICANT IMPACTS

No conversion of Important Farmland would occur under the Off-site Water Facility Alternatives. Operation of the Off-site Water Facilities would generally be consistent with applicable Federal, state, regional, and local plans and policies. Based on these circumstances, the Off-site Water Facility Alternatives would not result in any residual significant and unavoidable impacts to land use and agricultural resources.

With the implementation of the mitigation under 3B.10-1, issues related to consistency of the WTP with local land use policies and LAFCo's policies and procedures would be reduced to a less-than-significant level for Alternatives 2, 2A, 2B, 3, 3A, 4, and 4A. This impact would remain significant and unavoidable under Alternatives PA, 1, and 1A.

Impacts related to the cancellation of existing on-site Williamson Act contracts to accommodate the WTP in Alternatives PA, 1, and 1A would be significant and unavoidable and no feasible mitigation measures are available to reduce impacts to a less-than-significant level. In addition, these alternatives could conflict with existing off-site Williamson Act contracts or result in the cancellation of such contracts on lands south of the project site and no feasible mitigation measures are available to reduce this impact to a less-than-significant level.

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3A.11 NOISE – LAND

3A.11.1 AFFECTED ENVIRONMENT

ACOUSTIC FUNDAMENTALS

Acoustics is the scientific study that evaluates perception, propagation, absorption, and reflection of sound waves. Sound is a mechanical form of radiant energy, transmitted by a pressure wave through a solid, liquid, or gaseous medium. Sound that is loud, disagreeable, unexpected, or unwanted is generally defined as noise; consequently, the perception of sound is subjective in nature, and can vary substantially from person to person. Common sources of environmental noise and noise levels are presented in Exhibit 3A.11-1.

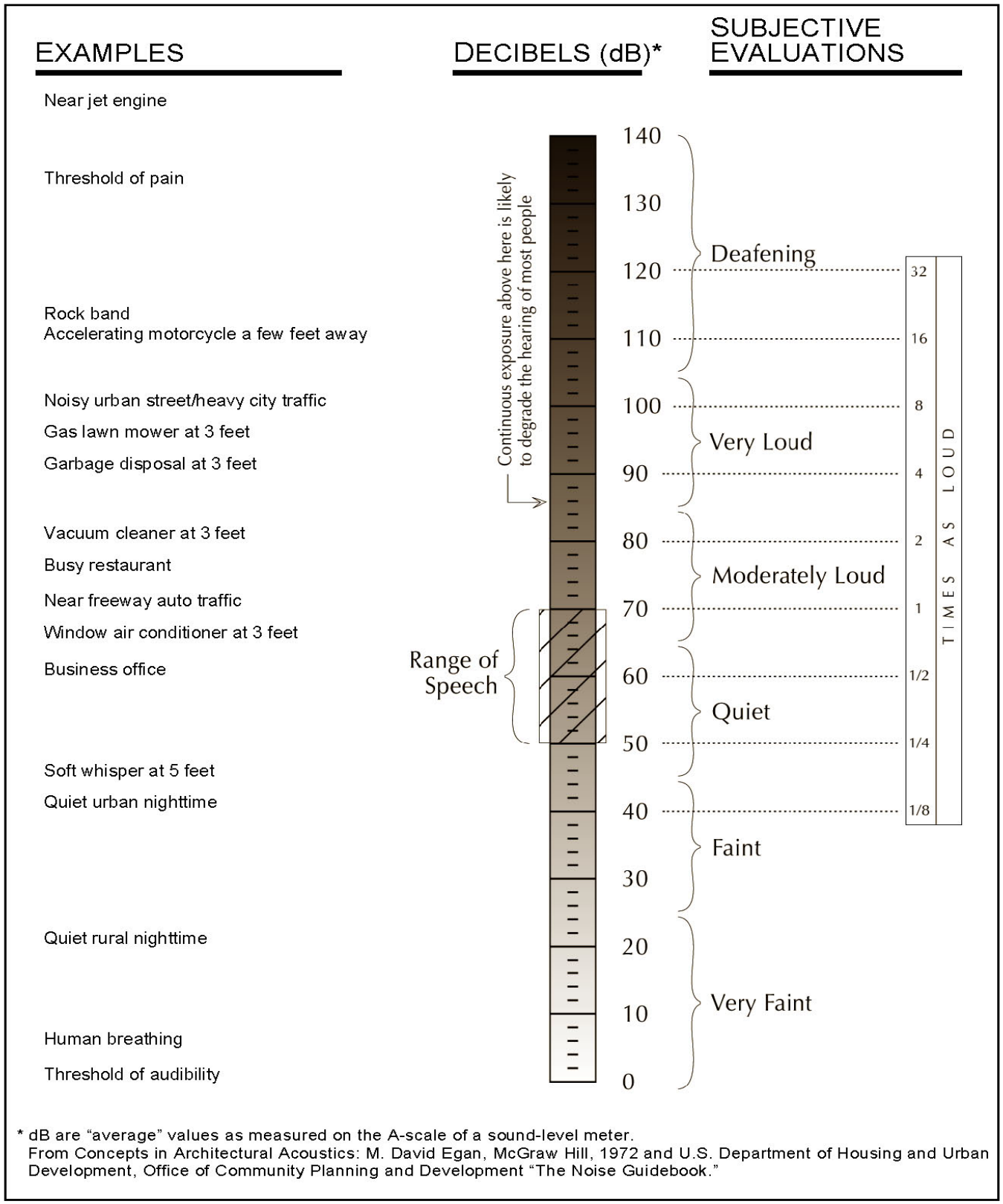
A sound wave is initiated in a medium by a vibrating object (e.g., vocal chords, the string of a guitar, the diaphragm of a radio speaker). The wave consists of minute variations in pressure, oscillating above and below the ambient atmospheric pressure. The number of pressure variation cycles occurring per second is referred to as the frequency of the sound wave and is expressed in hertz (Hz).

Directly measuring sound pressure fluctuations would require the use of a very large and cumbersome range of numbers. To avoid this and have a more useable numbering system, the decibel (dB) scale was introduced. A sound level expressed in decibels is the logarithmic ratio of two like pressure quantities, with one pressure quantity being a reference sound pressure. For sound pressure in air the standard reference quantity is generally considered to be 20 micropascals, which directly corresponds to the threshold of human hearing. The use of the decibel is a convenient way to handle the million-fold range of sound pressures to which the human ear is sensitive. A decibel is logarithmic; it does not follow normal algebraic methods and cannot be directly added. For example, a 65 dB source of sound, such as a truck, when joined by another 65 dB source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by 3 dB). A sound level increase of 10 dB corresponds to 10 times the acoustical energy, and an increase of 20 dB equates to a 100 fold increase in acoustical energy.

The loudness of sound perceived by the human ear depends primarily on the overall sound pressure level and frequency content of the sound source. The human ear is not equally sensitive to loudness at all frequencies in the audible spectrum. To better relate overall sound levels and loudness to human perception, frequency-dependent weighting networks were developed. The standard weighting networks are identified as A through E. There is a strong correlation between the way humans perceive sound and A-weighted sound levels (dBA). For this reason the dBA can be used to predict community response to noise from the environment, including noise from transportation and stationary sources. Sound levels expressed as dB in this section are A-weighted sound levels, unless noted otherwise.

Noise can be generated by a number of sources, including mobile sources (transportation noise sources) such as automobiles, trucks, and airplanes and stationary sources (nontransportation noise sources) such as construction sites, machinery, and commercial and industrial operations. As acoustic energy spreads through the atmosphere from the source to the receiver, noise levels attenuate (decrease) depending on ground absorption characteristics, atmospheric conditions, and the presence of physical barriers (walls, building façades, berms). Noise generated from mobile sources generally attenuate at a rate of 4.5 dB per doubling of distance. Stationary noise sources spread with more spherical dispersion patterns that attenuate at a rate of 6 to 7.5 dB per doubling of distance.

Atmospheric conditions such as wind speed, turbulence, temperature gradients, and humidity may additionally alter the propagation of noise and affect levels at a receiver. Furthermore, the presence of a large object (e.g., barrier, topographic features, and intervening building façades) between the source and the receptor can provide significant attenuation of noise levels at the receiver. The amount of noise level reduction or “shielding”



* dB are "average" values as measured on the A-scale of a sound-level meter.
From Concepts in Architectural Acoustics: M. David Egan, McGraw Hill, 1972 and U.S. Department of Housing and Urban Development, Office of Community Planning and Development "The Noise Guidebook."

Source: Data compiled by AECOM in 2009

Common Noise Sources and Levels **Exhibit 3A.11-1**

provided by a barrier primarily depends on the size of the barrier, the location of the barrier in relation to the source and receivers, and the frequency spectra of the noise. Natural barriers such as berms, hills, or dense woods, and human-made features such as buildings and walls may be used as noise barriers.

Noise Descriptors

The intensity of environmental noise fluctuates over time, and several different descriptors of time-averaged noise levels are used. The selection of a proper noise descriptor for a specific source depends on the spatial and temporal distribution, duration, and fluctuation of both the noise source and the environment. The noise descriptors most often used to describe environmental noise are defined below.

- **L_{max} (Maximum Noise Level):** The highest A/B/C weighted integrated noise level occurring during a specific period of time.
- **L_{min} (Minimum Noise Level):** The lowest A/B/C weighted integrated noise level during a specific period of time.
- **Peak:** The highest weighted or unweighted instantaneous peak-to-peak value occurring during a measurement period.
- **L_n (Statistical Descriptor):** The noise level exceeded n% of a specific period of time, generally accepted as an hourly statistic. An L_{10} would be the noise level exceeded 10% of the measurement period.
- **L_{eq} (Equivalent Noise Level):** The energy mean (average) noise level. The steady-state sound level that, in a specified period of time, contains the same acoustical energy as a varying sound level over the same time period.
- **L_{dn} (Day-Night Noise Level):** The 24-hour L_{eq} with a 10-dB "penalty" applied during nighttime noise-sensitive hours, 10 p.m. through 7 a.m. The L_{dn} attempts to account for the fact that noise during this specific period of time is a potential source of disturbance with respect to normal sleeping hours.
- **CNEL (Community Noise Equivalent Level):** Similar to the L_{dn} described above, but with an additional 5-dB "penalty" for the noise-sensitive hours between 7 p.m. to 10 p.m., which are typically reserved for relaxation, conversation, reading, and watching television. If the same 24-hour noise data are used, the CNEL is typically 0.5 dB higher than the L_{dn}.
- **SEL (Sound Exposure Level):** The cumulative exposure to sound energy over a stated period of time.

Effects of Noise on Humans

Excessive and chronic exposure to elevated noise levels can result in auditory and non-auditory effects on humans. Auditory effects of noise on people are those related to temporary or permanent hearing loss caused by loud noises. Non-auditory effects of exposure to elevated noise levels are those related to behavioral and physiological effects. The non-auditory behavioral effects of noise on humans are associated primarily with the subjective effects of annoyance, nuisance, and dissatisfaction, which lead to interference with activities such as communications, sleep, and learning. The non-auditory physiological health effects of noise on humans have been the subject of considerable research attempting to discover correlations between exposure to elevated noise levels and health problems, such as hypertension and cardiovascular disease. The mass of research infers that noise-related health issues are predominantly the result of behavioral stressors and not a direct noise-induced response. The extent to which noise contributes to non-auditory health effects remains a subject of considerable research, with no definitive conclusions.

The degree to which noise results in annoyance and interference is highly subjective and may be influenced by several non-acoustic factors. The number and effect of these non-acoustic environmental and physical factors vary depending on individual characteristics of the noise environment such as sensitivity, level of activity, location, time of day, and length of exposure. One key aspect in the prediction of human response to new noise environments is the individual level of adaptation to an existing noise environment. The greater the change in the noise levels that are attributed to a new noise source, relative to the environment an individual has become accustomed to, the less tolerable the new noise source will be perceived.

With respect to how humans perceive and react to changes in noise levels, a 1 dB increase is imperceptible, a 3 dB increase is barely perceptible, a 6 dB increase is clearly noticeable, and a 10-dB increase is subjectively perceived as approximately twice as loud (Egan 1988). These subjective reactions to changes in noise levels was developed on the basis of test subjects' reactions to changes in the levels of steady-state pure tones or broad-band noise and to changes in levels of a given noise source. It is probably most applicable to noise levels in the range of 50 to 70 dB, as this is the usual range of voice and interior noise levels. For these reasons, a noise level increase of 3 dB or more is typically considered substantial in terms of the degradation of the existing noise environment.

Vibration

Vibration is the periodic oscillation of a medium or object with respect to a given reference point. Sources of vibration include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) and those introduced by human activity (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, (e.g., operating factory machinery or transient in nature, explosions). Vibration levels can be depicted in terms of amplitude and frequency, relative to displacement, velocity, or acceleration.

Vibration amplitudes are commonly expressed in peak particle velocity (PPV) or root-mean-square (RMS) vibration velocity. PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is typically used in the monitoring of transient and impact vibration and has been found to correlate well to the stresses experienced by buildings (Federal Transit Administration [FTA] 2006: **7**-1 – 7-8, California Department of Transportation [Caltrans] 2004: 5-7). PPV and RMS vibration velocity are normally described in inches per second (in/sec).

Although PPV is appropriate for evaluating the potential for building damage, it is not always suitable for evaluating human response. The response of the human body to vibration relates well to average vibration amplitude; therefore, vibration impacts on humans are evaluated in terms of RMS vibration velocity. Similar to airborne sound, vibration velocity can be expressed in decibel notation as vibration decibels (VdB). The logarithmic nature of the decibel serves to compress the broad range of numbers required to describe vibration.

Typical outdoor sources of perceptible groundborne vibration include construction equipment, steel-wheeled trains, and traffic on rough roads. Although the effects of vibration may be imperceptible at low levels, effects may result in detectable vibrations and slight damage to nearby structures at moderate and high levels, respectively. At the highest levels of vibration, damage to structures is primarily architectural (e.g., loosening and cracking of plaster or stucco coatings) and rarely results in damage to structural components. The range of vibration that is relevant to this analysis occurs from approximately 50 VdB, which is the typical background vibration-velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings (FTA 2006:8-1 – 8-8).

EXISTING NOISE ENVIRONMENT

Project Location

Land uses near the SPA include open space and agricultural uses to the south; residential land uses to the east and north, the Aerojet General-Corporation rocket engine manufacturing and test facility to the west, and the Prairie

City State Recreational Vehicle Area (SRVA) facility to the southwest. Mather Airport is located approximately 9 miles west of the SPA.

Ambient-Noise Survey

An ambient-noise survey was conducted by AECOM in February 2009, to document the existing noise environment at various locations in the project vicinity. Noise level measurements were taken in accordance with American National Standards Institute (ANSI) standards at five locations using Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meters (SLMs). The SLMs were calibrated before and after use with an LDL Model CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the ANSI for Type 1 SLMs. Ambient-noise survey locations are shown in Exhibit 3A.11-2. The L_{eq}, L_{max}, and L_{50} values taken at each ambient noise measurement location are presented in Table 3A.11-1.

Table 3A.11-1
Summary of Measured Ambient-Noise Levels

Site	Location	Start Date and Time	Average Measured Hourly Noise Levels, dB						
			L_{dn}/CNEL	Daytime (7 a.m.–10 p.m.)			Nighttime (10 p.m.–7 a.m.)		
				L_{eq}	L_{50}	L_{max}	L_{eq}	L_{50}	L_{max}
A	White Rock Road	2/18/2009, 12 p.m.	67.6	64.8	58.1	79.3	60.2	40.9	76.8
B	U.S. 50	2/18/2009, 1 p.m.	72.5	70.0	69.4	80.9	64.9	61.7	75.3
C	Prairie City Road	2/18/2009, 4 p.m.	60.0	58.1	52.5	73.8	51.9	39.9	67.5
D	Scott Road	2/19/2009, 3 p.m.	64.9	63.5	55.0	78.2	56.4	44.7	72.4
E	U.S. 50	2/20/2009, 4 p.m.	63.2	61.6	59.8	70.8	55.0	52.0	66.0

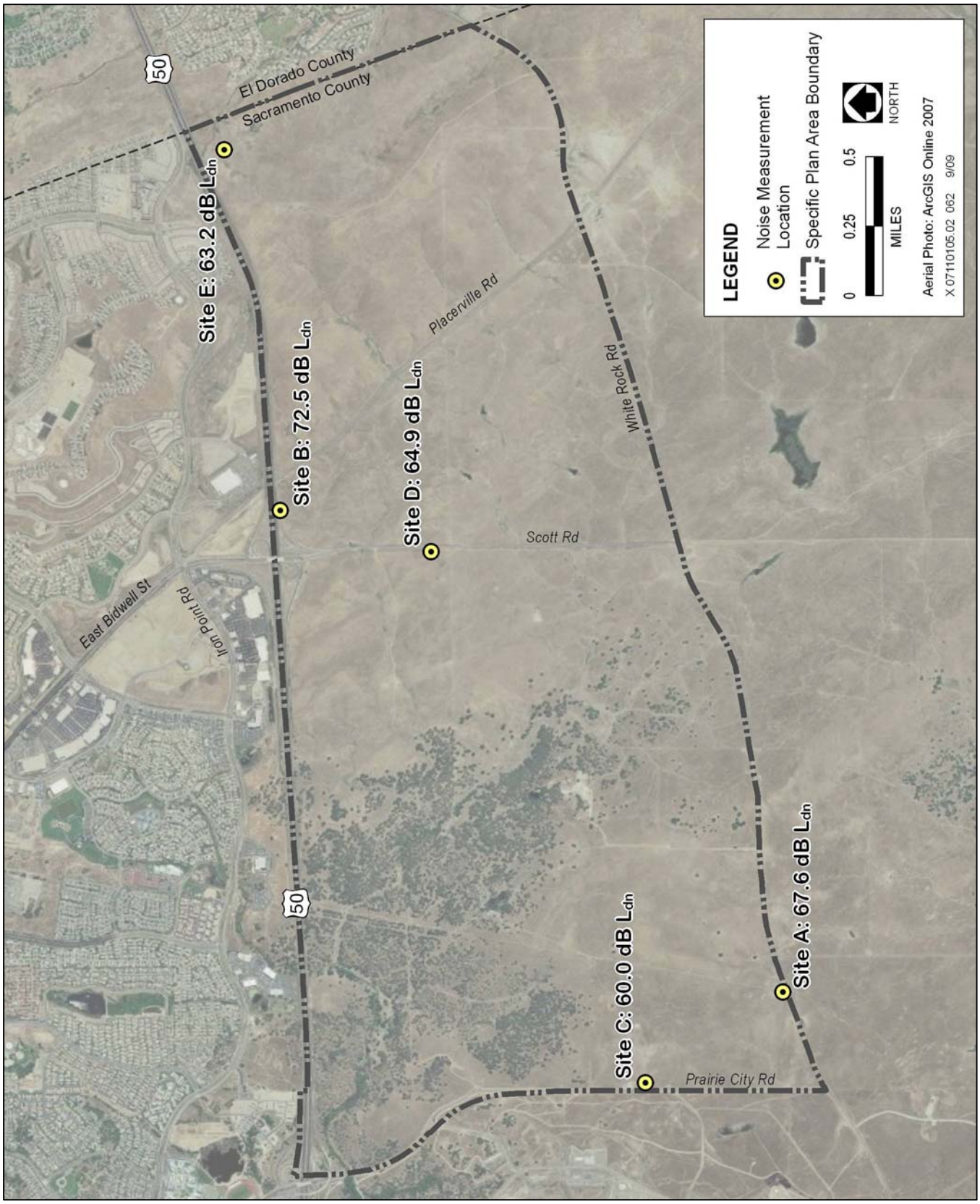
Notes: CNEL = Community Noise Equivalent Level; dB = A-weighted decibels; L_{dn} = day-night average noise level; L_{eq} = the equivalent hourly average noise level; L_{50} = the noise level exceeded 50% of a specific period of time; L_{max} = maximum noise level
Monitoring locations correspond to those depicted on Exhibit 3A.11-2.
Time refers to the beginning hour of the measurement. All measurement data presented are for one contiguous 24-hour period.
Source: Data compiled by AECOM in 2009

Average daytime hourly noise levels measured during the survey ranged from approximately 58 to 70 dB L_{eq}, with maximum daytime noise levels that ranged from 71 to 81 dB $L_{max.}$ The primary noise source affecting noise measurement locations was vehicular traffic on U.S. 50 and White Rock Road, depending on the proximity of the measurement location to the roadway. Meteorological conditions during the measurement period were favorable for reliable noise measurements, with clear skies, temperatures ranging from 69.2 degrees °F to 72.4°F, and light winds from the west at 0 to 5 miles per hour (mph).

Existing Noise Sources

The existing noise environment in and surrounding the SPA is influenced primarily by surface-transportation noise emanating from vehicular traffic on area roadways. Vehicle traffic noise levels are attributed to U.S. 50, Placerville Road, Scott Road, Prairie City Road, and White Rock Road.

The ambient noise levels in the SPA are not generally influenced by noise generated by nearby commercial industrial and recreational land uses, including the Aerojet General Corporation facility located adjacent to the eastern boundary of the SPA or the Prairie City SRVA located southwest of the SPA. However, occasional noise from outdoor testing of engines, fans, and other mechanical devices at the Aerojet facility and from vehicles using the Prairie City SRVA may influence noise levels in the SPA.



Source: Prepared by AECOM in 2009

Ambient Noise Measurement Locations **Exhibit 3A.11-2**

Noise levels associated with these transportation and nontransportation noise sources, as perceived within the vicinity of the SPA, are discussed separately below.

Traffic Noise

Existing traffic noise levels were calculated for roadway segments in the project vicinity using the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (RD-77-108) (FHWA 1978), and traffic data provided in the traffic impact study prepared for the project. The FHWA model is based on the California vehicle noise (CALVENO) reference noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and ground attenuation factors. Truck usage and vehicle speeds on study area roadways were estimated from field observations and data from Caltrans where available (Caltrans 2008: 146).

Table 3A.11-2 summarizes the modeled existing traffic noise levels at 50 to 100 feet from the centerline of each major roadway in the project vicinity, depending on the proposed setback under the Proposed Project and each of the other four action alternatives, and lists distances from each roadway centerline to the 60-dB, 65-dB, and 70-dB L_{dn}/CNEL traffic noise contours. Traffic noise modeling results are based on existing average daily traffic (ADT) volumes from the traffic analysis and assumes no natural or human-made shielding (e.g., vegetation, berms, walls, buildings). As shown in Table 3A.11-2, the location of the 60-dB L_{dn}/CNEL traffic noise contours along segments in the project vicinity, except for those where the contour falls within the roadway right-of-way, range from 43 to 15,349 feet from the centerline of the modeled roadways under existing conditions. The extent to which existing land uses in the project vicinity are affected by existing traffic noise depends on their respective proximity to the roadways and their individual sensitivity to noise.

Prairie City State Recreational Vehicle Area

The Prairie City SRVA is a facility managed by the California State Parks that serves recreational and competition users of off-road motorcycles, four wheel drive, and all-terrain vehicles (ATVs). The park is divided into areas that cater separately for four-wheel drive vehicles; motorcycles and ATVs; motocross; and off-road racing. The closest of these areas to the SPA is the four-wheel-drive area, which is located across the street from the southwest corner of the SPA.

Noise emissions from recreational off-road vehicles are governed in California by Assembly Bill (AB) 2274, Chapter 563, enacted in September 2002, and enforced by California State Parks. AB 2274 limits the noise level produced by recreational off-road vehicles manufactured after 1998 and vehicles defined as competition vehicles that were manufactured after 1986 to 96 dB at 20 inches from the exhaust pipe. It should be noted that during the ambient noise survey, off-road vehicles were audible in the SPA; however, noise attributable to the operation of off-road vehicles in the park could not be isolated and measured due to White Rock Road traffic noise levels dominating the immediate noise environment.

Aerojet General Corporation Facility

Aerojet land is located south of U.S. 50 between Mercantile Drive and Prairie City Road, west of the SPA. Primary noise-generating activities at this facility have historically been associated with the testing of rocket and high-performance aircraft engines for use in military and aerospace applications. GenCorp Realty Investments, Aerojet's parent company, is currently in the process of phasing out the testing of the large-diameter rocket and aircraft engines at this facility, although testing of smaller engines would continue (Gunderson, pers. comm., 2005). The 65- and 75-dB noise contours associated with the firing of smaller rocket engines (60,000 pounds of thrust) extend to approximately 7,920 and 4,224 feet, respectively, from the test stand. Additional on-site noise sources associated with this facility include industrial operations such as manufacturing, cleaning, maintenance, heating and cooling, and pollution control activities. Based on prior noise studies conducted at Aerojet, noise from these additional noise sources were not found to exceed County noise standards at nearby off-site receptors (County of Sacramento 1993).

Table 3A.11-2
Summary of Modeled Existing Traffic Noise Levels

Roadway Segment	Between		L_{dn}/CNEL (dB) at Approx. Road Corridor Boundary	Distance (feet) from Roadway Centerline to L_{dn}/CNEL (dB)		
	From	To		70	65	60
City of Folsom						
Folsom Boulevard	Glenn Drive	Blue Ravine Road	74.5	110	349	1,104
Folsom Boulevard	Mercantile Drive	Iron Point Road	74.9	119	376	1,189
Folsom Boulevard	Iron Point Road	U.S. 50	75.7	144	455	1,439
Prairie City Road	Blue Ravine Road	Iron Point Road	72.2	60	188	595
Prairie City Road	Iron Point Road	U.S. 50	72.5	64	201	635
Oak Avenue Parkway	East Bidwell Street	Iron Point Road	66.6	15	47	149
East Bidwell Street	Blue Ravine Road	Oak Avenue Parkway	74.6	118	373	1,179
East Bidwell Street	Oak Avenue Parkway	Broadstone Parkway	75.3	141	444	1,406
East Bidwell Street	Broadstone Parkway	Iron Point Road	76.0	165	521	1,649
East Bidwell Street	Iron Point Road	U.S. 50	76.9	202	637	2,016
Empire Ranch Road	Broadstone Parkway	Iron Point Road	62.7	6	19	60
Blue Ravine Road	Folsom Boulevard	Prairie City Road	71.3	44	139	439
Blue Ravine Road	Prairie City Road	Riley Street	71.3	43	137	432
Blue Ravine Road	Riley Street	East Bidwell Street	71.3	43	137	432
Blue Ravine Road	East Bidwell Street	Oak Avenue Parkway	70.9	40	126	397
Iron Point Road	Folsom Boulevard	Prairie City Road	72.0	61	193	611
Iron Point Road	Prairie City Road	Oak Avenue Parkway	72.6	70	222	702
Iron Point Road	Oak Avenue Parkway	Broadstone Parkway	70.4	42	133	421
Iron Point Road	Broadstone Parkway	East Bidwell Street	71.1	50	157	497
Iron Point Road	East Bidwell Street	Empire Ranch Road	63.4	8	25	78
Scott Road	U.S. 50	White Rock Road	65.4	17	55	173
Sacramento County						
Folsom Boulevard	Sunrise Boulevard	Mercantile Drive	71.7	73	232	734
Folsom Boulevard	Mercantile Drive	Hazel Avenue	70.4	55	174	550
Folsom Boulevard	Hazel Avenue	Aerojet Road	68.8	38	120	379
Folsom Boulevard	Aerojet Road	U.S. 50	69.9	49	154	486
Grant Line Road	White Rock Road	Centennial Road	70.7	59	186	589
Grant Line Road	Centennial Road	Douglas Road	70.7	59	186	589
Grant Line Road	Douglas Road	Keifer Boulevard	70.3	54	171	540
Grant Line Road	Keifer Boulevard	Jackson Road	69.8	47	149	472
Grant Line Road	Jackson Road (SR 16)	Sunrise Boulevard	68.9	39	122	386
Hazel Avenue	Greenback Lane	Madison Avenue	73.3	106	335	1,059
Hazel Avenue	Madison Avenue	Curragh Downs Drive	74.1	128	405	1,280
Hazel Avenue	Curragh Downs Drive	Gold Country Boulevard	74.4	138	436	1,379

Table 3A.11-2
Summary of Modeled Existing Traffic Noise Levels

Roadway Segment	Between		L_{dn}/CNEL (dB) at Approx. Road Corridor Boundary	Distance (feet) from Roadway Centerline to L_{dn}/CNEL (dB)		
	From	To		70	65	60
Hazel Avenue	Gold Country Boulevard	U.S. 50 Westbound ramp	74.7	149	471	1,490
Jackson Road (SR 16)	Grant Line Road	Dillard Road	72.4	88	277	877
Jackson Road (SR 16)	Dillard Road	Stonehouse Road	71.7	74	235	742
Prairie City Road	U.S. 50 eastbound ramp	Easton Valley Parkway	67.9	31	98	310
Prairie City Road	Easton Valley Parkway	White Rock Road	67.9	31	98	310
Scott Road (south)	White Rock Road	Latrobe Road	60.0	5	16	50
Stonehouse Road	Latrobe Road	Jackson Road (SR 16)	59.3	4	13	43
Sunrise Boulevard	Jackson Road	Grant Line Road	70.4	55	173	548
White Rock Road	Fitzgerald Road	Grant Line Road	66.0	20	62	197
White Rock Road	Grant Line Road	Prairie City Road	68.0	32	101	318
White Rock Road	Prairie City Road	Scott Road (south)	68.6	37	115	365
White Rock Road	Scott Road (south)	Oak Avenue Parkway	68.6	37	115	365
White Rock Road	Oak Avenue Parkway	Scott Road (north)	68.6	37	115	365
White Rock Road	Scott Road (north)	Placerville Road	67.4	27	87	274
White Rock Road	Placerville Road	Empire Ranch Road	68.2	33	103	327
White Rock Road	Empire Ranch Road	Carson Crossing Road	68.2	33	103	327
City of Rancho Cordova						
Douglas Road	Sunrise Boulevard	Grant Line Road	61.0	6	20	64
Sunrise Boulevard	U.S. 50 eastbound ramps	Folsom Boulevard	76.6	227	717	2,268
Sunrise Boulevard	Folsom Boulevard	White Rock Road	76.0	198	626	1,981
Sunrise Boulevard	White Rock Road	Douglas Road	72.7	93	293	926
Sunrise Boulevard	Douglas Road	Keifer Boulevard	71.7	74	233	738
Sunrise Boulevard	Keifer Boulevard	Jackson Road (SR 16)	72.8	96	304	961
White Rock Road	Zinfandel Drive	Sunrise Boulevard	69.3	42	134	425
White Rock Road	Sunrise Boulevard	Fitzgerald Road	65.2	17	52	166
White Rock Road	Fitzgerald Road	Grant Line Road	66.0	20	62	197
El Dorado County						
White Rock Road	Carson Crossing Road	Stonebriar Drive	65.7	19	59	185
White Rock Road	Stonebriar Drive	Windfield Way	66.3	22	68	216
White Rock Road	Windfield Way	Latrobe Road	66.7	23	74	235
White Rock Road	Latrobe Road	Valley View Parkway	66.2	21	66	207
White Rock Road	Valley View Parkway	U.S. 50	65.1	16	52	163
El Dorado Hills Boulevard	Serrano Parkway	Saratoga Way	72.7	93	295	934

Table 3A.11-2
Summary of Modeled Existing Traffic Noise Levels

Roadway Segment	Between		L_{dn}/CNEL (dB) at Approx. Road Corridor Boundary	Distance (feet) from Roadway Centerline to L_{dn}/CNEL (dB)		
	From	To		70	65	60
El Dorado Hills Boulevard	Saratoga Way	U.S. 50	72.9	97	306	967
Latrobe Road	U.S. 50	White Rock Road	70.7	59	185	586
Latrobe Road	White Rock Road	Golden Foothills Parkway	69.6	46	145	458
Latrobe Road	Golden Foothills Parkway	Investment Boulevard	67.8	30	96	304
Freeway						
U.S. 50	Zinfandel Drive	Sunrise Boulevard	78.9	1,535	4,854	15,349
U.S. 50	Sunrise Boulevard	Hazel Avenue	78.4	1,381	4,367	13,811
U.S. 50	Hazel Avenue	Folsom Boulevard	77.9	1,247	3,944	12,471
U.S. 50	Folsom Boulevard	Prairie City Road	77.0	991	3,135	9,913
U.S. 50	Prairie City Road	Oak Avenue Parkway	76.7	927	2,933	9,274
U.S. 50	Oak Avenue Parkway	Scott Road	76.7	927	2,933	9,274
U.S. 50	Scott Road	Empire Ranch Road	76.7	943	2,981	9,427
U.S. 50	Empire Ranch Road	Latrobe Road	76.1	816	2,579	8,157
U.S. 50	Latrobe Road	Bass Lake Road	76.1	816	2,579	8,157

Notes: CNEL = Community Noise Equivalent Level; dB = A-weighted decibels; L_{dn} = day-night average noise level
Refer to Appendix J for detailed modeling input data and output results.
Source: Data provided by AECOM in 2009

According to the City of Folsom's General Plan Noise Element, "Noise sources involved in Aerojet operations include testing of rocket engines, large hovercraft fans and high-pressure fire nozzles. Other engine testing could occur in the future. Noise produced by rocket engine testing typically includes a brief loud impulsive noise at ignition, followed by several seconds of sustained lower noise levels. Fan and nozzle testing may consist of sustained noise levels. Testing is usually conducted during daylight hours."

The City of Folsom's General Plan Noise Element recommends that noise from the Aerojet facility be considered in acoustical analyses prepared for noise-sensitive development in the South Folsom Planning Area between Folsom Boulevard and Prairie City Road. It is reasonable to infer that the intent of this recommendation also applies to noise-sensitive land uses east of Prairie City Road, including the SPA.

Mather Airport

Mather Airport (formerly Mather Air Force Base [AFB]) has been open as a public-use air cargo and general-aviation airport since May 5, 1995. Managed by the County of Sacramento Department of Airports, the airport, which operates 24 hours per day, consists of two primary runways: one 11,300 feet long and the other 6,100 feet long, generally aligned in a northeast-to-southwest direction. Mather Airport is a joint-use facility that supports both military and commercial operations, and it is rapidly developing as an air cargo depot. The airport includes approximately 40 acres of exclusive air cargo ramp space. Mather Airport is a designated back-up airport for Sacramento International Airport if it is closed by an emergency.

Following the closure of Mather AFB in 1988, the County of Sacramento adopted a reuse plan for Mather Airport in fall 1991. The Airport Land Use Compatibility Plan (ALUCP) for Mather Airport was subsequently adopted in May 1997. Prior to the opening of Mather Airport as a public use airport in May 1995, the County of Sacramento performed the required Federal and state environmental analyses to determine the environmental impacts of Mather Airport on the surrounding communities. Aircraft noise was one of the many areas evaluated in that environmental impact statement (EIS).

A "capacity" noise contour was developed to account for the potential growth in aircraft operations at the yet unused public use airport. The noise contours included operations by cargo jets, military jets, business jets, propeller-driven aircraft, and helicopters. Although the level of operations modeled were well beyond what was anticipated to actually occur when the airport opened, the resulting noise contours did not extend into noise sensitive areas. The Mather Airport EIS received Federal and state approvals and the Airport began operation as a public use airport in May 1995. Therefore, the "capacity" contour represents the expected worst maximum extent of the 60 and 65 dB CNEL contours from the airport. The noise contours produced by present traffic levels at the airport and the contours that would be produced by the increased traffic levels if Sacramento International Airport were temporarily closed due to an emergency, would be of a lesser extent than the capacity contour.

The SPA is not located within the currently adopted 60 and 65 dB CNEL noise contours of the ALUCP for Mather Airport. These noise contours have been proposed for revision as part of the development of the *Mather Airport Master Plan*, which is currently being prepared by the Sacramento County Airport System. However, even with these revisions, the nearest 60 dB CNEL noise contour would be approximately 5,000 feet to the west of the nearest SPA boundary line.

Existing Noise-Sensitive Land Uses

Noise-sensitive land uses are generally considered to include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Additional land uses such as parks, historic sites, cemeteries, and recreation areas are also generally considered sensitive to increases in exterior noise levels. Schools, places of worship, hotels, libraries, and other places where low interior noise levels are essential, are also considered noise-sensitive.

Existing noise-sensitive land uses in the project vicinity include: off-site residences adjacent to the eastern boundary of the SPA; Folsom High School (approximately 1,000 feet north of the proposed improvements to the Prairie City Road/U.S. 50 interchange); residences accessible via Iron Point Road (approximately 1,000 feet north of the proposed Oak Avenue/U.S. 50 interchange) and the proposed Rowberry Drive Overcrossing/U.S. 50 interchange; residences accessible via Iron Point Road (approximately 2,200 feet north of the proposed improvements to the Scott Road/U.S. 50 interchange); and the residences accessible via Iron Point Road (approximately 400 feet from the proposed Empire Ranch Road/U.S. 50 interchange).

3A.11.2 Regulatory Framework

Various private and public agencies have established noise guidelines and standards to protect citizens from potential hearing damage and other adverse physiological and social effects associated with noise. Applicable standards and guidelines are described below.

Federal Plans, Policies, Regulations, and Laws

The U.S. Environmental Protection Agency's (EPA's) Office of Noise Abatement and Control was originally established to coordinate Federal noise control activities. After its inception EPA's Office of Noise Abatement and Control issued the Federal Noise Control Act of 1972, establishing programs and guidelines to identify and

address the effects of noise on public health, welfare, and the environment. In 1981, EPA administrators determined that subjective issues such as noise would be better addressed at more local levels of government. Consequently, in 1982, responsibilities for regulating noise control policies were transferred to state and local governments. However, noise control guidelines and regulations contained in EPA rulings in prior years remain in place by designated Federal agencies where relevant. No Federal noise regulations are applicable to the Proposed Project or any of the other alternatives under consideration.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

The State of California has adopted noise standards in areas of regulation not preempted by the Federal government. State standards regulate noise levels of motor vehicles, sound transmission through buildings, occupational noise control, and noise insulation.

Title 24 of the California Code of Regulations, also known as the California Building Standards Code, establishes building standards applicable to all occupancies throughout the state (California Building Standards Commission 2002). The code provides acoustical regulations for both exterior-to-interior sound insulation as well as sound and impact isolation between adjacent spaces of various occupied units. Title 24 regulations state that interior noise levels generated by exterior noise sources shall not exceed 45 dB L_{dn}/CNEL, with windows closed, in any habitable room for general residential uses. The California Streets and Highways Code also contains regulations for assessing traffic noise impacts of new or altered state freeways on schools.

Though not adopted by law, the *State of California General Plan Guidelines 2003*, published by the California Governor's Office of Planning and Research (OPR), provides guidance for the compatibility of projects within areas of specific noise exposure. Table 3A.11-3 presents acceptable and unacceptable community noise exposure limits for various land use categories. The guidelines also present adjustment factors that may be used to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution.

Table 3A.11-3
Land Use Noise Compatibility Guidelines

Land Use Category	Community Noise Exposure (L_{dn}/CNEL, dB)			
	Normally Acceptable[1]	Conditionally Acceptable[2]	Normally Unacceptable[3]	Clearly Unacceptable[4]
Residential-Low Density Single Family, Duplex, Mobile Home	<60	55–70	70–75	75+
Residential-Multiple Family	<65	60–70	70–75	75+
Transient Lodging, Motel, Hotel	<65	60–70	70–80	80+
School, Library, Church, Hospital, Nursing Home	<70	60–70	70–80	80+
Auditorium, Concert Hall, Amphitheater		<70	65+	
Sports Arenas, Outdoor Spectator Sports		<75	70+	
Playground, Neighborhood Park	<70		67.5–75	72.5+
Golf Courses, Stable, Water Recreation, Cemetery	<75		70–80	80+
Office Building, Business Commercial and Professional	<70	67.5–77.5	75+	
Industrial, Manufacturing, Utilities, Agriculture	<75	70–80	75+	

Notes: CNEL = Community Noise Equivalent Level; dB = A-weighted decibels; L_{dn} = day-night average noise level.

[1] Specified land use is satisfactory, based on the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

[2] New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

[3] New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design. Outdoor areas must be shielded.

[4] New construction or development should generally not be undertaken.

Source: OPR 2003:244-254

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND ORDINANCES

County of Sacramento General Plan

The following goals and policies outlined in the County of Sacramento General Plan relating to noise are applicable to the No Project Alternative.

Noise Element

GOAL 1. To protect the citizens of Sacramento County from the harmful and annoying effects of exposure to excessive noise.

GOAL 2. To protect the economic base of Sacramento County by preventing incompatible land uses from encroaching upon existing or planned noise-producing uses.

- **Policy NO-1:** Noise created by new transportation noise sources should be mitigated so as not to exceed 60 dB L_{dn}/CNEL at the outdoor activity areas of any affected residential lands or land use situated in the unincorporated areas. When a practical application of the best available noise-reduction technology cannot achieve the 60 dB L_{dn}/CNEL standard, then an exterior noise level of 65 dB L_{dn}/CNEL may be allowed in outdoor activity areas.

- **Policy NO-2:** Noise created by new nontransportation noise sources shall be mitigated so as not to exceed any of the noise level standards of Table II-1 (included here as Table 3A.11-4), as measured immediately within the property line of any affected residentially designated lands or residential land use situated in the unincorporated areas.

Table 3A.11-4
County of Sacramento Noise Level Performance Standards[1] for Residential Areas Affected by Nontransportation Noise[2]

Statistical Noise Level Descriptor	Exterior Noise Level Standards (dB)	
	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
L_{50}	50	45
L_{max}	70	65

Notes: dB = A-weighted decibels; L_{50} = noise level exceeded 50% of a specified period of time; L_{max} = maximum noise level

[1] These standards are for planning purposes and may vary from the standards of the County's Noise Control Standards, which are for enforcement purposes.

[2] These standards apply to new or existing residential areas affected by new or existing nontransportation sources.

Source: County of Sacramento General Plan, Noise Element 1993

- **Policy NO-3:** Where proposed nontransportation noise sources are likely to produce noise levels exceeding the performance standards of Table II-1 (included here as Table 3A.11-4) at existing or planned residential uses, an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design. (Requirements for the content of an acoustical analysis are given by Table II-1 (included here as Table 3A.11-5)

- **Policy NO-4:** Where residential land uses are proposed in areas exposed to existing or projected exterior noise levels exceeding either 60 dB L_{dn}/CNEL or the performance standards of Table II-1 (included here as Table 3A.11-4), an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design.

Table 3A.11-5
Requirements for an Acoustical Analysis

An acoustical analysis prepared pursuant to the Noise Element shall:

A. Be the financial responsibility of the applicant.

B. Be prepared by a qualified person experienced in the fields of environmental noise assessment and architectural acoustics.

C. Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions and the predominant noise sources.

D. Estimate existing and projected cumulative (20 years) noise in terms of L_{dn}/CNEL and/or standards of Table II-1 (included here as Table 3A.11-4), and compare those levels to the adopted policies of the Noise Element.

E. Recommend appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element. Where the noise source in question consists of intermittent single events, the report must address the effects of maximum nose levels in sleeping rooms in terms of possible sleep disturbance.

F. Estimate noise exposure after the prescribed mitigation measures have been implemented.

G. Describe a post-project assessment program which could be used to evaluate the effectiveness of the proposed mitigation measures.

Notes: CNEL = Community Noise Equivalent Level; L_{dn} = day-night average noise level
Source: County of Sacramento General Plan, Noise Element 1993

- **Policy NO-5:** New residential development shall not be allowed where the noise level due to nontransportation noise sources will exceed the noise level standards of Table II-1 (included here as Table 3A.11-4) as measured immediately within the property line of the new development.

- **Policy NO-6:** The compatibility of proposed nonresidential projects with existing and future noise levels due to transportation noise sources shall be evaluated through a comparison to Figure II-1(included here as Table 3A.11-6).

County of Sacramento Code, Noise Control

The County of Sacramento Code contains performance standards for the purpose of preventing unnecessary, excessive, and offensive noise levels within the county. Table 3A.11-7 includes pertinent excerpts from the Noise Control section that would apply to the No Project Alternative, and to the off-site detention basin west of Prairie City Road under all five action alternatives.

Exemptions

Section 6.68.090 of the County of Sacramento Code establishes conditions that are considered exempt from the associated provisions, as described below:

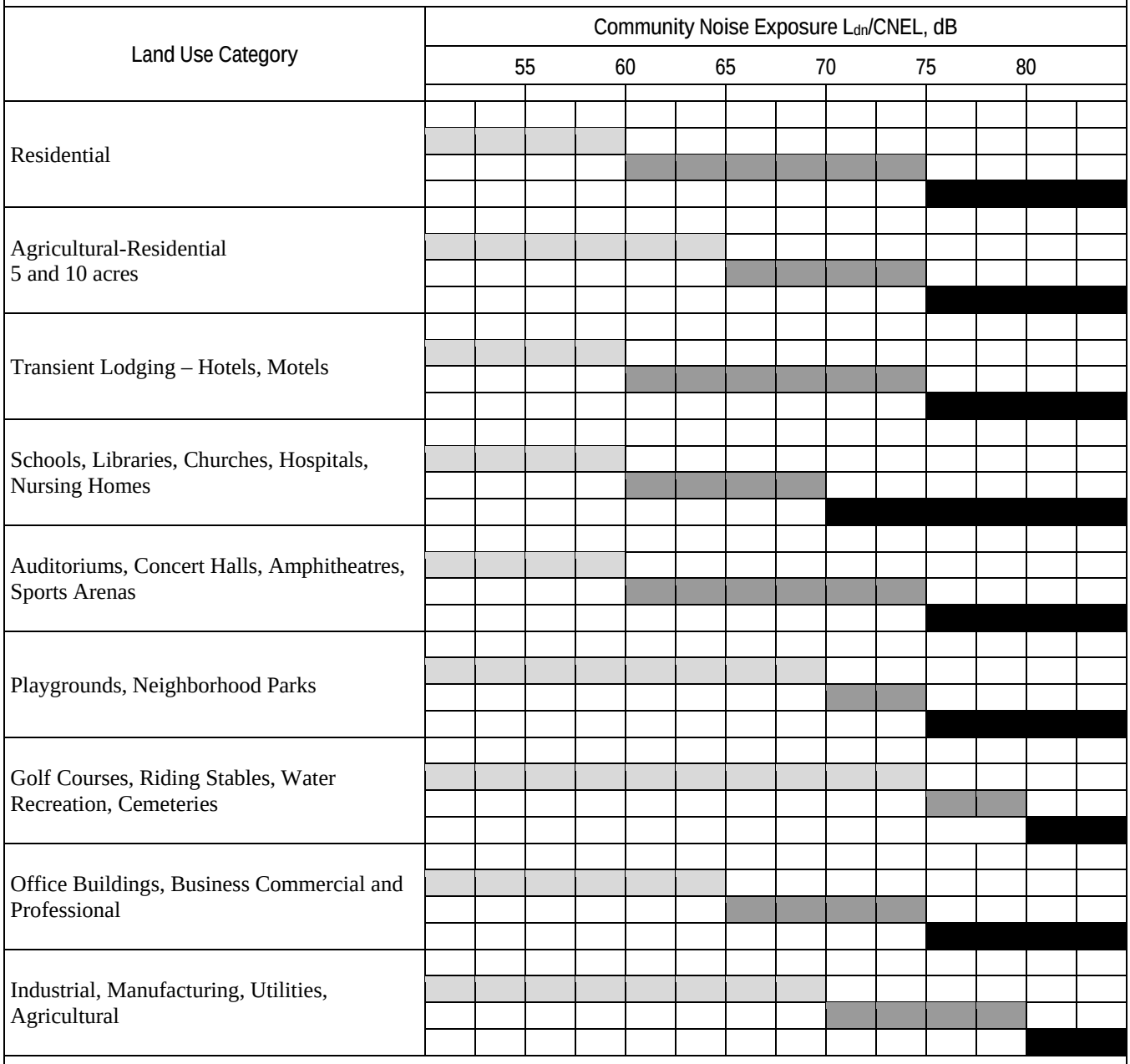
a. School bands, school athletic and school entertainment events;

b. Outdoor gatherings, public dances, shows and sporting and entertainment events, provided said events are conducted pursuant to a license or permit by the County;

c. Activities conducted on parks, public playgrounds and school grounds, provided such parks, playgrounds and school grounds are owned and operated by a public entity or private school;

d. Any mechanical device, apparatus or equipment related to or connected with emergency activities or emergency work;

Table 3A.11-6
Land Use Compatibility for Community Noise Environments



Acceptable – Specified land use is satisfactory, no noise mitigation measures are required.

Conditionally Acceptable – Use should be permitted only after careful study and inclusion of protective measures as needed for intended use and to satisfy policies of the Noise Element.

Unacceptable – Development is not feasible in accordance with Noise Element. Use is prohibited.

Notes: CNEL = Community Noise Equivalent Level; dB = A-weighted decibels; L_{dn} = day-night average noise level

Source: County of Sacramento General Plan, Noise Element 1993

Table 3A.11-7
Excerpts from the County of Sacramento Code, Noise Control

Noise Area	County Zoning Districts	Time Period	Exterior Noise Standard
1	RE-1, RD-1, RE-2, RD-2, RE-3, RD-3, RD-4, R-1-A, RD-5, R-2, RD-10, R-2A, RD-20, R-3, R-D-30, RD-40, RM-1, RM-2, A-1-B, AR-1, A-2, AR-2, A-5, AR-5	7 a.m.–10 p.m.	55 dB
		10 p.m.–7 a.m.	50 dB

b. It is unlawful for any person at any location within the County to create any noise which causes the noise levels on an affected property, when measured in the designated noise area, to exceed for the duration of time set forth following, the specified exterior noise standards in any one hour by:

Cumulative Duration of the Intrusive Sound	Allowance Decibels (dB)
1. Cumulative period of 30 minutes per hour	0
2. Cumulative period of 15 minutes per hour	+ 5
3. Cumulative period of 5 minutes per hour	+10
4. Cumulative period of 1 minute per hour	+15
5. Level not to be exceeded for any time per hour	+20

c. Each of the noise limits specified in subdivision (b) of this section shall be reduced by five dB for impulsive or simple tone noises, or for noises consisting of speech or music.

d. If the ambient noise level exceeds that permitted by any of the first four noise-limit categories specified in subdivision (b), the allowable noise limit shall be increased in five dB increments in each category to encompass the ambient noise level. If the ambient noise level exceeds the fifth noise level category, the maximum ambient noise level shall be the noise limit for that category.

Notes: dB = A-weighted decibels
Source: County of Sacramento Code, Noise Control 1976

e. Noise sources associated with construction, repair, remodeling, demolition, paving or grading of any real property, provided said activities do not take place between the hours of eight p.m. and six a.m. on weekdays and Friday commencing at eight p.m. through and including seven a.m. on Saturday; Saturdays commencing at eight p.m. through and including seven a.m. on the next following Sunday and on each Sunday after the hour of eight p.m. Provided, however, when an unforeseen or unavoidable condition occurs during a construction project and the nature of the project necessitates that work in process be continued until a specific phase is completed, the contractor or owner shall be allowed to continue work after eight p.m. and to operate machinery and equipment necessary until completion of the specific work in progress can be brought to conclusion under conditions which will not jeopardize inspection acceptance or create undue financial hardships for the contractor or owner;

f. Noise sources associated with agricultural operations, provided such operations do not take place between the hours of eight p.m. and six a.m.;

g. All mechanical devices, apparatus or equipment which are utilized for the protection or salvage of agricultural crops during periods of adverse weather conditions or when the use of mobile noise sources is necessary for pest control;

h. Noise sources associated with maintenance of residential area property, provided said activities take place between the hours of six a.m. and eight p.m. on any day except Saturday or Sunday, or between the hours of seven a.m. and eight p.m. on Saturday or Sunday;

i. Any activity, to the extent provisions of Chapter 65 of Title 42 of the United States Code, and Articles 3 and 3.5 of Chapter 4 of Division 9 of the Public Utilities Code of the State of California preempt local control of

noise regulations and land use regulations related to noise control of airports and their surrounding geographical areas, any noise source associated with the construction, development, manufacture, maintenance, testing or operation of any aircraft engine, or of any weapons system or subsystems which are owned, operated or under the jurisdiction of the United States, or any other activity to the extent regulation thereof has been preempted by state or Federal law or regulation; and

j. Any noise sources associated with the maintenance and operation of aircraft or airports which are owned or operated by the United States.

County of El Dorado General Plan

The following goals and policies outlined in the County of El Dorado General Plan relating to noise are applicable to the two off-site roadway connections from the Folsom Heights property into El Dorado Hills under the Proposed Project Alternative. There are no El Dorado County General Plan policies related to noise that would apply to the other alternatives under consideration.

Noise Element

GOAL 6.5: Acceptable Noise Levels

Ensure that County residents are not subjected to noise beyond acceptable levels.

OBJECTIVE 6.5.1: Protection of Noise-Sensitive Development. Protect existing noise-sensitive developments (e.g., hospitals, schools, churches and residential) from new uses that would generate noise levels incompatible with those uses and, conversely, discourage noise-sensitive uses from locating near sources of high noise levels.

- **Policy 6.5.1.1:** Where noise-sensitive land uses are proposed in areas exposed to existing or projected exterior noise levels exceeding the levels specified in Table 6-1 (included here as Table 3A.11-8) or the performance standards of Table 6-2 (included here as Table 3A.11-9), an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design.

- **Policy 6.5.1.2:** Where proposed non-residential land uses are likely to produce noise levels exceeding the performance standards of Table 6-2 (included here as Table 3A.11-9) at existing or planned noise-sensitive uses, an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design.

- **Policy 6.5.1.3:** Where noise mitigation measures are required to achieve the standards of Tables 6-1 (included here as Table 3A.11-8) and 6-2 (included here as Table 3A.11-9), the emphasis of such measures shall be placed upon site planning and project design. The use of noise barriers shall be considered a means of achieving the noise standards only after all other practical design-related noise mitigation measures have been integrated into the project and the noise barriers are not incompatible with the surroundings.

- **Policy 6.5.1.4:** Existing dwellings and new single-family dwellings on legal lots of record, as of the date of adoption of this General Plan, are not subject to County review with respect to satisfaction of the standards of the Public Health, Safety, and Noise Element except in areas governed by the CLUPs for applicable airports.

  As a consequence, such dwellings may be constructed in other areas where noise levels exceed the standards of the Public Health, Safety, and Noise Element. It is not the responsibility of the County to ensure that such dwellings meet the noise standards of the Public Health, Safety, and Noise Element, or the noise standards imposed by lending agencies such as HUD [U.S. Department of Housing and Urban Development], FHA [Federal Housing Administration] and Cal Vet [California Department of Veterans Affairs]. If homes are located and constructed in accordance with the Public Health, Safety, and Noise Element, it is expected that the resulting exterior and interior noise levels will conform to the HUD/FHA/Cal Vet noise standards.

Table 3A.11-8
Maximum Allowable Noise Exposure for Transportation Noise Sources

Land Use	Outdoor Activity Areas[1] L_{dn}/CNEL, dB	Interior Spaces	
		L_{dn}/CNEL, dB	L_{eq}, dB[2]
Residential	60[3]	45	--
Transient Lodging	60[3]	45	--
Hospitals, Nursing Homes	60[3]	45	--
Theaters, Auditoriums, Music Halls	--	--	35
Churches, Meeting Halls, Schools	60[3]	--	40
Office Buildings	--	--	45
Libraries, Museums	--	--	45
Playgrounds, Neighborhood Parks	70	--	--

Notes: CNEL = community noise equivalent level; dB = A-weighted decibels; L_{dn} = day-night noise level; L_{eq} = equivalent noise level

[1] In Communities and Rural Centers, where the location of outdoor activity areas is not clearly defined, the exterior noise level standard shall be applied to the property line of the receiving land use. For residential uses with front yards facing the identified noise source, an exterior noise level criterion of 65 dB L_{dn}/CNEL shall be applied at the building façade, in addition to a 60 dB L_{dn}/CNEL criterion at the outdoor activity area. In Rural Regions, an exterior noise level criterion of 60 dB L_{dn}/CNEL shall be applied at a 100-foot radius from the residence unless it is within Platted Lands where the underlying land use designation is consistent with the Community Region densities in which case the 65 dB L_{dn}/CNEL may apply. The 100-foot radius applies to properties which are five acres and larger; the balance will fall under the property line requirement.

[2] As determined for a typical worst-case hour during periods of use.

[3] Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn}/CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB L_{dn}/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

Source: El Dorado County General Plan, Noise Element 2004

- **Policy 6.5.1.5:** Setbacks shall be the preferred method of noise abatement for residential projects located along U.S. 50. Noise walls shall be discouraged within the foreground viewshed of U.S. 50 and shall be discouraged in favor of less intrusive noise mitigation (e.g., landscaped berms, setbacks) along other high volume roadways.

- **Policy 6.5.1.6:** New noise-sensitive uses shall not be allowed where the noise level, due to nontransportation noise sources, will exceed the noise level standards of Table 6-2 (included here as Table 3A.11-9) unless effective noise mitigation measures have been incorporated into the development design to achieve those standards.

- **Policy 6.5.1.7:** Noise created by new proposed nontransportation noise sources shall be mitigated so as not to exceed the noise level standards of Table 6-2 (included here as Table 3A.11-9) for noise-sensitive uses.

- **Policy 6.5.1.8:** New development of noise sensitive land uses will not be permitted in areas exposed to existing or projected levels of noise from transportation noise sources which exceed the levels specified in Table 6-1 (included here as Table 3A.11-8) unless the project design includes effective mitigation measures to reduce exterior noise and noise levels in interior spaces to the levels specified in Table 6-1 (included here as Table 3A.11-8).

- **Policy 6.5.1.9:** Noise created by new transportation noise sources, excluding airport expansion but including roadway improvement projects, shall be mitigated so as not to exceed the levels specified in Table 6-1 (included here as Table 3A.11-8) at existing noise-sensitive land uses.

- **Policy 6.5.1.10:** To provide a comprehensive approach to noise control, the County shall:

  A. Develop and employ procedures to ensure that noise mitigation measures required pursuant to an acoustical analysis are implemented in the project review process and, as may be determined necessary, through the building permit process.

  B. Develop and employ procedures to monitor compliance with the standards of the Noise Element after completion of projects where noise mitigation measures were required.

  C. The zoning ordinance shall be amended to provide that noise standards will be applied to ministerial projects with the exception of single-family residential building permits if not in areas governed by the Airports Comprehensive Land Use Plans.

- **Policy 6.5.1.11:** The standards outlined in Tables 6-3, 6-4, and 6-5 (included here as Tables 3A.11-10, 3A.11-11, and 3A.11-12) shall apply to those activities associated with actual construction of a project as long as such construction occurs between the hours of 7 a.m. and 7 p.m., Monday through Friday, and 8 a.m. and 5 p.m. on weekends, and on federally-recognized holidays. Exceptions are allowed if it can be shown that construction beyond these times is necessary to alleviate traffic congestion and safety hazards.

Table 3A.11-9
Noise Level Performance Protection Standards for Noise Sensitive Land Uses Affected by Nontransportation* Sources

Noise Level Descriptor	Daytime 7 a.m. – 7 p.m.		Evening 7 p.m. – 10 p.m.		Night 10 p.m. – 7 a.m.	
	Community	Rural	Community	Rural	Community	Rural
Hourly L_{eq}, dB	55	50	50	45	45	40
Maximum level, dB	70	60	60	55	55	50

Notes: dB = A-weighted decibels; L_{eq} = equivalent noise level

Each of the noise levels specified above shall be lowered by five dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings).

The County can impose noise level standards which are up to 5 dB less than those specified above based upon determination of existing low ambient noise levels in the vicinity of the SPA.

In Community areas the exterior noise level standard shall be applied to the property line of the receiving property. In Rural Areas the exterior noise level standard shall be applied at a point 100' away from the residence. The above standards shall be measured only on property containing a noise sensitive land use as defined in Objective 6.5.1. This measurement standard may be amended to provide for measurement at the boundary of a recorded noise easement between all affected property owners and approved by the County.

* Note: For the purposes of the Noise Element, transportation noise sources are defined as traffic on public roadways, railroad line operations and aircraft in flight. Control of noise from these sources is preempted by Federal and State regulations. Control of noise from facilities of regulated public facilities is preempted by California Public Utilities Commission (CPUC) regulations. All other noise sources are subject to local regulations. Nontransportation noise sources may include industrial operations, outdoor recreation facilities, HVAC units, schools, hospitals, commercial land uses, other outdoor land use, etc.

Source: Source: El Dorado County General Plan, Noise Element 2004

Table 3A.11-10
Maximum Allowable Noise Exposure for Nontransportation Noise Sources in Community Regions and Adopted Plan Areas for Construction Noise

Land Use Designation[1]	Time Period	Noise Level (dB)	
		L_{eq}	L_{max}
Higher-Density Residential (MFR, HDR, MDR)	7 a.m.–7 p.m.	55	75
	7 p.m.–10 p.m.	50	65
	10 p.m.–7 a.m.	45	60
Commercial and Public Facilities (C, R&D, PF)	7 a.m.–7 p.m.	70	90
	7 p.m.–7 a.m.	65	75
Industrial (I)	Any Time	80	90

Notes: dB = A-weighted decibels; L_{eq} = the equivalent hourly average noise level; L_{max} = maximum noise level

[1] Adopted Plan areas should refer to those land use designations that most closely correspond to the similar General Plan land use designations for similar development.

Source: Source: El Dorado County General Plan, Noise Element 2004

Table 3A.11-11
Maximum Allowable Noise Exposure for Nontransportation Noise Sources in Rural Centers for Construction Noise

Land Use Designation	Time Period	Noise Level (dB)	
		L_{eq}	L_{max}
All Residential (MFR, HDR, MDR)	7 a.m.–7 p.m.	55	75
	7 p.m.–10 p.m.	50	65
	10 p.m.–7 a.m.	40	55
Commercial, Recreation, and Public Facilities (C, TR, PF)	7 a.m.–7 p.m.	65	75
	7 p.m.–7 a.m.	60	70
Industrial (I)	Any Time	70	80
Open Space (OS)	7 am–7 pm	55	75
	7 p.m.–7 a.m.	50	65

Notes: dB = A-weighted decibels; L_{eq} = the equivalent hourly average noise level; L_{max} = maximum noise level

Source: El Dorado County General Plan, Noise Element 2004

Table 3A.11-12
Maximum Allowable Noise Exposure for Nontransportation Noise Sources in Rural Regions for Construction Noise

Land Use Designation	Time Period	Noise Level (dB)	
		L_{eq}	L_{max}
All Residential (LDR)	7 a.m.–7 p.m.	50	60
	7 p.m.–10 p.m.	45	55
	10 p.m.–7 a.m.	40	50
Commercial, Recreation, and Public Facilities (C, TR, PF)	7 a.m.–7 p.m.	65	75
	7 p.m.–7 a.m.	60	70
Rural Land, Natural Resources, Open Space, and Agricultural Lands (RR, NR, OS, AL)	7 a.m.–7 p.m.	65	75
	7 p.m.–7 a.m.	60	70

Notes: dB = A-weighted decibels; L_{eq} = the equivalent hourly average noise level; L_{max} = maximum noise level

Source: El Dorado County General Plan, Noise Element 2004

- **Policy 6.5.1.12:** When determining the significance of impacts and appropriate mitigation for new development projects, the following criteria shall be taken into consideration.

  A. Where existing or projected future traffic noise levels are less than 60 dB L_{dn}/CNEL at the outdoor activity areas of residential uses, an increase of more than 5 dB L_{dn}/CNEL caused by a new transportation noise source will be considered significant;

  B Where existing or projected future traffic noise levels range between 60 and 65 dB L_{dn}/CNEL at the outdoor activity areas of residential uses, an increase of more than 3 dB L_{dn}/CNEL caused by a new transportation noise source will be considered significant; and

  C. Where existing or projected future traffic noise levels are greater than 65 dB L_{dn}/CNEL at the outdoor activity areas of residential uses, an increase of more than 1.5 dB L_{dn}/CNEL caused by a new transportation noise will be considered significant.

- **Policy 6.5.1.13:** When determining the significance of impacts and appropriate mitigation to reduce those impacts for new development projects, including ministerial development, the following criteria shall be taken into consideration:

  A. In areas in which ambient noise levels are in accordance with the standards in Table 6-2 (included here as Table 3A.11-9), increases in ambient noise levels caused by new nontransportation noise sources that exceed 5 dB shall be considered significant; and

  B. In areas in which ambient noise levels are not in accordance with the standards in Table 6-2 (included here as Table 3A.11-9), increases in ambient noise levels caused by new nontransportation noise sources that exceed 3 dB shall be considered significant.

- **Policy 6.5.1.14:** The County will adopt a noise ordinance to resolve neighborhood conflicts and to control unnecessary noise in the County. Examples of the types of noise sources that can be controlled through the use of a quantitative noise ordinance include noisy mechanical equipment (e.g., swimming pool pumps, HVAC [heating, ventilating, and air conditioning] units), and amplified music in commercial establishments.

- **Policy 6.5.1.15:** The County will establish and maintain coordination among city, county, and state agencies involved in noise abatement and other agencies to reduce noise generated from sources outside the County's jurisdiction.

City of Folsom General Plan

The following goals and policies outlined in the City of Folsom General Plan relating to noise are applicable to the Proposed Project and the other four action alternatives. There are no City of Folsom General Plan policies related to noise that are applicable to the No Project Alternative.

Noise Element

GOAL 30: To protect the citizens of Folsom from the harmful effects of exposure to excessive noise and protect the economic base of Folsom by preventing the encroachment of incompatible land uses within areas protected by existing noise producing uses.

- **Policy 30.2:** Develop and implement effective strategies to abate and avoid excessive noise exposures in the City by requiring that effective noise mitigation measures be incorporated into the design of new noise-generating and new noise-sensitive land uses.

- **Policy 30.3:** Protect areas within the City where the present noise environment is within acceptable limits.

- **Policy 30.4:** Areas within the City of Folsom shall be designated as noise impacted if exposed to existing or projected exterior noise levels exceeding 60 dB L_{dn}/CNEL or the performance standards of Table 26-3 of the Noise Element (included here as Table 3A.11-13).

Table 3A.11-13
Noise Level Performance Standards for New Projects and Developments

Noise created by nontransportation-related noise sources associated with new projects or developments shall be controlled so as not to exceed the noise level standards set forth below as measured at any affected residentially designated lands or land use situated in either the incorporated or unincorporated areas. New residential development shall not be allowed where the ambient noise level due to nontransportation-related noise sources will exceed the noise level standards as set forth below:

Exterior Noise Level Standards, dB			
Category	Cumulative number of minutes in any one-hour time period	Daytime 7 a.m.–10 p.m.	Nighttime 10 p.m.–7 a.m.
1	30	50	45
2	15	55	50
3	5	60	55
4	1	65	60
5	0	70	65

Note: dB = A-weighted decibels
Source: City of Folsom General Plan, Noise Element 1988

Each of the noise level standards specified above shall be reduced by 5 dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises.

Noise from single occurrences such as the passage of locomotives, heavy trucks, or aircraft should also be evaluated in terms of single event noise levels. The maximum noise level created by such an event may have the potential to result in activity interference even though the cumulative noise exposure in terms of L_{dn}/CNEL is within acceptable limits. The potential for sleep disturbance is usually of primary concern, and should be evaluated on a case-by-case basis.

- **Policy 30.5**: New development of residential or other noise sensitive land uses will not be permitted in noise impacted areas unless effective mitigation measures are incorporated into the project design to reduce noise levels to:

  1. For noise due to traffic on public roadways, railroad operations, and aircraft: 60 dB L_{dn}/CNEL or less. Where it is not possible to reduce exterior noise due to these sources to 60 dB L_{dn}/CNEL or less by incorporating a practical application of the best available noise-reduction technology, an exterior noise level of up to 65 dB L_{dn}/CNEL will be allowed. Under no circumstances will interior noise levels be permitted to exceed 45 dB L_{dn}/CNEL with the windows and doors closed.

  2. For nontransportation related noise sources: achieve compliance with the performance standards contained within Table 26-3 (included here as Table 3A.11-3).

  3. If compliance with the adopted standards and policies of the Noise Element will not be achieved, a statement of overriding considerations for the project must be provided.

- **Policy 30.6:** When industrial, commercial land uses or other uses including nontransportation related noise sources are proposed which would affect areas containing noise sensitive land uses, noise levels generated by

the proposed use shall not exceed the performance standards contained within Table 26-3 (included here as Table 3A.11-13).

- **Policy 30.7:** Prior to the approval of proposed development of residential or other noise sensitive land uses in a noise impacted area, an acoustical analysis may be required. The acoustical analysis shall:

  1. Be the responsibility of the applicant.

  2. Be prepared by a qualified person experienced in the fields of environmental noise assessment and architectural acoustics.

  3. Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions.

  4. Include estimated noise levels in terms of L_{dn}/CNEL and/or the standards of Table 26-3 (included here as Table 3A.11-13)for existing and projected future (20 years hence) conditions, with a comparison made to the adopted policies of the noise element.

  5. Include recommendations for appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element. Where the noise source in question consists of intermittent single events, the report must address the effects of maximum noise levels in sleeping rooms in terms of possible sleep disturbance.

  6. Include estimates of noise exposure after the prescribed mitigation measures have been implemented.

- **Policy 30.9:** Noise level criteria applied to land uses other than residential or other noise sensitive uses shall be consistent with the standards in Table 26-3 (included here as Table 3A.11-13).

- **Policy 30.10:** The City of Folsom shall enforce the State Noise Insulation Standards (California Administrative Code, Title 24) and Chapter 35 of the Uniform Building Code.

- **Policy 30.15:** If noise barriers are required to achieve the noise level standards contained within this Element, the following construction practices are recommended:

  1. Noise barriers exceeding six feet in height relative to the roadway should incorporate an earth berm to raise the height of the base so that the total height of the vertical planar portion of barrier is less than six feet.

  2. The total height of the noise barrier above roadway elevation should normally be limited to 12 feet.

  3. The noise barriers should be designed so that their appearance is consistent with other noise barriers in the project vicinity.

City of Folsom Municipal Code, Noise Control

The noise standards contained in the City of Folsom Municipal Code are provided below, and apply to the Proposed Project and the other four action alternatives. These standards would not apply to the No Project Alternative.

Exterior Noise Standards (Section 8.42.040)

A. It is unlawful for any person at any location within the incorporated area of the city to create any noise, or to allow the creation of any noise, on property owned, leased, occupied or otherwise controlled by such person

which causes the exterior noise level when measured at any affected single- or multiple-family residence, school, church, hospital or public library situated in either the incorporated or unincorporated area to exceed the noise level standards as set forth in Table 8.42.040 (included here as Table 3A.11-14).

Table 3A.11-14
Exterior Noise Level Standards

Noise Level Category	Cumulative Number of minutes in any 1-hour time period	Daytime (dB) (7 a.m.–10 p.m.)	Nighttime (dB) (10 p.m.–7 a.m.)
1	30	50	45
2	15	55	50
3	5	60	55
4	1	65	60
5	0	70	65

Note: dB = A-weighted decibels
Source: City of Folsom Code, Noise Control 1993

B. In the event the measured ambient noise level exceeds the applicable noise level standard in any category above, the applicable standard shall be adjusted so as to equal the ambient noise level.

C. Each of the noise level standards specified above shall be reduced by 5 dB for simple tone noises, noises consisting primarily of speech or music, or for recurring noises.

D. If the intruding noise source is continuous and cannot reasonably be discontinued or stopped for a time period whereby the ambient noise level can be measured, the noise level measured while the source is in operation shall be the noise level standards as specified above.

Interior Noise Standards (Section 8.42.050)

A. It is unlawful for any person, at any location within the city, to operate or cause to be operated within a dwelling unit, any source of sound or to allow the creation of any noise which causes the noise level when measured inside a receiving dwelling unit situated in the area either within the city or adjacent to the city to exceed the noise level standards as set forth in the Table 8.42.050 (included here as Table 3A.11-15).

Table 3A.11-15
Interior Noise Level Standards

Noise Level Category	Cumulative Number of minutes in any 1-hour time period	Daytime (dB) (7 a.m.–10 p.m.)	Nighttime (dB) (10 p.m.–7 a.m.)
1	5	45	35
2	1	50	40
3	0	55	45

Note: dB = A-weighted decibels
Source: City of Folsom Code, Noise Control 1993

B. In the event the measured ambient noise level exceeds the applicable noise level standard in any category above, the applicable standard shall be adjusted so as to equal the ambient noise level.

C. Each of the noise level standards specified above shall be reduced by 5 dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises.

D. If the intruding noise source is continuous and cannot reasonably be discontinued or stopped for a time period whereby the ambient noise level can be measured, the noise level measured while the source is in operation shall be the noise level standards as specified above.

Noise Source Exemptions (Section 8.42.060)

Section 8.42.060 of the City of Folsom Municipal Code establishes the following activities that are considered exempt from the associated exterior noise provisions:

A. Activities conducted in unlighted public parks, public playgrounds and public or private school grounds, during the hours of 7 a.m. to dusk, and in lighted public parks, public playgrounds and public or private school grounds, during the hours of 7 a.m. to 11 p.m., including but not limited to school athletic and school entertainment events;

B. Any mechanical device, apparatus, or equipment used, related to or connected with emergency activities or emergency work;

C. Noise sources associated with construction, provided such activities do not take place before 7 a.m. or after 6 p.m. on any day except Saturday or Sunday, or before 8 a.m. or after 5 p.m. on Saturday or Sunday;

D. Noise sources associated with the maintenance of residential property provided such activities take place between the hours of seven a.m. to dusk on any day except Saturday or Sunday, between the hours of 8 a.m. to dusk on Saturday or Sunday;

E. Noise sources associated with agricultural activities on agricultural property;

F. Noise sources associated with a lawful commercial or industrial activity caused by mechanical devices or equipment, including air conditioning or refrigeration systems, installed prior to the effective date of this chapter. This exemption shall expire 1 year after the effective date of this chapter;

G. Noise sources associated with the collection of waste or garbage from property devoted to commercial or industrial uses;

H. Any activity to the extent regulation thereof has been preempted by state or Federal law.

Air Conditioning and Refrigeration (Section 8.42.070)

Notwithstanding the provisions of Section 8.42.040 or 8.42.050, where the intruding noise source when measured as provided in Section 8.42.030 is an air-conditioning or refrigeration system or associated equipment installed prior to the effective date of this chapter, the exterior noise level shall not exceed 55 dB, except where such equipment is otherwise exempt from the provisions of this chapter. The exterior noise level shall not exceed 50 dB for such equipment installed or in use after 1 year after the effective date of this chapter.

Electrical Substations (Section 8.42.080)

Notwithstanding the provisions of Sections 8.42.040 and 8.42.050, noise sources associated with the operation of electrical substations shall not exceed 50 dB when measured as provided in Section 8.42.030.

Vibration Criteria

CEQA states that the potential for any excessive groundborne noise and vibration levels must be analyzed; however, it does not define the term "excessive" vibration. Numerous public and private organizations and governing bodies have provided guidelines to assist in the analysis of groundborne noise and vibration; however, the Federal, state, and local governments have yet to establish specific groundborne noise and vibration requirements. The following publications of the FTA and Caltrans are two of the seminal works for the analysis of groundborne noise and vibration relating to transportation and construction-induced vibration. Caltrans recommends that a level of 0.2 in/sec PPV not be exceeded for the protection of normal residential buildings, and that 0.08 in/sec PPV not be exceeded for the protection of old or historically significant structures (Caltrans 2004: 17). With respect to human response within residential and school uses (i.e., annoyance), FTA recommends maximum acceptable vibration levels of 80 and 78 VdB, respectively (FTA 2006).

3A.11.3 Environmental Consequences and Mitigation Measures

Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. These thresholds also encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. Noise impacts under consideration were determined to be significant if the Proposed Project or alternatives under consideration would do any of the following:

- expose persons to or generate noise levels in excess of applicable standards (e.g., County of Sacramento General Plan as shown in Table 3A.11-4 for nontransportation and Table 3A.11-6 for transportation; County of Sacramento Code as shown in Table 3A.11-7; County of El Dorado General Plan as shown in Table 3A.11-8 for transportation, Table 3A.11-9 for nontransportation, and Tables 3A.11-10 through Table 3A.11-12 for construction; City of Folsom General Plan as shown in Table 3A.11-13 for transportation and Table 3A.11-13 for nontransportation; and the City of Folsom Code as shown in Table 3A.11-14 and Table 3A.11-15);

- expose persons to or generate excessive groundborne vibration or groundborne noise levels (e.g., 0.2 in/sec PPV for the prevention of structural damage and 78 VdB for the prevention of human disturbance at sensitive land uses);

- result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project (e.g., increase of more than 3 dB L_{dn}/CNEL);

- result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project (e.g., increase of more than 3 dB L_{dn}/CNEL);

- expose people residing or working in the area to excessive noise levels, for a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport; or

- expose people residing or working in the project area to excessive noise levels, for a project within the vicinity of a private airstrip.

Analysis Methodology

To assess potential temporary and short-term (construction-related) noise impacts, sensitive receptors and their relative exposure were identified. Project-generated construction source noise levels at these sensitive receptors were determined using the Federal Transit Noise and Vibration Impact Assessment methodology for construction

noise prediction (FTA 2006) along with reference emission noise levels and usage factors based on information contained in the *FHWA Roadway Construction Noise Model User's Guide* (FHWA 2006).

To assess potential long-term (operation-related) noise impacts due to project-generated increases in traffic, modeling was conducted for affected roadway segments using the FHWA Highway Traffic Noise Prediction Model (RD-77-108) (FHWA 1978) and traffic data (e.g., ADT volumes, vehicle speeds, and percent distribution of vehicle types) from DKS & Associates, Inc. and Caltrans. This model is based on the California vehicle noise (CALVENO) reference noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and ground attenuation factors and does not assume any natural or human-made shielding (e.g., the presence of vegetation, berms, walls, or buildings).

With respect to nontransportation noise sources (e.g., stationary) associated with project implementation, the assessment of long-term (operational-related) impacts was based on reconnaissance data, existing documentation, and standard attenuation rates and modeling techniques.

The methods identified above for transportation and nontransportation source noise were also used to assess the compatibility of the project with future on-site noise levels.

To assess the potential exposure of sensitive receptors to, and generation of excessive groundborne vibration and noise levels, sensitive receptors and their relative exposure were determined based on documented source-specific vibration levels and standard modeling procedures as recommended by federal and state agency guidance.

To evaluate relative significance, noise and vibration impacts were determined based on comparisons to applicable regulations and guidance provided by federal, state, and local agencies.

ISSUES NOT DISCUSSED FURTHER IN THIS EIR/EIS

Exposure to aircraft noise: The nearest 2005 60 dB CNEL noise contour attributable to Mather Airport would be approximately 5,000 feet to the west of the nearest SPA boundary line. Because the SPA would not be located in an area exposed to excessive aircraft-generated noise levels (e.g., not within the 60 dB L_{dn}/CNEL contour of any airport), there would be no impact related to aircraft noise, and therefore this issue is not discussed further in this EIR/EIS.

IMPACT ANALYSIS

Impacts that would occur under each alternative development scenario are identified as follows: NP (No Action/No Project), NCP (No USACE Permit), PP (Proposed Project/Action), RIM (Resource Impact Minimization), CD (Centralized Development), and RHD (Reduced Hillside Development). The impacts for each alternative are compared relative to the Proposed Project Alternative at the end of each impact conclusion (i.e., similar, greater, lesser).

IMPACT 3A.11-1 **Temporary, Short-Term Exposure of Sensitive Receptors to Increased Equipment Noise from Project Construction.** *Project implementation would result in temporary, short-term construction activities associated with development of residential, commercial, schools, and park uses, supporting roadways, and other infrastructure improvements. Project-related construction activities could expose existing off-site and future on-site sensitive receptors to temporary noise levels that exceed the applicable noise standards and/or result in a substantial increase in ambient noise levels.*

On-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80. If developed, construction of these residences would not be anticipated to require a high number of heavy-duty construction equipment, involve intense levels of earth movement, or occur simultaneously within close proximity to sensitive receptors for an extended period of time. Furthermore, agriculture-related noise sources would not be considered subject to applicable County of Sacramento noise-related policies and regulations. Finally, no off-site water facilities would be constructed. Consequently, temporary, short-term construction-related equipment noise levels under the No Project Alternative would not be anticipated to expose persons to or generate levels in excess of applicable standards, or result in a substantial temporary or periodic increase in ambient noise levels. Thus, this would be considered a **direct, less-than-significant** impact. **No indirect** impacts would occur. ***[Lesser]***

NCP, PP, RIM, CD, RHD

The No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives include development of a variety of mixed uses (i.e., residential, commercial, office/industrial, schools, community parks, and open space land uses) and supporting on-site roadway and infrastructure improvements. Construction of the proposed land uses and improvements would likely occur by sub-areas, within the SPA, in a sequence established by individual land owners (project applicant[s]) and influenced by market demand.

Construction noise levels in the project vicinity from on-site activities would fluctuate depending on the particular type, number, and duration of usage for the varying equipment. The effects of construction noise largely depend on the type of construction activities occurring on any given day, noise levels generated by those activities, distances to noise sensitive receptors, and the existing ambient noise environment in the receptor's vicinity. Construction generally occurs in several discrete stages, each phase requiring a specific complement of equipment with varying equipment type, quantity, and intensity. These variations in the operational characteristics of the equipment change the effect they have on the noise environment of the SPA and in the surrounding community for the duration of the construction process.

The site preparation phase typically generates the most substantial noise levels because of the on-site equipment associated with grading, compacting, and excavation, which uses the noisiest types of construction equipment. Site preparation equipment and activities include backhoes, bulldozers, loaders, and excavation equipment (e.g., graders and scrapers); and possibly bedrock blasting. Erection of large structural elements and mechanical systems could require the use of a crane for placement and assembly tasks, which may also generate noise levels. Although a detailed construction equipment list is not currently available, it is expected that the primary sources of noise would include backhoes, bulldozers, excavators, bedrock blasting, and other related equipment. Table 3A.11-16 depicts the noise levels generated by various types of construction equipment.

To assess noise levels associated with the various equipment types and operations, construction equipment can be considered to operate in two modes, mobile and stationary. Mobile equipment sources move around a construction site performing tasks in a recurring manner (e.g., loaders, graders, dozers). Stationary equipment operates in a given location for an extended period of time to perform continuous or periodic operations. Thus, determining the location of stationary sources during specific phases, or the effective acoustical center of operations for mobile equipment during various phases of the construction process is necessary. Operational characteristics of heavy construction equipment are additionally typified by short periods of full-power operation followed by extended periods of operation at lower power, idling, or powered-off conditions. As mentioned

above, blasting may also occur on the project-site to loosen bedrock, which would produce a single event noise level (L_{max}) followed by debris removal activities.

Based on the information provided in Table 3A.11-16 and accounting for the usage factor of individual pieces of equipment and activity types, on-site construction would be predicted to result in hourly average noise levels of 87 dB L_{eq} at 50 feet and maximum noise levels of 90 dB L_{max} at 50 feet from the simultaneous operation of heavy-duty equipment and blasting activities. Typical airborne noise associated with blasting activities is at a frequency below the range audible to humans and thus the impacts associated with blasting focus on the effects of groundborne noise and vibration which are discussed separately below in Impact 3A.11-3.

Table 3A.11-16
Noise Emission Levels from Construction Equipment

Equipment Type	Typical Noise Level (dB) @ 50 feet
Air Compressor	78
Asphalt Paver	77
Backhoe	78
Blasting	94
Compactor	83
Concrete Breaker	82
Concrete Pump	81
Concrete Saw	90
Crane, Mobile	81
Dozer	82
Front-end Loader	79
Generator	81
Grade	85
Hoe Ram Extension	90
Jack Hammer	89
Pneumatic Tools	85
Rock Drill	81
Scraper	84
Trucks	74–81
Water Pump	81

Notes:
dB = A-weighted decibels.
Assumes all equipment is fitted with a properly maintained and operational noise control device, per manufacturer specifications. Noise levels listed are manufacture-specified noise levels for each piece of heavy construction equipment.
Source: Bolt Beranek and Newman Inc. 1981, FTA 2006

Noise from localized point sources (such as construction sites) typically decreases by 6 dB to 7.5 dB with each doubling of distance from source to receptor. The existing intervening ground type in the SPA is soft and attenuates noise due to absorption; therefore, an attenuation rate of 7.5 dB per doubling of distance was assumed and accounted for in construction operation noise level predictions.

With respect to future on-site noise-sensitive receptors, the City of Folsom exempts daytime construction noise from applicable standards, as described above in Section 3A.11.2. However, if construction activities occur during the more noise-sensitive evening and nighttime hours, due to the potential necessity of continuous activity for specific components to maintain structural integrity, project-generated noise levels could exceed 45 dB L_{eq} at future on-site sensitive receptors within 2,000 feet of activity centers (e.g., the acoustical center of areas of the SPA where construction activities are focused). Currently, there are no on-site noise-sensitive receptors; however, it is projected that as the project develops, new noise-sensitive receptors could be located near construction source noise activity centers (e.g., well within 2,000 feet as subsequent project phases are developed and each phase includes sensitive uses).

Existing off-site noise sensitive receptors are located in the City of Folsom to the north of the eastern portion of the SPA and in the County of El Dorado to the east of the eastern portion of the SPA. It is projected that the noise-sensitive receptors located in the City of Folsom would not be affected by project construction noise during the daytime hours due to the intervening location of U.S. 50 that serves as a major dominating noise source. In addition, as described above, the City of Folsom exempts daytime construction noise from the applicable standards. Conversely, the County of El Dorado has not adopted an exemption for construction noise that occurs in the daytime hours. Based on the modeling conducted, project-generated noise levels could exceed 55 dB L_{eq} within 850 feet of the activity center. Currently, off-site noise-sensitive receptors in the County of El Dorado are located to the east of the SPA and within 800 feet of proposed areas of construction. Also, if construction activities were to occur during the more noise-sensitive evening and nighttime hours, due to the potential necessity of continuous activity for specific components to maintain structural integrity, project-generated noise levels could exceed 50 and 45 dB L_{eq} within 1,300, and 2,000 feet of the activity centers, respectively. Currently, off-site noise sensitive receptors in both the City of Folsom and the County of El Dorado are located within those project-generated contour distances.

Thus, project construction of on-site elements could expose future on-site and existing off-site sensitive receptors to equipment noise levels that exceed the applicable noise standards and/or result in a substantial increase in ambient noise levels especially during the more noise-sensitive hours of the day. Thus, this would be considered a **direct, significant** impact. **No indirect** impacts would occur. ***[Similar]***

Off-Site Elements

The Proposed Project Alternative includes two off-site roadways that would extend proposed on-site residential streets at the eastern boundary of the SPA to existing roadways in the Stonebriar subdivision. The roadways would extend for a short distance into El Dorado County connecting at Winterfield Drive and Stonebriar Drive opposite the existing junction with Prima Drive. These roadways would not extend into El Dorado Hills under the other four action alternatives. The area around the proposed roadway extensions is currently developed with residential dwellings, and consequently roadway construction would have to be conducted within close proximity to sensitive receptors. Construction of the roadway connections would temporarily result in noise levels that exceed El Dorado County daytime construction noise standards.

Therefore, the potential for temporary, short-term construction-generated noise levels from project implementation of off-site elements to exceed applicable thresholds under the Proposed Project Alternative would be a **direct significant** impact**. No indirect** impacts would occur.

Off-site improvements to the U.S. 50 interchanges at Prairie City Road, Oak Avenue, and Empire Ranch, the Rowberry Drive Overcrossing, and the detention basin west of Prairie City Road are assumed to be constructed during daytime hours as described in the City of Folsom and County of Sacramento Code for which noise levels would be considered exempt from the applicable standards. It should be noted that existing noise levels at the proposed U.S. 50 interchanges and overcrossing (Prairie City Road, Oak Avenue, and Empire Ranch, the Rowberry Drive Overcrossing) are currently dominated by U.S. 50 traffic volumes. Furthermore, the existing and future land uses adjacent to the Prairie City Road, Oak Avenue, and Rowberry Drive Overcrossing are not considered noise sensitive.

Therefore, the potential for temporary, short-term construction-generated noise levels from project implementation of off-site elements to exceed applicable thresholds under the No USACE Permit, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives would be a **direct, less-than-significant** impact. **No indirect** impacts would occur. ***[Lesser]***

Mitigation Measure 3A.11-1: Implement Noise-Reducing Construction Practices, Prepare and Implement a Noise Control Plan, and Monitor and Record Construction Noise near Sensitive Receptors.

To reduce impacts associated with noise generated during project-related construction activities, the project applicant(s) and their primary contractors for engineering design and construction of all project phases shall ensure that the following requirements are implemented at each work site in any year of project construction to avoid and minimize construction noise effects on sensitive receptors. The project applicant(s) and primary construction contractor(s) shall employ noise-reducing construction practices. Measures that shall be used to limit noise shall include the measures listed below:

- Noise-generating construction operations shall be limited to the hours between 7 a.m. and 7 p.m. Monday through Friday, and between 8 a.m. and 6 p.m. on Saturdays and Sundays.
- All construction equipment and equipment staging areas shall be located as far as possible from nearby noise-sensitive land uses.
- All construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation.
- All motorized construction equipment shall be shut down when not in use to prevent idling.
- Individual operations and techniques shall be replaced with quieter procedures (e.g., using welding instead of riveting, mixing concrete off-site instead of on-site).
- Noise-reducing enclosures shall be used around stationary noise-generating equipment (e.g., compressors and generators) as planned phases are built out and future noise sensitive receptors are located within close proximity to future construction activities.
- Written notification of construction activities shall be provided to all noise-sensitive receptors located within 850 feet of construction activities. Notification shall include anticipated dates and hours during which construction activities are anticipated to occur and contact information, including a daytime telephone number, for the project representative to be contacted in the event that noise levels are deemed excessive. Recommendations to assist noise-sensitive land uses in reducing interior noise levels (e.g., closing windows and doors) shall also be included in the notification.
- To the extent feasible, acoustic barriers (e.g., lead curtains, sound barriers) shall be constructed to reduce construction-generated noise levels at affected noise-sensitive land uses. The barriers shall be designed to obstruct the line of sight between the noise-sensitive land use and on-site construction equipment. When installed properly, acoustic barriers can reduce construction noise levels by approximately 8–10 dB (EPA 1971).
- When future noise sensitive uses are within close proximity to prolonged construction noise, noise-attenuating buffers such as structures, truck trailers, or soil piles shall be located between noise sources and future residences to shield sensitive receptors from construction noise.
- The primary contractor shall prepare and implement a construction noise management plan. This plan shall identify specific measures to ensure compliance with the noise control measures specified

above. The noise control plan shall be submitted to the City of Folsom before any noise-generating construction activity begins. Construction shall not commence until the construction noise management plan is approved by the City of Folsom. Mitigation for the two off-site roadway connections into El Dorado County must be coordinated by the project applicant(s) of the applicable project phase with El Dorado County, since the roadway extensions are outside of the City of Folsom's jurisdictional boundaries.

Implementation: Project applicant(s) and primary contractor(s) of all project phases.

Timing: Before and during construction activities in the SPA and within El Dorado Hills.

Enforcement:
1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For the two roadway connections off-site into El Dorado Hills: El Dorado County Development Services Department.

With implementation of Mitigation Measure 3A.11-1, construction would be limited to daytime hours, for which associated noise levels are considered exempt from the provisions of applicable standards established by the City of Folsom and the County of Sacramento. Therefore, on-site and off-site impacts from temporary, short-term exposure of sensitive receptors to increased equipment noise from project construction under the No USACE Permit, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives would be reduced to a **less-than-significant level**. However, because the County of El Dorado has not established an exemption for daytime construction noise levels and sensitive receptors are present near the proposed roadway extensions, Mitigation Measure 3A.11-1 would not reduce impacts to El Dorado County residences under the Proposed Project Alternative related to construction of the off-site roadway connections. Furthermore, the off-site elements in El Dorado Hills fall under the jurisdiction of El Dorado County; therefore, neither the City nor the project applicant(s) would have control over their timing or implementation. Therefore, this impact under the Proposed Project Alternative, and only related to the off-site roadway connections into El Dorado County, would remain **significant and unavoidable**.

IMPACT 3A.11-2 Temporary, Short-Term Exposure of Sensitive Receptors to Increased Traffic Noise Levels from Project Construction. *Project implementation would result in temporary increases in on- and off-site roadway traffic noise associated with project construction. Construction-generated traffic could expose sensitive receptors to noise levels along on- and off-site roadways that exceed the applicable noise standards and/or result in a substantial increase in ambient noise levels.*

On-Site and Off-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80. If developed, construction of these residences would not be anticipated to require a high number of heavy-duty construction equipment, involve intense levels of earth movement, or occur simultaneously within close proximity to sensitive receptors for an extended period of time. Furthermore, no off-site water facilities would be constructed. Consequently, the No Project Alternative would not be anticipated to require in a substantial increase in traffic on off-site or on-site roadways from construction. Thus, temporary, short-term construction-related traffic noise levels under the No Project Alternative would not be anticipated to expose sensitive receptors to or generate levels in excess of applicable standards, or result in a substantial temporary or periodic increase in ambient noise levels. Thus, this would be considered a **direct, less-than-significant** impact. **No indirect** impacts would occur. ***[Lesser]***

NCP, PP, RIM, CD, RHD,

Construction of the Proposed Project and the other four action alternatives would result in additional vehicle trips on the local roadway network from worker commute and the transport of equipment and materials. The exact number of daily trips required for project construction is not known at this time. However, based on professional judgment and experience with similar types of projects, said activities typically do not include more than 500 daily one-way trips even with projects that involve intensive earth movement activities (e.g., soil import/export), which would not be anticipated for construction of any of the on-site or off-site elements. An increase in traffic noise levels of 3 dB CNEL/L_{dn} or greater at noise-sensitive receptors along affected roadway segments would be considered substantial as such is perceivable to the human ear. Typically, when the ADT volume is doubled on a roadway segment in comparison to existing conditions, the resultant increase is approximately 3 dB CNEL/L_{dn}. According to the traffic analysis, ADT volumes on roadway segments in the project vicinity range from 1,800 to149,000 under existing no project conditions. Additionally, the existing no project ADT volumes on those segments (i.e., White Rock Road, between Prairie City Road and the eastern boundary of the SPA, and U.S. 50) anticipated to provide primary access to construction areas would range from 7,600 up to 87,000, respectively. Therefore, project construction would not be anticipated to result in a doubling of ADT volumes (e.g., assuming a maximum of 500 additional one-way trip to roadways with a minimum of 1,800 under existing conditions) along affected roadway segments even when considering the increased tire and engine source noise from these types of trips (e.g., primarily heavy-duty trucks). Thus, implementation of on- and off-site elements of the Proposed Project and the other four action alternatives would not result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project from project construction traffic; or, consequently, expose sensitive receptors to or generate noise levels in excess of applicable standards. As a result, this **direct impact** would be **less than significant**. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.11-3 Temporary, Short-Term Exposure of Sensitive Receptors to Potential Groundborne Noise and Vibration from Project Construction. *Project implementation could expose sensitive receptors to groundborne noise and vibration levels that exceed applicable standards that could cause human disturbance or damage structures.*

On-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80. If developed, construction of these residences would not be anticipated to require high intensity groundborne noise or vibration-generating equipment or activities within close proximity to sensitive receptors. Furthermore, no off-site water facilities would be developed. Therefore, the impact from temporary construction-generated vibration or groundborne noise is considered **direct** and **less than significant**. **No indirect** impacts would occur. ***[Lesser]***

NCP, PP, RIM, CD, RHD,

Construction activities in the SPA may result in varying degrees of temporary groundborne noise and vibration, depending on the specific construction equipment used and activities involved. Groundborne noise and vibration levels caused by various types of construction equipment and activities (e.g., bulldozers, blasting, etc.) are summarized in Table 3A.11-17.

Table 3A.11-17
Representative Groundborne Noise and Vibration Levels for Construction Equipment

Equipment	PPV at 25 feet (in/sec)[1]	Approximate L_v (VdB) at 25 feet[2]
Blasting	1.13	109
Large Bulldozer	0.089	87
Caisson Drilling	0.089	87
Trucks	0.076	86
Rock Breaker	0.059	83
Jackhammer	0.035	79
Small Bulldozer	0.003	58

[1] Where PPV is the peak particle velocity
[2] Where Lv is the root mean square velocity expressed in vibration decibels (VdB), assuming a crest factor of 4.
Source: FTA 2006

With respect to the Proposed Project and the other four action alternatives, maximum groundborne noise and vibration levels would be associated with bulldozing and blasting activities. According to FTA, levels associated with the use of a large bulldozer and blasting are 0.089 and 1.13 in/sec PPV (87 and 109 VdB) at 25 feet, respectively, as shown in Table 3A.11-17.

With respect to the prevention of structural damage, bulldozing would not exceed the Caltrans-recommended level of 0.2 in/sec PPV, even at a distance of 25 feet. However, blasting could exceed this level within 80 feet of said activities based on FTA's recommended procedure for applying a propagation adjustment to these reference levels. In addition, with respect to prevention of human disturbance, bulldozing and blasting could exceed the FTA-recommended level of 78 VdB within 50 and 275 feet, respectively. Long-term operational-related activities would not be anticipated to include any major sources of groundborne noise or vibration. The exact locations of bulldozing activities and blasting points have not been determined at this time; however, the nearest sensitive receptors (e.g., existing off-site El Dorado residences to the east of the steep hillside area where blasting could occur, and planned on-site receptors) could be located within the distances modeled above that are correlated with the Caltrans- and FTA- recommended exceedance levels. Thus, short-term construction could result in the exposure of persons to or generation of excessive groundborne noise or vibration levels. As a result, this would be a **direct significant** impact. **No indirect** impacts would occur. ***[Similar]***

Off-Site Elements

The off-site improvements to the U.S. 50 interchanges at Prairie City Road and the construction of the Oak Avenue and Empire Ranch interchanges, the Rowberry Drive Overcrossing, the El Dorado County roadway connections and the detention basin west of Prairie City Road would be anticipated to include the use of typical heavy construction equipment (e.g., bulldozing). Blasting is not expected to be required for construction of these off-site elements. As described above, bulldozing would not exceed the Caltrans-recommended level of 0.2 in/sec PPV for the prevention of structural damage even at a distance of 25 feet; however, bulldozing could exceed the FTA-recommended level of 78 VdB for the prevention of human disturbance within 50 feet of said activities. The nearest receptor relative to off-site construction elements is approximately 40 feet from the proposed Empire Ranch interchange onramp, which is within the distance modeled above that is correlated with the FTA-recommended exceedance levels. Thus, short-term construction could result in the exposure of persons to or generation of excessive groundborne noise or vibration levels. As a result, this would be a **direct, significant** impact. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure 3A.11-3: Implement Measures to Prevent Exposure of Sensitive Receptors to Groundborne Noise or Vibration from Project Generated Construction Activities.

- To the extent feasible, blasting activities shall not be conducted within 275 feet of existing or future sensitive receptors.
- To the extent feasible, bulldozing activities shall not be conducted within 50 feet of existing or future sensitive receptors.
- All blasting shall be performed by a blast contractor and blasting personnel licensed to operate in the State of California.
- A blasting plan, including estimates of vibration levels at the residence closest to the blast, shall be submitted to the enforcement agency for review and approval prior to the commencement of the first blast.
- Each blast shall be monitored and documented for groundbourne noise and vibration levels at the nearest sensitive land use and associated recorded submitted to the enforcement agency.

Implementation: Project applicant(s) and primary contractor(s) of all project phases.

Timing: Before and during bulldozing and blasting activities in the SPA and within El Dorado Hills and the County of Sacramento

Enforcement:

1. For all project-related improvements that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For the two roadway connections off-site into El Dorado Hills: El Dorado County Development Services Department.
3. For the off-site detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.
4. For the U.S. 50 interchange improvements: Caltrans.

Implementation of Mitigation Measure 3A.11-3 would reduce project-generated groundborne noise and vibration levels and the exposure thereof under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives. However, depending on the exact location of said activities, which is not determined at this time, sensitive receptors could still be exposed to levels that exceed those recommended by Caltrans and FTA for the prevention of structural damage and human disturbance. Furthermore, some of the off-site elements fall under the jurisdiction of El Dorado and Sacramento Counties, or Caltrans; therefore, neither the City nor the project applicant(s) would have control over their timing or implementation. As a result, this **direct** impact would be considered **significant and unavoidable**. ***[Similar]***

IMPACT 3A.11-4 Long-Term Exposure of Sensitive Receptors to Increased Traffic Noise Levels from Project Operation. *Project implementation would result in long-term increases in ADT volumes on affected roadway segments. Increased traffic volumes would result in a substantial (e.g., 3 dB L_{dn}/CNEL) increase in ambient noise levels on- and off-site at nearby noise-sensitive receptors.*

On-Site Elements

NP

Under the No Project Alternative, agricultural activities would continue under the existing AG-80 zoning, along with potential construction of up to 44 rural residences, and no off-site water facilities would be constructed. The increase in ADT volumes on affected roadway segments would be minor compared to existing and predicted future traffic volumes. Therefore, this is considered a **direct, less-than-significant** impact. **No indirect** impacts would occur. ***[Lesser]***

NCP, PP, RIM, CD, RHD

Project implementation would result in an increase in ADT volumes on affected roadway segments and, consequently, an increase in traffic source noise. To assess this impact, traffic noise levels associated with the Proposed Project and the other four action alternatives under existing no project and plus project conditions were predicted for affected roadway segments using FHWA's Highway Noise Prediction Model (FHWA-RD-77-108) (FHWA 1978) and traffic data (e.g., ADT volumes, vehicle speeds, and percent distribution of vehicle types) from DKS Associates, Inc. and Caltrans. This model is based on the California vehicle noise (CALVENO) reference noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and ground attenuation factors and does not assume any natural or human-made shielding (e.g., the presence of vegetation, berms, walls, or buildings).

Table 3A.11-18 summarizes the modeled traffic noise levels at the approximate road corridor boundary under existing no project and existing plus project (i.e., the Proposed Project and the other four action alternatives) conditions. Table 3A.11-18 also includes the net increase under existing plus project (i.e., the Proposed Project and the other four action alternatives) conditions in comparison to existing no project conditions. As shown in Table 3A.11-18, project implementation would result in net increases along affected roadway segments in comparison to existing no project conditions that range from -6.7 to 10.0 under existing plus Proposed Project Alternative conditions; -6.7 to 10.1 under existing plus Resource Impact Minimization Alternative conditions; -8.2 to 10.8 under existing plus Centralized Development Alternative conditions; -6.2 to 10.9 under existing plus Reduced Hillside Development Alternative conditions; and -6.7 to 10.5 under existing plus No USACE Permit Alternative conditions. In Table 3A.11-18, those modeled increases that would be considered substantial (e.g., 3 dB L_{dn}/CNEL where existing or projected future traffic noise levels range between 60 and 65 dB L_{dn}/CNEL, or 1.5 dB L_{dn}/CNEL where existing or projected future traffic noise levels are greater than 65 dB L_{dn}/CNEL) in comparison to existing no project conditions are indicated in bold. Table 3A.11-19 summarizes the modeled traffic noise levels at the approximate road corridor boundary under future (2030) no project and future plus project (i.e., Proposed Project and the other four action alternatives) conditions. Similar to the modeling presented in Table 3A.11-18 for existing conditions, modeled increases for future conditions that would be considered substantial are indicated in bold. As shown, there are numerous roadway segments for which project implementation would result in a substantial permanent increase in ambient noise levels on- and off-site at nearby sensitive receptors (e.g., Empire Ranch Road from Broadstone Parkway to Iron Point Road and Latrobe Road from White Rock Road to Golden Foothills Parkway). As a result, this would be a **direct significant** impact. **No indirect** impacts would occur. ***[Similar]***

Table 3A.11-18
Summary of Modeled Traffic Noise Levels under Existing No Project and Existing Plus Project Conditions

Roadway Segment	Between		L_{dn}/CNEL (dB) at Approx. Road Corridor Boundary										
			NP	PP	Δ in dB	RIM	Δ in dB	CD	Δ in dB	RHD	Δ in dB	NCP	Δ in dB
City of Folsom													
Folsom Boulevard	Glenn Drive	Blue Ravine Road	73.4	73.6	0.1	73.6	0.2	73.7	0.3	73.7	0.3	73.7	0.3
Folsom Boulevard	Mercantile Drive	Iron Point Road	73.8	73.5	-0.3	73.5	-0.3	73.5	-0.3	73.5	-0.3	73.5	-0.3
Folsom Boulevard	Iron Point Road	U.S. 50	74.6	74.1	-0.5	74.1	-0.5	74.2	-0.4	74.2	-0.4	74.2	-0.4
Prairie City Road	Blue Ravine Road	Iron Point Road	70.8	71.8	1.0	71.8	1	72	1.2	72	1.3	71.9	1.1
Prairie City Road	Iron Point Road	U.S. 50	71.0	72.3	1.2	72.4	1.3	72.6	1.6	72.8	1.7	72.4	1.4
Oak Avenue Parkway	East Bidwell Street	Iron Point Road	64.7	68.6	**3.9**	68.5	**3.7**	68.7	**4**	68.8	**4**	68.5	**3.8**
East Bidwell Street	Blue Ravine Road	Oak Avenue Parkway	73.7	73.9	0.2	74	0.2	74	0.3	74.1	0.3	74	0.3
East Bidwell Street	Oak Avenue Parkway	Broadstone Parkway	74.5	75.0	0.5	75.2	0.7	75.2	0.7	75.3	0.8	75.2	0.7
East Bidwell Street	Broadstone Parkway	Iron Point Road	75.2	75.7	0.5	75.8	0.6	75.9	0.7	76.1	0.9	75.9	0.7
East Bidwell Street	Iron Point Road	U.S. 50	76.1	76.2	0.1	76.3	0.3	76.5	0.4	76.6	0.6	76.4	0.4
Empire Ranch Road	Broadstone Parkway	Iron Point Road	60.8	66.1	**5.3**	66.4	**5.6**	66.4	**5.6**	66.6	**5.8**	66.5	**5.6**
Blue Ravine Road	Folsom Boulevard	Prairie City Road	69.4	69.1	-0.3	69.2	-0.3	69.3	-0.1	69.4	0	69.3	-0.1
Blue Ravine Road	Prairie City Road	Riley Street	69.4	68.5	-0.9	68.5	-0.9	68.5	-0.9	68.5	-0.9	68.5	-0.9
Blue Ravine Road	Riley Street	East Bidwell Street	69.4	68.5	-0.9	68.5	-0.9	68.5	-0.9	68.5	-0.9	68.4	-0.9
Blue Ravine Road	East Bidwell Street	Oak Avenue Parkway	69.0	68.3	-0.7	68.2	-0.8	68.2	-0.8	68.3	-0.7	68.2	-0.8
Iron Point Road	Folsom Boulevard	Prairie City Road	70.9	71.2	0.3	71.1	0.2	71.2	0.3	71.4	0.5	71.2	0.3
Iron Point Road	Prairie City Road	Oak Avenue Parkway	71.5	70.0	-1.4	69.6	-1.9	69.7	-1.8	69.7	-1.7	69.5	-1.9
Iron Point Road	Oak Avenue Parkway	Broadstone Parkway	69.3	71.8	**2.5**	71.9	**2.6**	72.3	**3**	72.3	**3**	72	**2.8**
Iron Point Road	Broadstone Parkway	East Bidwell Street	70.0	68.8	-1.1	68.9	-1.1	68.9	-1.1	69.1	-0.9	68.9	-1.1
Iron Point Road	East Bidwell Street	Empire Ranch Road	61.9	55.2	-6.7	55.2	-6.7	53.7	-8.2	55.8	-6.2	55.2	-6.7
Scott Road	U.S. 50	Easton Valley Parkway	65.4	75.4	**10.0**	75.5	**10.1**	76.2	**10.8**	76.3	**10.9**	75.9	**10.5**
Scott Road	Easton Valley Parkway	Road "A"	65.4	70.9	**5.5**	68.9	**3.5**	69.5	**4.1**	70.5	**5.1**	68.4	**3**
Scott Road	Road "A"	White Rock Road	65.4	66.8	1.4	67.3	**1.9**	67.8	**2.4**	68.1	**2.7**	67.2	**1.8**
Oak Avenue Parkway	U.S. 50	Easton Valley Parkway	0.0	70.8	0.0	71.1	0.0	72.2	0.0	72.3	0.0	71.4	0.0
Oak Avenue Parkway	Easton Valley Parkway	Road "A"	0.0	67.6	0.0	66.8	0.0	67.5	0.0	68.1	0.0	66.2	0.0
Oak Avenue Parkway	Road "A"	White Rock Road	0.0	66.5	0.0	65.6	0.0	66.1	0.0	66.3	0.0	65.6	0.0
Empire Ranch Road	U.S. 50	Easton Valley Parkway	0.0	69.9	0.0	71	0.0	70.6	0.0	71.7	0.0	71.3	0.0
Empire Ranch Road	Easton Valley Parkway	Road "A"	0.0	63.1	0.0	64.6	0.0	62.1	0.0	64.9	0.0	64.2	0.0
Empire Ranch Road	Road "A"	White Rock Road	0.0	60.4	0.0	62.8	0.0	60.4	0.0	61.9	0.0	62.2	0.0
Easton Valley Parkway	Prairie City Road	Oak Avenue Parkway	0.0	70.8	0.0	76.4	0.0	77.8	0.0	77.8	0.0	77	0.0
Easton Valley Parkway	Oak Avenue Parkway	1st Street	0.0	71.7	0.0	78.3	0.0	79.2	0.0	79.3	0.0	78.7	0.0
Easton Valley Parkway	1st Street	Scott Road	0.0	70.6	0.0	78	0.0	78.6	0.0	78.8	0.0	78.4	0.0
Easton Valley Parkway	Scott Road	Placerville Road	0.0	72.0	0.0	77.1	0.0	78.1	0.0	78.6	0.0	77.3	0.0
Easton Valley Parkway	Placerville Road	Empire Ranch Road	0.0	66.8	0.0	75.7	0.0	76.2	0.0	76.8	0.0	75.8	0.0

Table 3A.11-18
Summary of Modeled Traffic Noise Levels under Existing No Project and Existing Plus Project Conditions

Roadway Segment	Between		L_{dn}/CNEL (dB) at Approx. Road Corridor Boundary										
			NP	PP	Δ in dB	RIM	Δ in dB	CD	Δ in dB	RHD	Δ in dB	NCP	Δ in dB
Sacramento County													
Folsom Boulevard	Sunrise Boulevard	Mercantile Drive	71.7	71.8	0.1	71.7	0.1	71.7	0.1	71.8	0.1	71.7	0.0
Folsom Boulevard	Mercantile Drive	Hazel Avenue	70.4	70.4	0.0	70.4	0.0	70.4	-0.1	70.4	0.0	70.3	-0.1
Folsom Boulevard	Hazel Avenue	Aerojet Road	68.8	69.2	0.4	69.3	0.5	69.6	0.8	69.6	0.8	69.5	0.7
Folsom Boulevard	Aerojet Road	U.S. 50	69.9	70.5	0.6	70.5	0.6	70.7	0.8	70.8	0.9	70.6	0.7
Grant Line Road	White Rock Road	Centennial Road	70.7	71.9	1.1	72.2	**1.5**	72.4	**1.7**	72.3	**1.6**	72.3	**1.6**
Grant Line Road	Centennial Road	Douglas Road	70.7	71.8	1.1	72.2	**1.5**	72.4	**1.7**	72.3	**1.6**	72.3	**1.6**
Grant Line Road	Douglas Road	Keifer Boulevard	70.3	70.9	0.6	71.4	1.0	71.6	1.3	71.5	1.2	71.6	1.3
Grant Line Road	Keifer Boulevard	Jackson Road	69.8	70.9	1.1	71.3	**1.5**	71.7	**1.9**	71.6	**1.9**	71.6	**1.8**
Grant Line Road	Jackson Road	Sunrise Boulevard	68.9	70.2	1.3	70.6	**1.7**	70.8	**2**	70.8	**2**	70.8	**1.9**
Hazel Avenue	Greenback Lane	Madison Avenue	73.3	73.4	0.1	73.4	0.1	73.4	0.2	73.4	0.2	73.4	0.1
Hazel Avenue	Madison Avenue	Curragh Downs Drive	74.1	74.2	0.2	74.3	0.2	74.3	0.3	74.3	0.2	74.3	0.2
Hazel Avenue	Curragh Downs Drive	Gold Country Boulevard	74.4	74.6	0.2	74.7	0.3	74.8	0.4	74.8	0.4	74.7	0.3
Hazel Avenue	Gold Country Boulevard	U.S. 50 westbound ramp	74.7	75.0	0.3	75.1	0.4	75.2	0.5	75.2	0.5	75.1	0.4
Jackson Road (SR-16)	Grant Line Road	Dillard Road	72.4	72.3	-0.2	72.3	-0.2	72.2	-0.2	72.2	-0.2	72.2	-0.2
Jackson Road (SR-16)	Dillard Road	Stone House Road	71.7	71.6	-0.1	71.6	-0.1	71.6	-0.1	71.6	-0.1	71.6	-0.1
Prairie City Road	U.S. 50 eastbound ramp	Easton Valley Parkway	67.9	74.2	**6.3**	74.3	**6.3**	75.2	**7.2**	75.3	**7.3**	74.3	**6.4**
Prairie City Road	Easton Valley Parkway	White Rock Road	67.9	72.1	**4.2**	72.3	**4.4**	72.5	**4.6**	72.5	**4.6**	72	**4.1**
Scott Road (south)	White Rock Road	Latrobe Road	60.0	62.4	2.5	62.9	2.9	63.3	**3.3**	63.2	**3.2**	63.1	**3.1**
Stonehouse Road	Latrobe Road	Jackson Road (SR-16)	59.3	60.7	1.4	61.1	1.8	61.4	2.1	61.4	2.1	61.4	2.1
Sunrise Boulevard	Jackson Road	Grant Line Road	70.4	70.5	0.1	70.5	0.1	70.5	0.1	70.5	0.1	70.5	0.1
White Rock Road	Fitzgerald Rd	Grant Line Road	66.0	66.8	0.9	66.6	0.7	66.6	0.7	66.7	0.8	66.4	0.4
White Rock Road	Grant Line Road	Prairie City Road	68.0	69.3	1.3	69.6	**1.6**	69.8	**1.8**	69.8	**1.7**	69.7	**1.7**
White Rock Road	Prairie City Road	Scott Road (south)	68.6	70.0	1.4	70.3	**1.6**	70.4	**1.8**	70.4	**1.8**	70.3	**1.6**
White Rock Road	Scott Road (south)	Oak Avenue Parkway	68.6	70.6	**1.9**	71	**2.3**	71.2	**2.6**	71.2	**2.6**	71.1	**2.5**
White Rock Road	Oak Avenue Parkway	Scott Road (north)	68.6	70.4	**1.8**	70.6	**2**	70.9	**2.3**	71.1	**2.5**	70.7	**2**
White Rock Road	Scott Road (north)	Placerville Road	67.4	69.5	**2.1**	69.4	**2**	69.3	**1.9**	69.5	**2.1**	69.2	**1.8**
White Rock Road	Placerville Road	Empire Ranch Road	68.2	70.7	**2.6**	70.7	**2.5**	70.9	**2.7**	71	**2.9**	70.5	**2.4**
White Rock Road	Empire Ranch Road	Carson Crossing Road	68.2	71.3	**3.1**	71.4	**3.3**	71.5	**3.3**	71.7	**3.6**	71.4	**3.2**
City of Rancho Cordova													
Douglas Road	Sunrise Boulevard	Grant Line Road	61.0	61.6	0.5	61.7	0.7	62	1	62.2	1.2	62	1
Sunrise Boulevard	U.S. 50 eastbound ramps	Folsom Boulevard	76.6	76.6	0.0	76.6	0.0	76.6	0.0	76.6	0.0	76.6	0.0
Sunrise Boulevard	Folsom Boulevard	White Rock Road	76.0	75.9	0.0	75.9	0.0	75.9	0.0	75.9	0.0	75.9	0.0
Sunrise Boulevard	White Rock Road	Douglas Road	72.7	72.6	-0.1	72.6	-0.1	72.6	-0.1	72.6	-0.1	72.6	-0.1
Sunrise Boulevard	Douglas Road	Keifer Boulevard	71.7	71.5	-0.2	71.5	-0.2	71.5	-0.2	71.5	-0.2	71.5	-0.2

Table 3A.11-18
Summary of Modeled Traffic Noise Levels under Existing No Project and Existing Plus Project Conditions

Roadway Segment	Between		L_{dn}/CNEL (dB) at Approx. Road Corridor Boundary										
			NP	PP	Δ in dB	RIM	Δ in dB	CD	Δ in dB	RHD	Δ in dB	NCP	Δ in dB
Sunrise Boulevard	Keifer Boulevard	Jackson Road	72.8	72.8	-0.1	72.8	-0.1	72.7	-0.1	72.7	-0.1	72.7	-0.1
White Rock Road	Zinfandel Drive	Sunrise Boulevard	69.3	69.3	0.0	69.3	0.0	69.3	0.0	69.3	0.0	69.3	0.0
White Rock Road	Sunrise Boulevard	Fitzgerald Road	65.2	65.8	0.6	65.7	0.5	65.7	0.5	65.8	0.5	65.5	0.3
White Rock Road	Fitzgerald Road	Grantline Road	66.0	66.8	0.9	66.5	0.6	66.5	0.6	66.7	0.8	66.4	0.4
El Dorado County													
White Rock Road	Carson Crossing Rd	Stonebriar Drive	65.7	68.3	**2.6**	68.2	**2.5**	68.5	**2.8**	68.6	**2.9**	68.1	**2.4**
White Rock Road	Stonebriar Drive	Windfield Way	66.3	69.2	**2.8**	69.3	**3**	69.4	**3**	69.6	**3.3**	69.2	**2.9**
White Rock Road	Windfield Way	Latrobe Road	66.7	67.3	0.6	67	0.2	66.8	0.1	66.9	0.2	66.7	0
White Rock Road	Latrobe Road	Valley View Parkway	66.2	66.5	0.3	66.6	0.4	66.7	0.5	66.7	0.5	66.6	0.4
White Rock Road	Valley View Parkway	U.S. 50	65.1	65.3	0.2	65.4	0.3	65.4	0.3	65.4	0.3	65.4	0.3
El Dorado Hills Boulevard	Serrano Parkway	Saratoga Way	72.7	72.9	0.2	73	0.3	73	0.3	73	0.3	73	0.3
El Dorado Hills Boulevard	Saratoga Way	U.S. 50	72.9	73.2	0.3	73.3	0.4	73.3	0.4	73.3	0.5	73.3	0.4
Latrobe Road	U.S. 50	White Rock Road	70.7	71.0	0.4	70.9	0.2	70.9	0.2	70.9	0.2	70.9	0.2
Latrobe Road	White Rock Road	Golden Foothills Parkway	69.6	70.0	0.3	69.9	0.3	70	0.3	69.9	0.3	70	0.4
Latrobe Road	Golden Foothills Parkway	Investment Boulevard	67.8	68.0	0.2	68.1	0.2	68.1	0.3	68.1	0.3	68.1	0.3
Caltrans Freeways													
U.S. 50	Zinfandel Dr	Sunrise Boulevard	78.9	79.1	0.2	79.1	0.3	79.2	0.3	79.2	0.3	79.1	0.3
U.S. 50	Sunrise Boulevard	Hazel Avenue	78.4	78.8	0.4	78.8	0.4	78.9	0.5	78.9	0.5	78.9	0.5
U.S. 50	Hazel Avenue	Folsom Boulevard	77.9	78.6	0.7	78.7	0.8	78.9	0.9	78.9	1	78.8	0.8
U.S. 50	Folsom Boulevard	Prairie City Road	77.0	78.1	1.1	78.2	1.2	78.3	1.4	78.4	**1.5**	78.2	1.3
U.S. 50	Prairie City Road	Oak Avenue Parkway	76.7	78.0	1.4	78.1	1.4	78.2	**1.5**	78.3	**1.6**	78.2	**1.5**
U.S. 50	Oak Avenue Parkway	Scott Road	76.7	77.1	0.5	77.1	0.5	77.2	0.6	77.4	0.7	77.2	0.5
U.S. 50	Scott Road	Empire Ranch Road	76.7	77.2	0.5	77.7	0.9	77.7	0.9	77.8	1.1	77.7	1
U.S. 50	Empire Ranch Road	Latrobe Road	76.1	76.6	0.5	76.6	0.5	76.7	0.6	76.7	0.6	76.7	0.6
U.S. 50	Latrobe Road	Bass Lake Road	76.1	75.1	-1.0	75.1	-1	75.1	-1	75.2	-0.9	75.1	-1

Notes: CNEL = Community Noise Equivalent Level; dB = A-weighted decibels; L_{dn} = day-night average noise level; Δ = Change; NP = No Project; PP = Proposed Project Alternative; RIM = Resource Impact Minimization Alternative; CD = Centralized Development Alternative; RHD = Reduced Hillside Development Alternative; NCP = No USACE Permit Alternative.

Bold: Represents the potential for substantial increase (e.g., 3 dB L_{dn}/CNEL where existing or projected future traffic noise levels range between 60 and 65 dB L_{dn}/CNEL, 1.5 dB L_{dn}/CNEL where existing or projected future traffic noise levels are greater than 65 dB L_{dn}/CNEL) in comparison to existing no project conditions.

Refer to Appendix J for detailed modeling input data and output results.

Source: Data provided by AECOM in 2009

Table 3A.11-19
Summary of Modeled Traffic Noise Levels under Future (2030) No Project and Future Plus Project Conditions (Without Quarry Truck Trips)

Roadway Segment	Between		L_{dn}/CNEL (dB) at Approx. Road Corridor Boundary										
			NP	PP	Δ in dB	RIM	Δ in dB	CD	Δ in dB	RHD	Δ in dB	NCP	Δ in dB
City of Folsom													
Folsom Boulevard	Glenn Dr	Blue Ravine Rd	73.9	73.8	0.0	73.8	0.0	73.8	0.0	73.8	0.0	73.8	0.0
Folsom Boulevard	Mercantile Drive	Iron Point Road	74.3	74.2	-0.1	74.3	0.0	74.3	0.0	74.2	0.0	74.2	0.0
Folsom Boulevard	Iron Point Road	U.S. 50	75.5	75.4	-0.1	75.4	-0.1	75.4	-0.1	75.4	-0.1	75.4	-0.1
Prairie City Road	Blue Ravine Road	Iron Point Road	72.0	72.5	0.5	72.5	0.5	72.6	0.6	72.6	0.6	72.5	0.5
Prairie City Road	Iron Point Road	U.S. 50	72.4	73.2	0.8	73.2	0.8	73.3	0.9	73.3	0.9	73.2	0.8
Oak Avenue Parkway	East Bidwell Street	Iron Point Road	69.1	70.2	1.1	70.2	1.1	70.3	1.2	70.3	1.2	70.2	1.1
East Bidwell Street	Blue Ravine Road	Oak Avenue Parkway	74.2	74.4	0.2	74.5	0.3	74.6	0.4	74.6	0.4	74.5	0.3
East Bidwell Street	Oak Avenue Parkway	Broadstone Parkway	76.3	76.5	0.2	76.7	0.4	76.7	0.4	76.7	0.5	76.7	0.4
East Bidwell Street	Broadstone Parkway	Iron Point Road	75.9	76.4	0.5	76.6	0.7	76.7	0.8	76.8	0.9	76.7	0.7
East Bidwell Street	Iron Point Road	U.S. 50	76.7	77.3	0.6	77.7	1.0	77.8	1.1	77.9	1.2	77.7	1.0
Empire Ranch Road	Broadstone Parkway	Iron Point Road	70.4	70.8	0.5	71.2	0.8	71.2	0.8	71.3	0.9	71.2	0.8
Blue Ravine Road	Folsom Boulevard	Prairie City Road	68.8	68.9	0.1	68.9	0.1	68.9	0.2	69.0	0.2	68.9	0.1
Blue Ravine Road	Prairie City Road	Riley Street	68.6	68.5	-0.2	68.5	-0.2	68.5	-0.2	68.5	-0.2	68.5	-0.2
Blue Ravine Road	Riley Street	East Bidwell Street	68.9	68.8	-0.1	68.8	-0.1	68.8	-0.1	68.8	-0.1	68.8	-0.1
Blue Ravine Road	East Bidwell Street	Oak Avenue Parkway	68.3	68.2	-0.1	68.2	-0.1	68.2	-0.1	68.2	-0.1	68.2	-0.1
Iron Point Road	Folsom Boulevard	Prairie City Road	70.1	70.4	0.3	70.3	0.2	70.5	0.4	70.6	0.4	70.4	0.2
Iron Point Road	Prairie City Road	Oak Avenue Parkway	71.3	71.1	-0.2	71.1	-0.2	71.4	0.1	71.4	0.1	71.2	-0.1
Iron Point Road	Oak Avenue Parkway	Broadstone Parkway	72.5	73.1	0.6	73.8	1.2	74.1	**1.6**	74.2	**1.6**	73.9	1.4
Iron Point Road	Broadstone Parkway	East Bidwell Street	71.2	71.1	-0.1	71.3	0.1	71.5	0.3	71.6	0.5	71.4	0.2
Iron Point Road	East Bidwell Street	Empire Ranch Road	69.8	70.0	0.2	70.0	0.2	69.9	0.2	70.0	0.3	70.0	0.2
Scott Road	U.S. 50	Easton Valley Parkway	71.7	76.0	**4.4**	76.0	**4.3**	76.5	**4.8**	76.6	**4.9**	76.2	**4.5**
Scott Road	Easton Valley Parkway	Road "A"	71.7	72.7	1.1	72.2	0.5	72.4	0.7	72.9	1.3	71.8	0.2
Scott Road	Road "A"	White Rock Road	71.7	71.4	-0.2	72.0	0.3	72.0	0.4	72.2	0.5	71.9	0.2
Oak Avenue Parkway	U.S. 50	Easton Valley Parkway	0	72.3	0	72.8	0	73.4	0	73.5	0	73.0	0
Oak Avenue Parkway	Easton Valley Parkway	Road "A"	0.0	69.3	0.0	68.9	0.0	69.6	0.0	70.0	0.0	68.7	0.0
Oak Avenue Parkway	Road "A"	White Rock Road	0.0	69.7	0.0	69.2	0.0	69.7	0.0	69.9	0.0	69.4	0.0
Empire Ranch Road	U.S. 50	Easton Valley Parkway	0.0	71.5	0.0	73.5	0.0	73.4	0.0	73.9	0.0	73.7	0.0
Empire Ranch Road	Easton Valley Parkway	Road "A"	0.0	68.5	0.0	71.3	0.0	71.0	0.0	71.4	0.0	71.2	0.0
Empire Ranch Road	Road "A"	White Rock Road	0.0	67.8	0.0	71.1	0.0	70.8	0.0	71.0	0.0	71.0	0.0
Easton Valley Parkway	Prairie City Road	Oak Avenue Parkway	0.0	70.8	0.0	76.4	0.0	77.8	0.0	77.8	0.0	77.0	0.0
Easton Valley Parkway	Oak Avenue Parkway	1st Street	0.0	71.7	0.0	78.3	0.0	79.2	0.0	79.3	0.0	78.7	0.0
Easton Valley Parkway	1st Street	Scott Road	0.0	70.6	0.0	78.0	0.0	78.6	0.0	78.8	0.0	78.4	0.0

Table 3A.11-19
Summary of Modeled Traffic Noise Levels under Future (2030) No Project and Future Plus Project Conditions (Without Quarry Truck Trips)

Roadway Segment	Between		L_{dn}/CNEL (dB) at Approx. Road Corridor Boundary										
			NP	PP	Δ in dB	RIM	Δ in dB	CD	Δ in dB	RHD	Δ in dB	NCP	Δ in dB
Easton Valley Parkway	Scott Road	Placerville Road	0.0	72.0	0.0	77.1	0.0	78.1	0.0	78.6	0.0	77.3	0.0
Easton Valley Parkway	Placerville Road	Empire Ranch Road	0.0	66.8	0.0	75.7	0.0	76.2	0.0	76.8	0.0	75.8	0.0
Road "A"	Prairie City Road	Oak Avenue Parkway	0.0	64.0	0.0	63.8	0.0	65.0	0.0	65.4	0.0	63.2	0.0
Road "A"	Oak Avenue Parkway	Scott Road	0.0	67.8	0.0	66.0	0.0	67.0	0.0	67.8	0.0	65.9	0.0
Road "A"	Scott Road	Placerville Road	0.0	65.1	0.0	67.3	0.0	66.9	0.0	68.3	0.0	64.1	0.0
Road "A"	Placerville Road	Empire Ranch Road	0.0	62.8	0.0	62.0	0.0	57.8	0.0	62.2	0.0	61.4	0.0
Placerville Road	U.S. 50	Easton Valley Parkway	65.1	70.3	**5.1**	64.3	-0.8	64.1	-1.0	64.5	-0.6	64.1	-1.1
Placerville Road	Easton Valley Parkway	Road "B"	65.1	69.4	**4.3**	63.9	-1.3	63.7	-1.5	64.6	-0.5	63.8	-1.4
Road "B"	Placerville Road	Road "A"	65.1	68.0	**2.9**	68.2	**3.1**	68.1	**2.9**	68.9	**3.7**	68.1	**3.0**
Road "B"	Road "A"	White Rock Road	65.1	67.2	**2.1**	67.7	**2.6**	67.8	**2.7**	68.0	**2.8**	67.3	**2.2**
Folsom Boulevard	Sunrise Boulevard	Mercantile Drive	76.0	76.0	0.0	76.0	0.1	76.0	0.0	76.0	0.1	76.0	0.1
Folsom Boulevard	Mercantile Drive	Hazel Avenue	74.4	74.5	0.1	74.6	0.1	74.6	0.1	74.6	0.2	74.6	0.2
Folsom Boulevard	Hazel Avenue	Aerojet Road	69.0	69.4	0.5	69.7	0.7	69.6	0.6	69.7	0.8	69.8	0.8
Folsom Boulevard	Aerojet Road	U.S. 50	75.1	75.0	-0.2	75.1	0.0	75.0	-0.1	75.1	0.0	75.1	0.0
Grant Line Road	White Rock Road	Centennial Road	77.0	77.7	0.7	78.0	1.0	77.9	0.9	78.0	1.0	78.0	1.0
Grant Line Road	Centennial Road	Douglas Road	76.8	77.4	0.7	77.7	0.9	77.6	0.9	77.7	1.0	77.7	0.9
Grant Line Road	Douglas Road	Keifer Boulevard	76.9	77.3	0.4	77.5	0.6	77.4	0.5	77.5	0.6	77.5	0.6
Grant Line Road	Keifer Boulevard	Jackson Road	73.0	73.3	0.4	73.6	0.6	73.5	0.5	73.6	0.6	73.6	0.6
Grant Line Road	Jackson Road	Sunrise Boulevard	73.6	73.9	0.3	74.1	0.5	74.1	0.4	74.1	0.5	74.1	0.4
Hazel Avenue	Greenback Lane	Madison Avenue	74.9	74.9	0.0	75.0	0.1	75.0	0.1	75.0	0.1	75.0	0.1
Hazel Avenue	Madison Avenue	Curragh Downs Drive	76.3	76.4	0.1	76.4	0.2	76.4	0.2	76.5	0.2	76.5	0.2
Hazel Avenue	Curragh Downs Drive	Gold Country Boulevard	80.3	80.5	0.2	80.6	0.2	80.5	0.2	80.6	0.2	80.6	0.2
Hazel Avenue	Gold Country Boulevard	U.S. 50 westbound ramp	80.5	80.6	0.2	80.7	0.3	80.7	0.2	80.8	0.3	80.8	0.3
Jackson Road (SR-16)	Grant Line Road	Dillard Road	72.0	71.9	-0.1	71.8	-0.2	71.9	-0.2	71.8	-0.2	71.9	-0.2
Jackson Road (SR-16)	Dillard Road	Stone House Road	73.0	73.0	0.0	73.0	0.0	73.0	0.0	73.0	0.0	73.0	0.0
Prairie City Road	U.S. 50 eastbound ramp	Easton Valley Parkway	73.8	74.4	0.6	74.3	0.5	74.2	0.4	74.9	1.1	74.9	1.1
Prairie City Road	Easton Valley Parkway	White Rock Road	71.8	74.1	2.3	73.8	2.1	74.0	2.2	74.1	2.4	74.1	2.4
Scott Road (south)	White Rock Road	Latrobe Road	65.0	66.6	1.7	67.1	2.1	66.9	2.0	67.2	2.2	67.2	2.2
Stonehouse Road	Latrobe Road	Jackson Road (SR-16)	65.4	66.6	1.2	66.9	1.5	66.8	1.3	66.9	1.5	66.9	1.5
Sunrise Boulevard	Jackson Road	Grant Line Road	71.5	71.6	0.0	71.6	0.1	71.6	0.1	71.6	0.1	71.6	0.1
White Rock Road	Fitzgerald Road	Grant Line Road	70.0	71.2	1.1	71.2	1.1	71.2	1.2	71.3	1.2	71.4	1.3
White Rock Road	Grant Line Road	Prairie City Road	74.8	75.7	0.8	75.9	1.0	75.8	1.0	75.9	1.1	75.9	1.1
White Rock Road	Prairie City Road	Scott Road (south)	73.6	73.9	0.3	74.2	0.7	74.2	0.6	74.2	0.7	74.3	0.7

Table 3A.11-19
Summary of Modeled Traffic Noise Levels under Future (2030) No Project and Future Plus Project Conditions (Without Quarry Truck Trips)

Roadway Segment	Between		L_{dn}/CNEL (dB) at Approx. Road Corridor Boundary										
			NP	PP	Δ in dB	RIM	Δ in dB	CD	Δ in dB	RHD	Δ in dB	NCP	Δ in dB
White Rock Road	Scott Road (south)	Oak Avenue Parkway	73.7	74.1	0.5	74.5	0.9	74.4	0.8	74.5	0.9	74.6	0.9
White Rock Road	Oak Avenue Parkway	Scott Road (north)	77.1	77.3	0.2	77.6	0.5	77.6	0.5	77.6	0.5	77.7	0.6
White Rock Road	Scott Road (north)	Placerville Road	75.5	75.6	0.1	75.8	0.3	75.8	0.3	75.8	0.4	76.0	0.5
White Rock Road	Placerville Road	Empire Ranch Road	76.1	76.6	0.4	77.4	1.2	77.4	1.3	77.5	1.4	77.6	1.5
White Rock Road	Empire Ranch Road	Carson Crossing Road	76.1	77.7	1.6	74.3	-1.9	74.2	-1.9	74.4	-1.7	74.6	-1.5
Hazel Avenue	Folsom Boulevard connector	Easton Valley Parkway	69.9	70.2	0.3	70.2	0.4	70.2	0.3	70.3	0.4	70.3	0.4
Easton Valley Parkway	Hazel Avenue	Aerojet Road	73.6	74.0	0.4	74.1	0.4	74.0	0.4	74.2	0.5	74.2	0.5
Easton Valley Parkway	Aerojet Road	Alabama Avenue	71.6	73.0	1.4	73.2	1.6	73.1	1.5	73.3	1.7	73.4	1.8
Easton Valley Parkway	Alabama Avenue	Glenborough Road	70.6	72.4	1.9	72.6	2.0	72.5	2.0	72.8	2.2	72.9	2.3
Easton Valley Parkway	Glenborough Road	Prairie City Road	70.9	73.2	2.2	73.3	2.4	73.3	2.4	73.5	2.6	73.6	2.7
Empire Ranch Road	White Rock Road	Carson Crossing Road	0.0	0.0	0.0	75.5	0.0	75.6	0.0	75.5	0.0	75.6	0.0
Douglas Road	Sunrise Boulevard	Villagio Parkway	72.2	72.2	0.0	72.2	0.0	72.2	0.0	72.2	0.0	72.2	0.0
Douglas Road	Villagio Parkway	Rancho Cordova Parkway	71.4	71.3	-0.1	71.2	-0.2	71.2	-0.2	71.2	-0.2	71.2	-0.2
Douglas Road	Rancho Cordova Parkway	Americanos Road	68.8	68.7	-0.2	68.6	-0.2	68.6	-0.2	68.6	-0.2	68.6	-0.2
Douglas Road	Americanos Road	Grant Line Road	69.3	69.2	0.0	69.2	-0.1	69.2	-0.1	69.2	-0.1	69.2	-0.1
Sunrise Boulevard	U.S. 50 eastbound ramps	Folsom Boulevard	77.7	77.7	0.0	77.7	0.0	77.7	0.0	77.7	0.0	77.7	0.0
Sunrise Boulevard	Folsom Boulevard	White Rock Road	75.7	75.6	-0.1	75.6	-0.1	75.6	0.0	75.6	-0.1	75.6	-0.1
Sunrise Boulevard	White Rock Road	Douglas Road	72.8	72.7	-0.1	72.7	-0.1	72.7	-0.1	72.7	-0.1	72.7	-0.1
Sunrise Boulevard	Douglas Road	Keifer Boulevard	72.9	72.9	0.0	73.0	0.0	73.0	0.1	73.0	0.1	73.0	0.1
Sunrise Boulevard	Keifer Boulevard	Jackson Road (SR-16)	71.1	71.1	0.0	71.1	0.1	71.1	0.1	71.2	0.1	71.1	0.1
White Rock Road	Zinfandel Drive	Sunrise Boulevard	64.7	64.7	-0.1	64.6	-0.1	64.6	-0.2	64.6	-0.1	64.4	-0.3
White Rock Road	Sunrise Boulevard	Rancho Cordova Parkway	72.2	72.1	-0.1	72.0	-0.1	72.0	-0.2	72.0	-0.2	72.0	-0.2
White Rock Road	Rancho Cordova Parkway	International Drive	67.5	67.3	-0.1	67.3	-0.2	67.3	-0.2	67.3	-0.2	67.2	-0.3
White Rock Road	International Drive	Rio Del Oro Parkway	68.1	68.6	0.5	68.6	0.5	68.5	0.4	68.7	0.6	68.5	0.4
White Rock Road	Rio Del Oro Parkway	Villagio Parkway	68.2	69.2	0.9	69.1	0.9	69.1	0.9	69.2	1.0	69.0	0.7
White Rock Road	Villagio Parkway	Grant Line Road	71.6	72.7	1.1	72.7	1.2	72.8	1.2	72.9	1.3	72.7	1.1
Easton Valley Parkway	Rancho Cordova Parkway	Hazel Avenue	73.9	73.9	0.0	73.9	0.0	73.9	0.0	73.9	0.0	73.9	0.0
Rancho Cordova Parkway	Easton Valley Parkway	International Dr	73.8	73.7	-0.1	73.7	-0.1	73.8	-0.1	73.8	-0.1	73.8	-0.1
Rancho Cordova Parkway	International Dr.	White Rock Road.	72.9	72.9	-0.1	72.9	-0.1	72.9	0.0	72.9	0.0	72.9	0.0
International Dr.	White Rock Road.	Americanos Parkway	69.3	69.5	0.2	69.5	0.2	69.5	0.2	69.5	0.2	69.5	0.2
International Dr.	Americanos Parkway	Rancho Cordova Parkway	72.0	72.1	0.1	72.0	0.0	72.0	0.0	72.0	0.0	72.0	0.0
International Dr.	Rancho Cordova Parkway	Sunrise Boulevard.	71.8	71.8	0.0	71.8	0.0	71.7	0.0	71.8	0.0	71.7	0.0

Table 3A.11-19
Summary of Modeled Traffic Noise Levels under Future (2030) No Project and Future Plus Project Conditions (Without Quarry Truck Trips)

Roadway Segment	Between		L_{dn}/CNEL (dB) at Approx. Road Corridor Boundary										
			NP	PP	Δ in dB	RIM	Δ in dB	CD	Δ in dB	RHD	Δ in dB	NCP	Δ in dB
Villagio Parkway	White Rock Road.	Americanos Parkway	64.3	65.7	1.4	65.8	1.5	66.0	1.7	66.0	1.7	65.9	1.6
Villagio Parkway	Americanos Parkway	Rancho Cordova Parkway	67.1	67.5	0.5	67.5	0.5	67.6	0.5	67.6	0.5	67.6	0.5
Villagio Parkway	Rancho Cordova Parkway	Douglas Road.	67.6	67.9	0.3	68.0	0.3	68.0	0.4	68.0	0.3	68.0	0.4
White Rock Road	Carson Crossing Road	Stonebriar Drive	72.1	73.7	1.6	70.3	-1.8	70.5	-1.7	70.7	-1.5	70.3	-1.8
White Rock Road	Stonebriar Drive	Windfield Way	69.7	70.1	0.4	71.4	1.6	71.4	1.7	71.4	1.7	71.4	1.7
White Rock Road	Windfield Way	Latrobe Road	69.3	69.8	0.5	70.2	0.9	70.3	1.0	70.3	1.0	70.3	0.9
White Rock Road	Latrobe Road	Valley View Parkway	70.9	70.9	0.0	71.0	0.1	71.0	0.2	71.1	0.2	71.0	0.2
White Rock Road	Valley View Parkway	U.S. 50	72.8	73.0	0.1	73.4	0.6	73.4	0.6	73.4	0.6	73.4	0.6
El Dorado Hills	Serrano Parkway	Saratoga Way	72.8	72.8	0.0	73.2	0.4	73.2	0.4	73.3	0.5	73.2	0.4
El Dorado Hills	Saratoga Way	U.S. 50	74.6	74.1	-0.5	73.7	-0.9	73.7	-0.9	73.8	-0.8	73.7	-0.9
Latrobe Road	U.S. 50	White Rock Road	73.8	73.0	-0.8	72.2	-1.6	72.2	-1.6	72.3	-1.5	72.2	-1.6
Latrobe Road	White Rock Road	Golden Foothills Parkway	74.5	74.6	0.1	75.2	0.7	75.2	0.7	75.2	0.7	75.2	0.7
Latrobe Road	Golden Foothills Parkway	Investment Boulevard	72.1	73.7	1.6	70.3	-1.8	70.5	-1.7	70.7	-1.5	70.3	-1.8
U.S. 50	Zinfandel Dr	Sunrise Boulevard	80.4	80.6	0.1	80.6	0.2	80.7	0.3	80.7	0.3	80.7	0.2
U.S. 50	Sunrise Boulevard	Rancho Cordova Parkway	80.0	80.2	0.2	80.3	0.3	80.4	0.4	80.4	0.4	80.3	0.4
U.S. 50	Rancho Cordova Parkway	Hazel Avenue	80.2	80.4	0.2	80.5	0.3	80.6	0.4	80.6	0.4	80.5	0.4
U.S. 50	Hazel Avenue	Folsom Boulevard	79.4	79.8	0.5	80.0	0.6	80.1	0.8	80.2	0.8	80.1	0.7
U.S. 50	Folsom Boulevard	Prairie City Road	78.1	78.6	0.5	79.4	1.3	79.5	1.4	79.5	1.5	79.4	1.3
U.S. 50	Prairie City Road	Oak Avenue Parkway	78.8	79.0	0.2	79.2	0.4	79.3	0.5	79.4	0.6	79.3	0.5
U.S. 50	Oak Avenue Parkway	Scott Road	77.8	78.3	0.4	78.5	0.6	78.6	0.8	78.7	0.8	78.5	0.7
U.S. 50	Scott Road	Empire Ranch Road	76.9	77.2	0.3	77.8	0.9	77.9	1.0	77.9	1.0	77.9	1.0
U.S. 50	Empire Ranch Road	Latrobe Road	77.6	77.8	0.2	77.7	0.1	77.7	0.1	77.8	0.2	77.7	0.1
U.S. 50	Latrobe Road	Silva Valley Parkway	76.1	76.2	0.2	76.4	0.3	76.4	0.3	76.4	0.4	76.4	0.3

Notes: CNEL = Community Noise Equivalent Level; dB = A-weighted decibels; L_{dn} = day-night average noise level; Δ = Change; NP = No Project; PP = Proposed Project Alternative; RIM = Resource Impact Minimization Alternative; CD = Centralized Development Alternative; RHD = Reduced Hillside Development Alternative; NCP = No USACE Permit Alternative.
Bold: Represents the potential for substantial increase (e.g., 3 dB L_{dn}/CNEL where existing or projected future traffic noise levels range between 60 and 65 dB L_{dn}/CNEL, 1.5 dB L_{dn}/CNEL where existing or projected future traffic noise levels are greater than 65 dB L_{dn}/CNEL) in comparison to existing no project conditions.
Refer to Appendix J for detailed modeling input data and output results.
Source: Data provided by AECOM in 2009

Mitigation Measure 3A.11-4: Implement Measures to Prevent Exposure of Sensitive Receptors to Increases in Noise from Project-Generated Operational Traffic on Off-Site and On-Site Roadways.

To meet applicable noise standards as set forth in the appropriate General Plan or Code (e.g., City of Folsom, County of Sacramento, and County of El Dorado) and to reduce increases in traffic-generated noise levels at noise-sensitive uses, the project applicant(s) of all project phases shall implement the following:

- Obtain the services of a consultant (such as a licensed engineer or licensed architect) to develop noise-attenuation measures for the proposed construction of on-site noise-sensitive land uses (i.e., residential dwellings and school classrooms) that will produce a minimum composite Sound Transmission Class (STC) rating for buildings of 30 or greater, individually computed for the walls and the floor/ceiling construction of buildings, for the proposed construction of on-site noise-sensitive land uses (i.e., residential dwellings and school classrooms).
- Prior to submittal of tentative subdivision maps and improvement plans, the project applicant(s) shall conduct a site-specific acoustical analysis to determine predicted roadway noise impacts attributable to the project, taking into account site-specific conditions (e.g., site design, location of structures, building characteristics). The acoustical analysis shall evaluate stationary- and mobile-source noise attributable to the proposed use or uses and impacts on nearby noise-sensitive land uses, in accordance with adopted City noise standards. Feasible measures shall be identified to reduce project-related noise impacts. These measures may include, but are not limited to, the following:
  - limiting noise-generating operational activities associated with proposed commercial land uses, including truck deliveries;
  - constructing exterior sound walls;
  - constructing barrier walls and/or berms with vegetation;
  - using "quiet pavement" (e.g., rubberized asphalt) construction methods on local roadways; and,
  - using increased noise-attenuation measures in building construction (e.g., dual-pane, sound-rated windows; exterior wall insulation).

Implementation: Project applicant(s) of all project phases.

Timing: Before submittal of tentative subdivision maps or improvement plans; during project construction activities at noise-sensitive receptors in the SPA; at the existing noise-sensitive receptors on Empire Ranch Road from Broadstone Parkway to Iron Point Road; and at the existing noise-sensitive receptors on Latrobe Road from White Rock Road to Golden Foothills Parkway

Enforcement:

1. For all noise-sensitive receptors that would be located within the City of Folsom: City of Folsom Community Development Department.
2. For all noise-sensitive receptors in El Dorado Hills: El Dorado County Development Services Department.
3. For all noise-sensitive receptors in the vicinity the off-site detention basin west of Prairie City Road: Sacramento County Planning and Community Development Department.
4. For all noise-sensitive receptors adjacent to the U.S. 50 interchange improvements: Caltrans.

Significant traffic noise impacts at existing noise-sensitive areas associated with growth of communities are generally very difficult to feasibly mitigate because some areas may already have noise barriers, or new noise barriers may be infeasible from a cost standpoint or ineffective because of openings in the barriers that are commonly required for roadway ingress and egress. Because it may not be feasible to reduce the project-related

long-term operations traffic noise level increases to a less-than-significant level at all existing noise-sensitive land uses along affected roadway segments, this **direct** impact under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives would remain **significant and unavoidable**. **No indirect** impacts would occur. ***[Similar]***

Off-Site Elements

The off-site elements would not be anticipated to result in increased traffic noise levels beyond those associated with the on-site project development. While the road improvement-related elements would accommodate local vehicle traffic, they would not be expected to result in a substantial increase in vehicle trips and associated increase in traffic source noise. (A substantial portion of vehicle trips using the proposed roadway infrastructure elements would be generated by the land uses developed in the SPA and associated traffic source noise levels are discussed in the analysis of on-site elements above.) Some of the roadway infrastructure improvements may actually reduce ADT by enabling more direct travel routes between area destinations. Also, it is not anticipated that the detention basin would generate a substantial number of vehicle trips other than the nominal amount of trips associated with routine maintenance of the facility. As a result, under all five action alternatives this **direct** impact would be **less than significant**. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.11-5 Long-Term Exposure of Sensitive Receptors to Increased Stationary-Source Noise Levels from Project Operation. *Project implementation would result in increases in on-site stationary-source noise levels associated with the proposed residential, commercial, mixed-use, office/industrial, park, and educational land uses. These stationary noise sources could exceed the applicable noise standards (hourly and maximum) and result in a substantial increase in ambient noise levels.*

On-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80. If developed, construction of these residences could include the operation of stationary noise sources related to heating and cooling. Agriculture-related noise sources would not be considered subject to applicable County of Sacramento noise-related policies and regulations. Furthermore, mechanical equipment associated with heating and cooling is typically shielded and would likely be located far from any sensitive receptors due to the rural nature of the area. Furthermore, no off-site water facilities would be constructed. Consequently, long-term operational-related stationary source noise levels under the No Project Alternative would not be anticipated to expose persons to or generate levels in excess of applicable standards, or result in a substantial permanent increase in ambient noise levels. Thus, this would be considered a **direct, less-than-significant** impact. **No indirect** impacts would occur. ***[Lesser]***

NCP, PP, RIM, CD, RHD

This impact assesses the long-term exposure of existing off-site and proposed on-site sensitive receptors to increased stationary-source noise levels from proposed on-site project operations. The land use compatibility of future noise levels at the proposed on-site sensitive receptors from off-site stationary noise sources are discussed in Impact 3A.11-7. It is important to also note for the assessment of this impact that the applicable Code states that the external noise level at residential land uses caused by stationary noise sources must be less than 50 dB for 30 minutes in every hour during the daytime (7 a.m. to 10 p.m.) and less than 45 dB for 30 minutes of every hour during the night time (10 p.m. to 7 a.m.). These criteria are the most stringent of the applicable noise standards. Therefore, all criteria that apply to stationary noise sources would be complied with if external noise levels at

residential land uses were limited to less than 50 dB during the day time and less than 45 dB during the night time.

The land use plans under the Proposed Project and the other four action alternatives feature a mix of various land uses, including residential, commercial, mixed-use, office/industrial, park, and educational. These land uses would introduce new on-site stationary noise sources, including rooftop heating, ventilation, and air conditioning (HVAC) equipment; mechanical equipment; emergency electrical generators; parking lot activities; and loading dock operations. The sources and levels of noise typically associated with these land uses that are stationary in nature are discussed separately below.

Mechanical HVAC Equipment

HVAC equipment could be a primary noise source associated with residential, commercial, and industrial uses. HVAC equipment is often mounted on rooftops, located on the ground, or located within mechanical rooms. The noise sources could take the form of fans, pumps, air compressors, chillers, or cooling towers. Noise levels from HVAC equipment vary substantially depending on unit efficiency, size, and location, but generally range from 45 to 70 dB L_{eq} at a distance of 50 feet (EPA 1971). Accounting for typical attenuation rates of 6 dB per doubling of distance and shielding provided by on-site structures, noise levels attributed to HVAC mechanical systems are not anticipated to exceed stationary-source noise level criteria; however, the potential for impacts still exists. As a result, the impact of noise from HVAC equipment under the Proposed Project, Resource Impact Minimization, Centralized Development, Reduced Hillside Development, and No USACE Permit Alternatives is considered a **direct, potentially significant** impact. **No indirect** impacts would occur. ***[Similar]***

Emergency Electrical Generators

Emergency generators may be used to supply necessary power requirements to vital systems within facilities constructed on the general commercial, community commercial, office/industrial, and mixed-use land uses. Emergency generators are typically operated under two conditions: loss of main electrical supply or preventive maintenance/testing. The operation of mechanical equipment associated with emergency operations is exempt from the noise standards outlined in the Folsom City Municipal Code; thus, this analysis focuses on routine preventive maintenance and testing operations, which are conducted on a periodic basis.

Reference noise-level measurements of emergency generators with rated power outputs from 50 kilowatts (kW) to 125 result in noise levels ranging from 61 to 73 dB L_{eq} and 63–84 dB L_{max} at a distance of 45 feet (EPA 1971, RCNM 2006). Based on these reference noise levels, emergency electrical generators located within 700 feet of noise-sensitive land uses could exceed the City noise standard for daytime stationary-source noise. In addition, generators located within 1,200 feet of noise-sensitive land uses could exceed the City noise standard for nighttime stationary-source noise. As a result, the impact of noise levels from preventive maintenance testing and operation of emergency electrical generators under the Proposed Project, Resource Impact Minimization, Centralized Development, Reduced Hillside Development, and No USACE Permit Alternatives is considered a **direct, potentially significant** impact. **No indirect** impacts would occur. ***[Similar]***

Parking Lot Activities

Parking lots are expected to be included in the office/industrial and community commercial land uses. The details required to accurately predict noise emissions from car parking activities, location, size, and parking demand are not yet established. Therefore, the potential impact of noise generated by parking lot operations is evaluated in this analysis using a representative scenario at a programmatic level.

Reference noise level measurements of parking lot activities indicate that average sound exposure levels (SEL) associated with a single parking event are approximately 71 dB SEL at distance of 50 feet (FTA 2006). Activities making up a single parking event included vehicle arrival, limited idling, occupants exiting the vehicle, door closures, conversations among passengers, occupants entering the vehicle, startup, and departure of the vehicle. A

representative parking lot with 1,000 stalls and 1,000 parking events per hour would produce a noise level that exceeds the City standard for the daytime at distances up to 380 feet and exceeds the nighttime noise standard at distances up to 600 feet. It is possible that the distance between parking lots and residential land uses would be less than 380 feet because shared boundaries between commercial, community commercial, and office/industrial land uses exist under the Proposed Project and the other four action alternatives. Therefore, the impact of noise generated from parking lot activities under the Proposed Project, Resource Impact Minimization, Centralized Development, Reduced Hillside Development, and No USACE Permit Alternatives is considered a **direct, potentially significant** impact. **No indirect** impacts would occur. ***[Similar]***

Loading Dock and Delivery Activity

Noise sources associated with loading dock and delivery activities can include trucks idling, on-site truck circulation, trailer-mounted refrigeration units, pallets dropping, and the operation of forklifts. Reference noise level measurements at loading docks previously undertaken by AECOM indicates that typical hourly average noise levels range from 55 to 60 dB L_{eq} and from 80 to 84 dB L_{max} at a distance of 50 feet (EDAW/AECOM [now AECOM] 2008). Based on these previously measured noise levels, the City's daytime stationary noise criterion would be exceeded approximately 300 feet from the acoustic centre of the loading dock and the nighttime stationary noise criterion would be exceeded approximately 170 feet from the acoustic centre of the loading dock.

It is possible that the distance between loading docks and residential land uses could be less than 170 feet because shared boundaries between commercial, community commercial, and office/industrial land uses are planned under the Proposed Project and the other four action alternatives. Therefore, noise generated from loading dock and delivery activities under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives is considered a **direct, potentially significant** impact. **No indirect** impacts would occur. ***[Similar]***

Emergency Facilities

The proposed land uses would also include emergency facilities such as fire stations that generate high noise levels from alarms and vehicle movements when station crews respond to emergency situations. The noise levels associated with the operation of emergency activities are exempt from the Folsom City Noise Ordinance and proposed locations are anticipated to include perimeter walls around the emergency facilities to shield noise-sensitive receptors from facility operational noise. Thus, this would be considered a **direct, less-than-significant** impact under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives. **No indirect** impacts would occur. ***[Similar]***

Outdoor Recreational and Educational Activities

Activities in the proposed parks, open spaces, and schools would also be sources of noise. The Folsom City Municipal Code considers noise from unlighted public parks, public playgrounds, and public or private schools exempt from the Code from the hours of 7 a.m. to dusk, and from 7 a.m. to 11 p.m. for such facilities that are lighted. In addition, proposed locations are of sufficient distance (greater than 100 feet) or shielded by the eastern hillside with regards to off-site noise-sensitive receptors located in El Dorado Hills. Therefore, noise from outdoor recreational and educational activities under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives is considered a **direct, less-than-significant** impact. **No indirect** impacts would occur. ***[Similar]***

> Mitigation Measure 3A.11-5: Implement Measures to Reduce Noise from Project-Generated Stationary Sources.
>
> The project applicant(s) of all project phases shall implement the following measures to reduce the effect of noise levels generated by on-site stationary noise sources that would be located within 600 feet of any noise-sensitive receptor:

- Routine testing and preventive maintenance of emergency electrical generators shall be conducted during the less sensitive daytime hours (i.e., 7:00 a.m. to 6:00 p.m.). All electrical generators shall be equipped with noise control (e.g., muffler) devices in accordance with manufacturers' specifications.

- External mechanical equipment associated with buildings shall incorporate features designed to reduce noise emissions below the stationary noise source criteria. These features may include, but are not limited to, locating generators within equipment rooms or enclosures that incorporate noise-reduction features, such as acoustical louvers, and exhaust and intake silencers. Equipment enclosures shall be oriented so that major openings (i.e., intake louvers, exhaust) are directed away from nearby noise-sensitive receptors.

- Parking lots shall be located and designed so that noise emissions do not exceed the stationary noise source criteria established in this analysis (i.e., 50 dB for 30 minutes in every hour during the daytime [7 a.m. to 10 p.m.] and less than 45 dB for 30 minutes of every hour during the night time [10 p.m. to 7 a.m.]). Reduction of parking lot noise can be achieved by locating parking lots as far away as possible from noise sensitive land uses, or using buildings and topographic features to provide acoustic shielding for noise-sensitive land uses.

- Loading docks shall be located and designed so that noise emissions do not exceed the stationary noise source criteria established in this analysis (i.e., 50 dB for 30 minutes in every hour during the daytime [7 a.m. to 10 p.m.] and less than 45 dB for 30 minutes of every hour during the night time [10 p.m. to 7 a.m.]). Reduction of loading dock noise can be achieved by locating loading docks as far away as possible from noise sensitive land uses, constructing noise barriers between loading docks and noise-sensitive land uses, or using buildings and topographic features to provide acoustic shielding for noise-sensitive land uses.

Implementation: Project applicant(s) of all project phases.

Timing: Before submittal of improvement plans for each project phase, and during project operations for testing of emergency generators.

Enforcement: City of Folsom Community Development Department.

Implementation of Mitigation Measure 3A.11-5 would reduce stationary source noise from proposed on-site project operations to levels in compliance with the City of Folsom Code to a **less-than-significant** level under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives through the use of noise control devices, restricted operational periods, and required design features.

Off-Site Elements

Project implementation would not create off-site stationary noise sources under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives. Therefore, there would be **no direct** or **indirect** impact. ***[Similar]***

Mitigation Measures: No mitigation measures are required.

IMPACT 3A.11-6 Single-Event Aircraft Noise. *New noise-sensitive land uses proposed in the SPA could be exposed to single-event noise from aircraft overflights. Overflights would not result in interior noise levels that create sleep disturbance.*

On-Site and Off-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80, and no off-site water facilities would be constructed. If developed, the residents of these homes would be subject to similar nighttime flyover conditions as under the Proposed Project Alternative. For the same reasons described below under the Proposed Project Alternative, this **direct** impact is considered **less-than-significant**. **No indirect** impacts would occur. ***[Lesser]***

On-Site Elements

NCP, PP, RIM, CD, RHD

Aircraft approaching and departing Mather Airfield have the potential to pass above the SPA. The single-event noise exposure level (SENEL) is a measure of the acoustical energy generated during an aircraft flyover normalized to a one-second flyover time. This normalization allows for a comparison of events with different flyover times and acoustic output. Thus, a very short duration, high noise level event could be equivalent to a much longer event generating a lower noise level.

According to the *Noise Measurements and Analysis Along the Approach Corridor to Mather Airport* technical memorandum prepared by Harris Miller Miller & Hanson Inc. (November 12, 2002), the average noise levels at the most representative measurement site of the SPA were 76.9 dB SENEL and 66.1 dB L_{max}. In addition, the loudest noise level measured for an aircraft approaching Mather Airport was 87.8 dB SENEL with a maximum instantaneous noise level of 77.4 dB L_{max} as the aircraft passed directly overhead. It should be noted that an aircraft approaching Mather Airport on October 24, 2002 at 7:17 a.m. created the loudest noise measured at 87.8 dB SENEL and 77.4 dB L_{max} (Harris Miller Miller & Hanson 2002). Also, sound levels measured on October 25, 2002 showed that the maximum noise level measured did not exceed 70 dB during the early morning hours (Harris Miller Miller & Hanson 2002).

A typical home with windows and doors closed will provide an exterior to interior noise level reduction of 25 to 30 dB (Veneklasen 1973: 21). In addition, the FAA concluded that a maximum interior noise level of 55 dB would not create significant sleep disturbance (FAA 1985). The loudest noise level measured of an aircraft flyover (77.4 dB L_{max}) would result in an interior noise level between 47.4 and 53.4 dB. Based on the measured noise levels of variable single event nighttime flyovers documented by Harris Miller Miller & Hanson Inc. at the representative noise measurement site for the SPA, aircraft flyovers are not expected to generate interior noise levels greater than 55 dB with windows and doors closed. Therefore, aircraft flyovers would not cause sleep disturbance at sensitive noise receptors in the SPA. As a result, this **direct** impact would be considered **less than significant**. **No indirect** impacts would occur. ***[Similar]***

Off-Site Elements

Implementation of the off-site elements would not include the creation of noise-sensitive land uses. Therefore, there would be no noise incompatibilities between the off-site elements and nighttime flyovers associated with Mather Airport, and **no direct** or **indirect** impacts would occur. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.11-7 Compatibility of Proposed On-Site Land Uses with the Ambient Noise Environment. *The project includes development of on-site noise-sensitive land uses that could be exposed to noise levels that exceed the noise standards set forth in the applicable General Plan and Code.*

On-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80. If developed, these residences would be anticipated to be sparsely developed over approximately 3,500 acres and setback from nearby roadways and stationary noise sources (e.g., future development at the Aerojet site) at sufficient distances where associated noise levels would not exceed applicable standards. Furthermore, no off-site water facilities would be constructed. Therefore, this **direct** impact is considered **less-than-significant**. **No indirect** impacts would occur. ***[Lesser]***

NCP, PP, RIM, CD, RHD

Noise from roadway traffic, and activities at the Aerojet General Corporation and Prairie City SRVA with respect to ambient noise levels in the SPA, are discussed separately below.

Roadway Traffic

Ambient noise levels in the SPA would be influenced largely by vehicle traffic on area roadways. Traffic noise levels within the SPA were modeled using the FHWA's Highway Noise Prediction Model (FHWA-RD-77-108) and traffic data (e.g., ADT volumes, vehicle speeds, and percent distribution of vehicle types) from DKS Associates, Inc. and Caltrans. This model is based on the California vehicle noise (CALVENO) reference noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and ground attenuation factors and does not assume any natural or human-made shielding (e.g., the presence of vegetation, berms, walls, or buildings).

Table 3A.11-18 summarizes the modeled traffic noise levels at the approximate road corridor boundary under existing no project and existing plus project (i.e., the Proposed Project and the other four action alternatives) conditions. Table 3A.11-19 summarizes the modeled traffic noise levels at the approximate road corridor boundary under future (2030) no project and future plus project (i.e., the Proposed Project and the other action alternatives) conditions.

The 60-dB L_{dn}/CNEL noise contours for adjacent roadways (i.e., U.S. 50, White Rock Road, and Prairie City Road) and on-site proposed roadways (i.e., Oak Avenue, Scott Road, Placerville Road, Street "B," Empire Ranch Road, Easton Valley Parkway, and Street "A"), extend onto portions of the SPA, including areas of proposed single-family and multifamily residential development. Predicted noise levels at some proposed on-site residential land uses would exceed the City's land-use compatibility standard of 60 dB L_{dn}/CNEL. In addition, exterior noise levels that exceed 70 L_{dn}/CNEL would also be anticipated to exceed the City's interior noise standard of 45 L_{dn}/CNEL, based on a standard interior to exterior reduction of 25 dB. Thus, exposure of proposed on-site land uses to traffic noise levels would be considered a **direct, significant** impact. **No indirect** impacts would occur. ***[Similar]***

Aerojet General Corporation

Aerojet land is located south of U.S. 50 between Mercantile Drive and Prairie City Road, west of the SPA. Primary noise-generating activities at this facility have historically been associated with the testing of rocket and high-performance aircraft engines for use in military and aerospace applications. GenCorp Realty Investments,

Aerojet's parent company, is currently in the process of phasing out the testing of the large-diameter rocket and aircraft engines at this facility, although testing of smaller engines would continue (Gunderson, pers. comm., 2005). Typically, the 65- and 75-dB noise contours associated with the firing of smaller rocket engines (60,000 pounds of thrust) extend to approximately 7,920 and 4,224 feet, respectively, from test stands. Noise from engine testing typically occurs during the daytime hours for periods of 1 to 60 seconds in duration (Sacramento County 1998.) Additional on-site noise sources associated with this facility include industrial operations such as manufacturing, cleaning, maintenance, heating and cooling, equipment operations, and pollution control activities (Sacramento County 1998; Gunderson 2005). Noise from these additional noise sources can generate noise levels ranging from less than 50 dB to approximately 110 dB at 3 feet from the source (EPA 1971). Because of the distance between the projects site and such activities, combined with information that testing typically occurs during the less-sensitive daytime hours for short durations (e.g., 1 to 600 seconds), activities at the Aerojet facility would not be anticipated to exceed the City's nontransportation noise standards (e.g., 50 dB for 30 minutes in every hour during the daytime [7 a.m. to 10 p.m.]). As a result this **direct** impact is considered **less-than-significant**. **No indirect** impacts would occur. ***[Similar]***

Prairie City State Vehicular Recreation Area

Noise from use of recreational off-road vehicles on the Prairie City SRVA to the southwest of the SPA could exceed City noise standards at noise-sensitive receptors in the SPA. Noise emissions from the Prairie City SRVA were predicted using the assumption that noise produced by all vehicles operating on the site would be limited to 96 dB at 20 inches from the tail pipe as required by state law. The boundary of the Prairie City SRVA is approximately 1,600 feet from the nearest noise-sensitive development in the SPA. At this distance, the worst-case simultaneous operation of four off-road vehicles operating in the same location for an extended period of time on the SRVA boundary and emitting the maximum legal noise level would produce a noise level of approximately 40 dB at the nearest residential receptor in the SPA, which would not be anticipated to exceed the City's noise standards. Therefore, this potential **direct** impact is considered **less-than-significant**. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure: Implement Mitigation Measure 3A.11-4.

Timing: Before submittal of tentative subdivision maps or improvement plans

Enforcement: Folsom Community Development Department

Typically, a 6-foot sound wall would reduce noise levels from approximately 5-6 dB and for each additional foot of wall another 1 dB (Caltrans 1998). Thus, implementation of Mitigation Measure 3A.11-4 would reduce on-site traffic noise levels at proposed noise-sensitive land uses to levels conditionally acceptable with mitigation (i.e., 65 dB L_{dn}/CNEL). As a result, this direct impact would be reduced to a **less-than-significant** level under all five action alternatives.

Off-Site Elements

Implementation of the off-site elements would not include the creation of noise-sensitive land uses. Therefore, there would be no incompatibilities between City or Sacramento or El Dorado County noise standards for land uses and the off-site elements, and **no direct** or **indirect** impacts would occur. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

3A.11.4 RESIDUAL SIGNIFICANT IMPACTS

Implementation of mitigation measures contained in this section would reduce impacts associated with temporary, short-term exposure of sensitive receptors to increased equipment noise and groundborne noise and vibration

from project construction and the long-term exposure of sensitive receptors to increased operational traffic noise levels from project operation, but not to a less-than-significant level, because noise levels would (or could potentially) still exceed applicable thresholds and, therefore, residual significant impacts would occur. All other noise impacts would be reduced to a less-than-significant following implementation of mitigation measures contained in this section.

Additionally, some of the off-site elements fall under the jurisdiction of El Dorado and Sacramento Counties and/or Caltrans; therefore, neither the City nor the project applicant(s) would have control over their timing or implementation. Therefore, the impacts related to those off-site facilities that are under the jurisdiction of El Dorado County, Sacramento County, or Caltrans, are considered potentially significant and unavoidable. If El Dorado County, Sacramento County, and Caltrans cooperate in implementation of the recommended mitigation measures, then those impacts would be reduced to a less-than-significant level.

This section was prepared by RMC Water and Environment.

3B.11 NOISE – WATER

3B.11.1 AFFECTED ENVIRONMENT

This section provides a description of the existing ambient noise environment for the "Water" Study Area. In the context of the actions proposed as part of the Off-site Water Facility Alternatives, emphasis is placed on portions of the "Water" Study Area where physical environmental changes would occur. As provided in Chapter 2, "Alternatives," physical improvements associated with the Off-site Water Facility Alternatives are limited to areas within Zone 4; whereas no physical improvements are proposed within Zones 1, 2, or 3. For this reason, the, "Noise" analysis for the "Water" project is focused primarily on Zone 4.

NOISE EXPOSURE AND COMMUNITY NOISE

Community noise varies continuously over a period of time with respect to the contributing sound sources of the community noise environment. Community noise is primarily the product of many distant noise sources which constitute a relatively stable background noise exposure, with the individual contributors unidentifiable. The background noise level changes throughout a typical day, but does so gradually, corresponding with the addition and subtraction of distant noise sources such as traffic and atmospheric conditions. Community noise is constantly changing throughout the day due to short duration single-event noise sources, such as aircraft flyovers, vehicle passbys, or sirens. These successive additions of sound to the community noise environment vary the community noise level from instant to instant. This requires the measurement of noise exposure over a period of time to legitimately characterize a community noise environment and evaluate cumulative noise impacts. This time-varying characteristic of environmental noise is described using statistical noise descriptors. The most frequently used noise descriptors are summarized below (Caltrans 1998):

- **L_{eq}:** the equivalent sound level is used to describe noise over a specified period of time, typically one hour, in terms of a single numerical value. The L_{eq} is the constant sound level which would contain the same acoustic energy as the varying sound level, during the same time period (i.e., the average noise exposure level for the given time period).

- **L_{max}:** the instantaneous maximum noise level for a specified period of time.

- **L_{dn}:** 24-hour day and night A-weighed noise exposure level which accounts for the greater sensitivity of most people to nighttime noise by weighting noise levels at night ("penalizing" nighttime noises). Noise between 10:00 p.m. and 7:00 a.m. is weighted (penalized) by adding 10 dB to take into account the greater annoyance of nighttime noises.

EFFECTS OF NOISE ON PEOPLE

The effects of noise on people can be placed in three categories:

1. subjective effects of annoyance, nuisance, dissatisfaction;
2. interference with activities such as speech, sleep, learning; and
3. physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial settings can experience noise in the last category. A satisfactory method for measuring the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction does not exist. However, a wide variation in individual thresholds of annoyance does exist, and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted, i.e., the "ambient noise" level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise would be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur (Caltrans 1998):

- except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- outside of the laboratory, a 3 dBA change is considered a perceivable difference;
- a change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- a 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause adverse response.

These relationships occur in part because of the logarithmic nature of sound and the decibel system. The human ear perceives sound in a nonlinear fashion hence the decibel scale was developed. Because the decibel scale is based on logarithms two noise sources do not combine in a simple additive fashion, rather logarithmically. For example, if two identical noise sources produce noise levels of 50 dB, the combined sound level would be 53 dB, not 100 dB. Because of this sound characteristic, if two noise emission sources, one producing a noise level greater than 9 dB than the other, the contribution of the quieter noise source is negligible and the sum of the noise sources is that of the louder noise source.

NOISE ATTENUATION

Stationary point sources of noise, including stationary mobile sources such as idling vehicles, attenuate (lessen) at a rate between 6 dBA for hard sites and 7.5 dBA for soft sites for each doubling of distance from the reference measurement. Hard sites are those with a reflective surface between the source and the receiver such as parking lots or smooth bodies of water. No excess ground attenuation is assumed for hard sites and the changes in noise levels with distance (drop-off rate) is simply the geometric spreading of the noise from the source. Soft sites have an absorptive ground surface such as soft dirt, grass or scattered bushes and trees. In addition to geometric spreading, an excess ground attenuation value of 1.5 dBA (per doubling distance) is normally assumed for soft sites. Line sources (such as traffic noise from vehicles) attenuate at a rate between 3 dBA for hard sites and 4.5 dBA for soft sites for each doubling of distance from the reference measurement (Caltrans 1998).

EXISTING CONDITIONS

Existing Noise Environment

Emphasis for the description of the affected environment is placed on locations within Zone 4 of the "Water" Study Area where physical improvements would be constructed and operated as part of the Off-site Water Facility Alternatives. Results from a countywide community noise survey indicate that typical noise levels in noise-sensitive areas of the county are in the range of 50 to 60 dBA L_{dn}. The existing noise environment within Zone 4 of the "Water" Study Area is primarily influenced by the noise produced from the following sources:

- vehicle traffic along major roadways including Sunrise Boulevard, Douglas Road, Florin Road, and SR 16, Folsom Boulevard, Grant Line Road, and U.S. Highway 50 (U.S. 50);
- Regional Transit Light Rail (located along the Folsom Boulevard/U.S. 50 corridor);
- Mather Airport (formerly Mather Air Force Base);

- Operations at Aerojet, south of U.S. 50 between Hazel Avenue and Prairie City Road, include testing of rocket and high-performance aircraft engines for use in military and aerospace applications. However, GenCorp Realty Investments, Aerojet's parent company, is currently in the process of phasing out the testing of the large-diameter rocket and aircraft engines at this facility, although testing of smaller engines is expected to continue (Sacramento County 2008);

- Cordova Shooting Center, located on Douglas Road west of Sunrise Boulevard, includes weapons firing with noise levels ranging from approximately 97 to 112 dBA per round at approximately 50 feet. Based on these noise levels, predicted maximum noise levels of 70 dBA could occur at a distance of 1/2-half to 1 mile from this facility, depending on local shielding and atmospheric conditions (County of Sacramento 1993);

- Kiefer Landfill (located at 12701 Kiefer Boulevard, surrounded by undeveloped rolling terrain);

- Sacramento Raceway (located on Excelsior Road north of Jackson Highway/SR 16);

- Aggregate mining operations along White Rock, Grant Line, and Scott Roads; and

- Off-Highway Vehicle (OHV) Use at the Prairie City State OHV area.

In addition to the sources identified above, the Sunrise Boulevard corridor includes a variety of industrial operations ranging from heavy-equipment repair facilities, equipment and material storage yards, loading-dock operations, concrete batch plants, and various manufacturing operations. Industrial land uses are also located in the Security Park area, north of Douglas Road. Hours of operation for these land uses vary, but are generally limited to daytime hours. Noise levels associated with industrial land uses can vary greatly depending on the activities conducted. Activities involving the use of heavy-duty equipment such as front-end loaders, forklifts, and diesel-powered trucks are common noise sources typically associated with these land uses. Noise typically associated with industrial operations, including the use of heavy-duty equipment, can reach maximum levels of approximately 85 dBA at 50 feet (Caltrans 2004).

Sensitive Receptors

Although noise pollution can affect all segments of the population, certain groups and land uses are considered more sensitive to ambient noise levels than others, sensitivity being a function of noise exposure (in term of both exposure duration and insulation from noise) and the types of activities involved. Children, the elderly, and the chronically or acutely ill are the most sensitive population groups.

Some land uses are considered more sensitive to changes in ambient noise levels than others, sensitivity being a function of noise exposure (in term of both exposure duration and insulation from noise) and the types of activities involved. Residential land uses are generally more sensitive to noise than commercial and industrial land uses. Sensitive receptors in the vicinity of the conveyance alignment alternatives include residences located on or adjacent to the roadway where construction would occur. The White Rock Water Treatment Plant (WTP) site is located within an undeveloped area within no residences located within a 1/2 mile of the site. However, multifamily high-density residential uses area planned within the SPA approximately 300 to 400 feet to the north of the White Rock WTP site.

Similarly, no sensitive land uses are currently located within 1/2 mile of the Folsom Boulevard WTP. However, medium- and high-density residential uses are proposed adjacent and to the west of the Folsom Boulevard WTP based on the current land use diagram for planned City of Rancho Cordova's Westborough Specific Plan.

GROUNDBORNE VIBRATION

Groundborne vibration consists of rapidly fluctuating motions or waves, which are also measured in decibels. Construction activities, train operations, and street traffic are some of the most common external sources of

vibration that can be perceptible inside structures. Differences in subsurface geologic conditions and distance from the source of vibration will result in different vibration levels characterized by different frequencies and intensities. In all cases, vibration amplitudes will decrease with increasing distance. High frequency vibrations reduce much more rapidly than low frequencies, so that low frequencies tend to dominate the spectrum at large distances from the source. Discontinuities in the soil strata can also cause diffractions or channeling effects that affect the propagation of vibration over long distances.

Human response to vibration is difficult to quantify. Vibration can be felt or heard well below the levels that produce any damage to structures. The duration of the event has an effect on human response, as does frequency. Generally, as the duration and vibration frequency increase, the potential for adverse human response increases. While people have varying sensitivities to vibrations at different frequencies, in general they are most sensitive to low-frequency vibration. Vibration in buildings may be perceived as motion of building surfaces or rattling of windows, items on shelves, and pictures hanging on walls. Vibration of building components can also take the form of an audible low-frequency rumbling noise, which is referred to as groundborne noise.

Groundborne noise is usually only a problem when the originating vibration spectrum is dominated by frequencies in the upper end of the range (60 to 200 Hz), or when the structure and the source of vibration are connected by foundations or utilities, such as sewer and water pipes. To assess a project's vibration impacts, Caltrans has prepared a publication concerning vibration impact assessment, entitled the "Transportation and Construction-Induced Vibration Guidance Manual," which was prepared in 2004. The guidance manual uses peak particle velocity (PPV) to quantify vibration amplitude. Peak particle velocity is defined as the maximum instantaneous peak of the vibratory motion.

Table 3B.11-1 identifies acceptable vibration limits for transportation and construction projects based on guidelines prepared by Caltrans.

Table 3B.11-1
Typical Groundborne Vibration Thresholds

Structure and Condition	Transient Sources PPV at 25 feet (in/sec)	Continuous/Frequent Intermittent Sources PPV at 25 feet (in/sec)
Extremely fragile historic buildings, ruins, and ancient monuments	0.12	0.08
Fragile buildings	0.20	0.10
New residential structures with gypsum board walls/ceilings	1.00	0.50
Modern Industrial/commercial buildings	2.00	0.50
Strongly perceptible	0.90	0.10

PPV = Peak particle velocity
Source: Caltrans 2004

3B.11.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Federal regulations establish noise limits for medium and heavy trucks (more than 4.5 tons, gross vehicle weight rating) under 40 CFR, Part 205, Subpart B. The federal truck passby noise standard is 80 dB at 15 meters from the vehicle pathway centerline. These controls are implemented through regulatory controls on truck manufacturers. In addition to noise standards for individual vehicles, under regulations established by the U.S. Department of Transportation's Federal Highway Administration, noise abatement must be considered for certain federal or federally-funded projects. Abatement is an issue for new highways or significant modification of an existing

freeway. The agency must determine if the project would create a substantial increase in noise or if the predicted noise levels approach or exceed the Noise Abatement Criteria.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

The state establishes noise limits for vehicles licensed to operate on public roads. For heavy trucks, the state passby standard is consistent with the federal limit of 80 dB. The State passby standard for light trucks and passenger cars (less than 4.5 tons, gross vehicle rating) is also 80 dB at 15 meters from the centerline. These standards are implemented through controls on vehicle manufacturers and by state and local laws enforced against vehicle operators. For new roadway projects, Caltrans employs the Noise Abatement Criteria, discussed above in connection with the Federal Highway Administration.

The state has also established noise insulation standards for new multi-family residential units, hotels, and motels that would be subject to relatively high levels of transportation-related noise. These requirements are collectively known as the California Noise Insulation Standards (California Code of Regulations, Title 24). The noise insulation standards set forth an interior standard of DNL 45 dB for any habitable room. They also require an acoustical analysis demonstrating how dwelling units have been designed to meet this interior standard where such units are proposed in areas subject to noise levels greater than DNL 60 dB. Title 24 standards are typically enforced by local jurisdictions through the building permit application process.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

Sacramento County General Plan, Noise Element and Noise Control Ordinance

The Noise Element of the County General Plan identifies compatible noise environments for different types of land uses in the City. Table 3B.11-2 contains exterior noise standards for residential areas. These guidelines were used in evaluating the noise effects of the Off-site Water Facilities. Table 3B.11-3 provides the noise standards contained in the County's Noise Ordinance Standards. The County's noise ordinance is based on the application of a cumulative duration of an intrusive sound, whereby the longer the duration, the lower the standard.

The Noise Control Ordinance sets limits for exterior noise levels on designated agricultural and residential property. The standards found in the Noise Control Ordinance are based on the duration of noise on private property over one-hour periods. The ordinance is primarily concerned with regulating noise other than noise generated by transportation noise sources such as passing cars or aircraft flyovers. The ordinance limits the duration of sound based on many factors, including the type of source, tonal characteristics of the source, ambient noise levels, and time of day by using a system of noise criteria not to be exceeded based on the duration of noise over any given hour. Table 4.4-5 of the ordinance summarizes the exterior noise standards that would apply to the project.

Table 3B.11-2
Sacramento County Noise Level Standards for Residential Areas

Statistical Noise Level Descriptor	Exterior Noise Level Standard	
	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
L_{50}	50 dB	45 dB
L_{max}	70 dB	65 dB

Notes: L_{max} = the instantaneous maximum noise level for a specified period of time; db = decibels
These standards are for planning purposes and may vary from standards of the County Noise Ordinance, which are established for enforcement purposes.
These standards apply to new or existing residential areas affected by new or existing non-transportation sources.
Source: Sacramento County 1993

Table 3B.11-3 Sacramento County Noise Ordinance Standards			
Cumulative Duration of the Intrusive Sound	Noise Level Descriptor	Exterior Noise Standard (dB)	
		Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
30-60 minutes per hour	L_{50}	55	50
15-30 minutes per hour	L_{25}	60	55
5-15 minutes per hour	L_{05}	65	60
1-5 minutes per hour	L_{02}	70	65
Level not to be exceeded at any time	L_{max}	75	70
Source: Sacramento County 1993			

In addition to the above standards, an off-site activity may not create interfering or disturbing noise levels at any school, hospital, or church that exceed the exterior noise level standards or that are 10 dBA above ambient noise levels.

Under Section 6.68.090, the following activities are exempt from the quantitative limits of the Noise Control Ordinance described above:

- School activities, including bands, athletic and entertainment events.
- Outdoor gatherings, public dances, shows and sporting events. These activities may require a license or permit.
- Activities on parks, public playgrounds, and school grounds owned and operated by public entity or private school.
- Emergency activities and equipment.
- Agricultural activities between 6 a.m. and 8 p.m. or whenever using equipment to protect crops.
- Construction, demolition or similar activity, provided they occur between 6 a.m. and 8 p.m. Monday through Friday, and 7 a.m. and 8 p.m. on weekends.
- Residential property maintenance, provided it occurs between 6 a.m. and 8 p.m. Monday through Friday, and 7 a.m. and 8 p.m. on weekends.
- United States airports, aircraft, and armed service facilities.
- Noise and land use regulations related to airports.

Rancho Cordova General Plan and Noise Ordinance

The City of Rancho Cordova's General Plan was adopted in June 2006 and outlines goals and policies that set performance standards for stationary noise sources and maximum allowable noise exposure from transportation noise sources. Applicable noise standards as specified in the Noise Element of the City of Rancho Cordova's General Plan, are included below as Table 3B.11-4.

Table 3B.11-4
City of Rancho Cordova Noise Level Standards

Stationary Noise Source	Noise Level Descriptor	Exterior Noise Standard (dB)	
		Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
Typical	Hourly L_{eq}, dB	55	45
Tonal, impulsive, repetitive, or consist primarily of speech or music	Hourly L_{eq}, dB	50	40

Notes:
The City may impose noise level standards which are more or less restrictive than those specified above based upon determination of existing low or high ambient noise levels.
Source: Rancho Cordova General Plan, 2006

According to Rancho Cordova's Noise Ordinance, activities generally considered to be exempt from the noise standards include construction activities (provided that they occur between the daytime hours of 7 a.m.–6 p.m., Monday through Saturday, and 9 a.m.–6 p.m. on Sunday), school athletic and entertainment events, activities conducted on public parks and playgrounds, and transportation noise.

3B.11.3 Environmental Consequences and Mitigation Measures

Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. These thresholds also encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. For the purposes of this analysis, noise impacts as a result of the Off-site Water Facilities would be considered significant if it would:

- expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- expose of persons to or generate of excessive groundborne vibration or groundborne noise levels;
- create a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- create a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- for a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels; or
- for a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

Analysis Methodology

This section provides a programmatic impact analysis of potential noise and vibration impacts as they relate to construction and operation of the Off-site Water Facility Alternatives. The significance of Off-site Water

Facilities-related noise impacts was determined by comparing estimated Off-site Water Facilities-related noise levels, based on published literature, to existing noise levels within Zone 4 of the "Water" Study Area as described in other recently-prepared environmental documents for other projects within Zone 4 including:

- White Rock Road Widening Project, Phases A, B, and C, EIR;
- Freeport Regional Water Project EIR/EIS;
- Easton Project EIR for the Easton Valley Parkway; and
- Rio del Oro Specific Plan EIR/EIS.

For the purposes of analysis, an increase of at least 3 dBA is usually required before most people will perceive a change in noise levels, and an increase of 5 dBA is required before the change will be clearly noticeable. A common practice has been to assume that minimally perceptible to clearly noticeable increases of 3 to 5 dBA represents a significant increase in ambient noise levels. A sliding scale is commonly used to identify the significance of noise increases, allowing greater increases at lower absolute sound levels than at higher sound levels. This approach is based on research that relates changes in noise to the percentage of individuals that would be highly annoyed by the change in ambient noise levels. Based on this approach, noise impacts are "generally significant" if the Off-site Water Facility Alternative would cause noise standards or ordinances to be exceeded, or increases in the community noise levels of greater than 5 dBA in built-up areas, or increases by 10 dBA or more in rural areas.

To ensure that potentially noise sensitive land uses that are not constructed and, hence, acknowledged under the 2008 baseline, this analysis also consider planned land uses that have received approval, but are not yet construction.

ISSUES NOT DISCUSSED FURTHER IN THIS EIR/EIS

Airport Noise—The project would not involve the construction of sensitive land uses within two miles of a public or private airport and, therefore, would not expose people to excessive airport noise levels. Thus, this issue is not discussed further in this EIR/EIS.

IMPACT ANALYSIS

Impacts that would occur under each of the Off-site Water Facility Alternatives are identified as follows:

NCP (No USACE Permit Alternative)

PA (Proposed Off-site Water Facility Alternative)

1 (Off-site Water Facility Alternative 1 – Raw Water Conveyance – Gerber/Grant Line Road Alignment and White Rock WTP)

1A (Off-site Water Facility Alternative 1A Raw Water Conveyance – Gerber/Grant Line Road Alignment Variation and White Rock WTP)

2 (Off-site Water Facility Alternative 2 Treated Water Conveyance – Douglas Road Alignment and Vineyard SWTP)

2A (Off-site Water Facility Alternative 2A Treated Water Conveyance – Excelsior Road Alignment Variation and Vineyard SWTP)

2B (Off-site Water Facility Alternative 2B Treated Water Conveyance – North Douglas Tanks Variation and Vineyard SWTP)

3 (Off-site Water Facility Alternative 3 Raw Water Conveyance – Excelsior Road Alignment and White Rock WTP)

3A (Off-site Water Facility Alternative 3A Raw Water Conveyance – Excelsior Road Alignment Variation and White Rock WTP)

4 (Off-site Water Facility Alternative 4 Raw Water Conveyance – Easton Valley Parkway Alignment and Folsom Boulevard WTP)

4A (Off-site Water Facility Alternative 4A Raw Water Conveyance – Easton Valley Parkway Alignment Variation and Folsom Boulevard WTP).

The impacts for each alternative are compared relative to the PA at the end of each impact conclusion (i.e., similar, greater, lesser).

IMPACT 3B.11-1 **Temporary, Short-Term Exposure of Sensitive Receptors to Increased Equipment Noise from Project Construction.** *The Off-site Water Facility Alternatives could expose persons to or generate noise levels in excess of applicable City and County standards.*

NCP, PA, 1, 1A, and 4

Construction of the Off-site Water Facilities under these alternatives would occur in rural and industrial portions of the eastern Sacramento County. Over the entire length of these conveyance alternatives, there are approximately 25 rural residences that would be located within 50 to 100 feet of Off-site Water Facilities construction. Construction activities would generally involve excavation, concrete removal, earth movement, stockpiling, trenching activities, and truck hauling. These construction activities would generate temporary and intermittent noise at and near the conveyance pipeline alignment during the 36-month construction schedule. Noise levels would fluctuate depending on the particular type, number, and duration of use of various pieces of construction equipment. In addition, construction-related material haul trips would raise ambient noise levels along haul routes depending on the number of haul trips and the types of vehicles used. These activities would be more pronounced at the booster pump station facility where construction activities would occur for an extended duration of time. Table 3B.11-5 shows typical noise levels produced by various types of construction equipment at a distance of 50 feet.

Table 3B.11-5
Typical Noise Levels for Construction Equipment

Equipment	Typical Noise Levels (dBA, at 50 feet)	Equipment	Typical Noise Levels (dBA, at 50 feet)
Front loaders	85	Forklifts	76-82
Backhoes, excavators	80-85	Pumps	76
Tractors, dozers	83-89	Generators	81
Graders, scrapers	85-89	Compressors	83
Trucks	88	Pneumatic tools	85
Concrete pumps, mixers	82-85	Jack hammers, rock drills	98
Cranes (movable)	83	Pavers	89
Cranes (derrick)	88	Compactors	82
Pipelayers	83-88	Drill rigs	70-85

Source: Adapted from U.S. Environmental Protection Agency, Noise from Construction Equipment and Operations, 1972 and U.S. Department of Transportation, Federal Transit Administration, Noise and Vibration Impact Assessment Guideline, April 1995.

In addition to actual pipe installation, staging areas would be located at various points along the construction route. These areas would be used to store pipe, equipment, and other construction related material. In some cases, staging areas would be used for the duration of the Off-site Water Facilities construction. In other cases, the area

would be moved along the route to minimize the hauling distances and avoid disrupting any one area for an extended period of time. Potential staging areas include vacant private and public land and parking lots are identified in Exhibits 2-26, 2-28, 2-29, and 2-30. These staging areas could be considerable sources of noise, particularly if equipment is accessed and moved during nighttime hours when individuals are sensitive to intrusive noise.

Based on the noise levels provided in Table 3B.11-5 and in assuming a conservative attenuation rate of 4.5 dBA per doubling distance, noises levels generated during construction could range from 75.5 to over 80 dBA at the nearest sensitive receptor locations depending on the types of equipment in operation. Additionally, back-up beepers associated with trucks and equipment used for material loading and unloading at the staging area would generate significantly increased noise levels over the ambient noise environment in order to be discernable and protect construction worker safety as required by the U.S. Occupational Safety and Health Administration (OSHA) (29 CFR 1926.601 and 29 CFR 1926.602).

Because existing daytime noise levels in the vicinity of the conveyance pipeline alignment are assumed to range from 50 to 60 dBA, daytime construction work associated with the Off-site Water Facilities would significantly affect the noise environment of residences in close proximity to construction activities by increasing ambient noise levels by five dBA or more. While construction activities would occur when a majority of people are at work, retired persons, people who work at home, and people caring for their children in their homes could be significantly affected temporarily by noise when construction activities are occurring in the immediate vicinity. This **direct** temporary and short-term impact is considered **potentially significant**. **No indirect** impacts would occur. ***[Similar]***

In contrast, the nearest existing sensitive receptors to the on-site, White Rock, and Folsom Boulevard WTP site(s) are located over 1/2 mile or more away from any sensitive receptors. Further, the White Rock WTP site location under Off-site Water Facility Alternatives 1 and 1A is bordered by other noise intensive uses including aggregate mining and OHV use. Similarly, Folsom Boulevard WTP site is situated adjacent to existing industrial uses. For these reasons, temporary and short-term construction noise at the WTP site(s) would not exceed noise standards established in the County General Plan or noise control ordinance and a **less-than-significant**, **direct** temporary and short-term impact would result. **No indirect** impacts would occur. ***[Similar]***

The exposure of individual sensitive receptors to elevated noise levels would be contingent on the types of equipment in use and the duration of use. For example, while construction of the Off-site Water Facilities would occur on a 36-month construction schedule, pipeline construction would progress at rate of approximately 50 to 100 feet a day and, therefore, no one particular receptor along the selected alignment would be subjected to elevated noise for more than a couple of days. Construction activities associated with the Off-site Water Facilities would therefore be temporary in nature and related noise impacts would be short-term. However, since pipeline construction activities could substantially increase ambient noise levels at noise-sensitive locations, with potential intermittent noise levels exceeding 80 dBA, construction noise would result in **potentially significant**, temporary, **direct** impacts to sensitive receptors. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure 3B.11-1a: Limit Construction Hours.

Construction activities shall be limited to daylight hours between 7 a.m. and 7 p.m. Monday through Friday, and 9 a.m. and 5 p.m. on Saturday. No construction shall be allowed on Sundays or holidays.

Implementation: City of Folsom Utilities Department

Timing: During construction of all Off-site Water Facility components

Enforcement:
1. For structural improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department.

2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department.

3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.

Mitigation Measure 3B.11-1b: Minimize Noise from Construction Equipment and Staging.

Construction equipment noise shall be minimized during project construction by muffling and shielding intakes and exhaust on construction equipment (per the manufacturer's specifications) and by shrouding or shielding impact tools, where used. The City's construction specifications shall also require that the contractor select staging areas as far as feasibly possible from sensitive receptors.

Implementation: City of Folsom Utilities Department

Timing: During construction of all Off-site Water Facility components

Enforcement:

1. For structural improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department.

2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department.

3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.

Mitigation Measure 3B.11-1c: Maximize the Use of Noise Barriers.

Construction contractors shall locate fixed construction equipment (such as compressors and generators) and construction staging areas as far as possible from nearby residences. If feasible, noise barriers shall be used at the construction site and staging area. Temporary walls, stockpiles of excavated materials, or moveable sound barrier curtains would be appropriate in instances where construction noise would exceed 90 dBA and occur within less than 50 feet from a sensitive receptor. The final selection of noise barriers will be subject to the City's approval and shall provide a minimum 10 dBA reduction in construction noise levels.

Implementation: City of Folsom Utilities Department

Timing: During construction of all Off-site Water Facility components

Enforcement:

1. For structural improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department.

2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department.

3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.

Mitigation Measure 3B.11-1d: Prohibit Non-Essential Noise Sources During Construction.

No amplified sources (e.g., stereo "boom boxes") shall be used in the vicinity of residences during project construction.

Implementation: City of Folsom Utilities Department

Timing: During construction of all Off-site Water Facility components

Enforcement:

1. For structural improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department.

2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department.

3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.

Mitigation Measure 3B.11-1e: Monitor Construction Noise and Provide a Mechanism for Filing Noise Complaints.

An on-site complaint and enforcement manager shall track and respond to noise complaints. The City shall also provide a mechanism for residents, businesses, and agencies to register complaints with the City if construction noise levels are overly intrusive or construction occurs outside the required hours.

Implementation: City of Folsom Utilities Department

Timing: During construction of all Off-site Water Facility components

Enforcement:

1. For structural improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department.

2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department.

3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.

2, 2B, and 3

Under Off-site Water Facility Alternatives 2, 2B, and 3, impacts described for pipeline construction would be similar to those described for Off-site Water Facility Alternatives 1 and 1A. The main difference with these alternatives is the number of sensitive receptors affected by Off-site Water Facilities construction. As a result of new residential development along and south of Douglas Road and west of Ivan Way, pipeline construction under these alternatives would temporarily impact a higher number of sensitive receptors; estimated at over 100. This temporary, short-term **direct** impact is considered **potentially significant**. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure: Implement Mitigation Measures 3B.11-1a, 3B.11-1b, 3B.11-1c, 3B.11-1d, and 3B.11-1e.

2A, 3A, and 4A

Under Off-site Water Facility Alternatives 2A, 3A, and 4A, impacts described for pipeline construction would be similar to those described for Off-site Water Facility Alternatives 1, 1A, and 4. The main difference with these alternatives is the number of sensitive receptors affected by Off-site Water Facilities construction. As a result of new residential development along and south of Douglas Road and existing residential development along Mather Boulevard, pipeline construction under these alternatives would temporarily impact a higher number of sensitive receptors; estimated at over 200. This temporary and short-term **direct** impact is considered **potentially significant**. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure: Implement Mitigation Measures 3B.11-1a, 3B.11-1b, 3B.11-1c, 3B.11-1d, and 3B.11-1e.

Although implementation of the above mitigation measures would generally reduce construction noise, construction-related noise levels could occasionally exceed the Sacramento County and City of Rancho Cordova standards regarding construction noise. Although there are smaller number of receptors potentially affected under Off-site Water Facility Alternatives 1, 1A, 4, and 4A, the implementation of the prescribed mitigation would not reduce construction-related noise impacts to less than significant level at these locations. In addition, construction activities at the pump station facility may occur over a more extended period of time, up to several months, and could contribute to noises levels in excess of 80 dBA. These impacts could remain **significant and unavoidable**, because there is no feasible mitigation to fully reduce temporary, short-term construction-related impacts to a less-than-significant level. Based on the larger number of receptors affected along the conveyance alignments, construction-related noise impacts under Off-site Water Facility Alternatives 2, 2A, 2B, 3, and 3A could also remain significant and unavoidable to these residential centers, because there is no feasible mitigation to fully reduce temporary, short-term construction-related impacts to a **less-than-significant** level.

IMPACT 3B.11-2 Exposure to and/or Generation of Groundborne Vibration. *The Off-site Water Facilities could expose persons to or generate excessive groundborne vibration or groundborne noise levels.*

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A

There are two groundborne vibration impacts of general concern: annoyance to humans and damage to buildings. For other locations, it is anticipated that installation of distribution pipelines would require a backhoe or similar forms of other trenching equipment. Vibration from typical construction activity is typically below the threshold of perception when the activity is more than about 50 feet from the receiver. Construction activities are not expected to encroach within 50 feet of existing structures and, therefore, the level of **direct** and **indirect** vibration impact at these receptors would be **less than significant**. ***[Similar]***

In relation to the potential for structural damage at adjacent residential and commercial structures, peak particle velocity (PPV) is the maximum instantaneous positive or negative peak of the vibration signal, measured as a distance per time (such as millimeters or inches per second). The PPV measurement has been used historically to evaluate shock-wave type vibrations from actions like blasting, pile driving, and mining activities, and their relationship to building damage.

As provided in Table 3B.11-1, the level of potential impact resulting project construction is generally contingent on the structural composition of the buildings potentially affected. As shown in Table 3B.11-1, new residential structures with gypsum board walls/ceilings have a PPV threshold of 1.0 in/sec respectively and would be the types of structures most likely to be impacted by project construction activities. However, given that construction activities would employ the use of equipment similar to those identified in Table 3B.11-6, would not involve the use of pile driving, and would be situated 50 feet or more from existing structures , project construction is

unlikely to generate vibration levels in excess of the thresholds identified in Table 3B.11-6. Based on these considerations, the Proposed Project Alternative would result in **less than significant, direct** and **indirect** impacts from groundborne vibration during construction. ***[Similar]***

Table 3B.11-6
Construction Equipment Vibration Levels

Equipment	PPV at 25 feet (in/sec)	Equipment	PPV at 25 feet (in/sec)
Vibratory roller	0.210		
Large bulldozer	0.089		
Caisson drilling	0.089		
Loaded trucks	0.076		
Jackhammer	0.035		
Small bulldozer	0.003		

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, May 2006

Limited areas along the conveyance alignment, east of Grant Line Road, and the WTP site may require the use of explosives to break through the underlying bedrock and allow for the installation of pipeline or foundation materials. Blasting can generate an instantaneous PPV of greater than 0.2 in/sec and can contribute to damage of existing structures. However, in the event that explosives are required, the amount of explosives used would be minimal and in short durations. Further, given that no existing structures are currently located in close proximity to these portions of Zone 4 of the Off-site Water Facilities Study Area, these activities, if required, are not expected to produce ground shockwaves that could damage nearby structures or cause a significant nuisance. For this reason, the **direct** and indirect impact is considered **less than significant**. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

IMPACT 3B.11-3 Permanent Increase in Ambient Noise Levels. *The Off-site Water Facility Alternatives could create a substantial permanent increase in ambient noise levels in the vicinity of new pumping facilities.*

NCP, PA

The principal long-term, operational noise impacts resulting from the Off-site Water Facilities under the Proposed Off-site Water Facility Alternative would result from the pumps and generators operated at the proposed booster pump station and WTP. Noise generated from each of these facilities is discussed in more detail below.

Pump Station(s)

The booster pump station would eventually consist of multiple 400 horsepower (HP) vertical turbine pumps. At times, the pumps may operate 24 hours a day, 7 days a week. Based on a review of publish literature, the typical noise level for water supply pumping facilities ranges from 70 to 76 dBA at 50 feet (Environmental Science Associates 2005). However, the pumping facilities sampled as part the referenced analysis included substantially less horsepower than the Off-site Conveyance Pump's proposed capacity and, therefore, noise levels from the proposed pumping facilities could be higher. This could result in a **potentially significant direct** impact to adjacent residences. **No indirect** impacts would occur. ***[Similar]***

Additionally, a small standby generator would be installed in an enclosure to operate up to two pumps during a power outage. The typical noise level for a generator is approximately 80 dBA at 50 feet. With a surrounding

masonry buffer, or with generator placement using other structures as shielding, the effective noise level may be reduced by 10 to 15 dBA at 50 feet. Since emergency generators would operate infrequently, they would generally not contribute substantially to the overall community noise exposure outside of the site boundary. However, the combined operation of the pumps, the back-up generator, and maintenance activities depending on the proximity to the nearest sensitive receptor could generate long-term noise level in excess of Sacramento County or City of Rancho Cordova standards. This would be a **potentially significant**, **direct** impact. **No indirect** impacts would occur. ***[Similar]***

Water Treatment Plant

The On-site WTP site is currently located in an undeveloped area, with the nearest sensitive receptors being over a mile away from the site. However, the Folsom Specific Plan designates areas around the WTP site as multifamily, medium-density residential. The final placement of the On-site WTP would be required to adhere to setback requirements contained within the Folsom Specific Plan and, therefore, **direct** increases in noise from the stationary and mobile sources present at the WTP are expected to result in a **less-than-significant** impact. **No indirect** impacts would occur. ***[Similar]*** This issue is discussed in more detail in Section 3A.11, "Noise – Land" of this EIR/EIS.

Traffic Noise

Operation of the WTP and conveyance facilities would result in a minor increase in the use of motor vehicles, primarily associated with employees traveling to and from the WTP facility and routine maintenance and inspection activities. It is expected that no more than 10 staff personnel would be on-site at any one time for typical operation and maintenance of the WTP, most on-site during typical working hours, 7 a.m. to 5 p.m. Assuming an average of four trips per employee (including lunch breaks), operation of the proposed facilities would result in approximately 40 one-way daily employee trips. Due to the relatively low volume of Off-site Water Facilities-generated traffic, operation of the proposed facilities would not result in noticeable changes in the traffic noise along area roadways in relation to existing and projected roadway traffic volumes (e.g., with the Folsom Specific Plan Area). As a result, **direct** and **indirect** long-term increases in traffic noise levels would be **less than significant**. ***[Similar]***

Mitigation Measure 3B.11-3: Implement Operational Noise Minimization Measures.

The following mitigation measures shall be implemented for the design of the WTP and the pump station(s) to ensure that operational noise levels at the property line do not exceed the City/County standards:

- Shielding and other specified measures as deemed appropriate and effective by the design engineer shall be incorporated into the design in order to comply with performance standards.
- Pumps located underground shall be shielded to not affect nearby sensitive receptors.
- Project equipment shall be outfitted and maintained with noise-reduction devices such as equipment closures, fan silencers, mufflers, acoustical louvers, noise barriers, and acoustical panels to minimize operational noise.
- Particularly noisy equipment shall be located as far away as feasibly possible from nearby sensitive receptors.
- The orientation of acoustical exits shall always be facing away from nearby sensitive receptors.
- Buildings and landscaping shall be incorporated, where possible, to absorb or redirect noise away from nearby sensitive receptors.

Implementation: City of Folsom Utilities Department

Timing: Approval of engineering plans for the On- or Off-site WTPs and Off-site booster pumping facilities prior to construction

Enforcement:

1. For structural improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department.

2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department.

3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.

1, 1A, 3, and 3A

Long-term noise impacts identified for the booster pumping station under the Proposed Off-site Water Facility Alternative would be similar under Off-site Water Facility Alternatives 1, 1A, 3 and 3A. **Direct** noise impacts relating to pumping could be **potentially significant** at the nearest sensitive receptor. **No indirect** impacts would occur. ***[Similar]***

In contrast to the Proposed Off-site Water Alternative, these alternatives would involve the construction and operation of the White Rock WTP site in a currently undeveloped area south of White Rock Road and in close proximity to the City Corporation Yard, with the nearest sensitive receptors over 1/2 mile away from the site. However, the Folsom Specific Plan designates an area just north of WTP site as multifamily, high-density. Because these uses are not currently present, the City has assumed a conservative distance of 200 feet based on a minimum 50-foot setback for the WTP from the northern property line, a 100 right-of-way for White Rock Road, and an additional setback of 50 feet for the multifamily residential uses on the north side of White Rock Road.

The WTP would operate continuously at various flow rates during the year with ongoing operations and maintenance. Potential operational noise impacts at the WTP would primarily be from maintenance vehicle circulation and the operation of stationary mechanical equipment. This equipment includes blowers, generators, pumps, process motors, and heavy trucks delivering chemical supplies and materials. Minor noises associated with the operation of low power equipment, such as sludge collectors and flocculators, and water flow noise would also occur. The level of noise generated by pumps and other stationary equipment would depend on: characteristics of the noise source, number of noise sources clustered together, type and effectiveness of building enclosure, and operational characteristics. Based on the noisiest pieces of equipment expected to be present (e.g., pumps) and applying a noise attenuation rate of 4.5 dBA per doubling distance, the noise levels from the pumping facilities and on-site generator at 200 feet would be expected to range between 67 and 72 dBA.

Without the inclusion of noise reduction measures in the design and operation of the WTP, noise generated from ongoing operations at the WTP would contribute noise levels to the surrounding area that could exceed County and City standards. For this reason, the operation of the WTP under these alternatives could result in **potentially significant**, **direct** long-term noise impacts. **No indirect** impacts would occur. ***[Greater]***

Mitigation Measure: Implement Mitigation Measures 3B.11-3.

2, 2A, and 2B

These alternatives would further integrate the Off-site Water Facilities components with existing water supply infrastructure, which includes SCWA's Vineyard SWTP and, potentially, the North Douglas Tanks. Although pumping facilities would be required, these facilities along with water treatment operations would occur at the existing Vineyard SWTP. In addition, the number of Off-site Water Facilities operational staff under these alternatives would be smaller than if the City constructed a new WTP. However, based on these considerations, these Off-site Water Facility Alternatives would not generate increased noise levels from new water conveyance and treatment facilities at new locations where these facilities do not currently exist and, therefore, this **direct** impact is considered **less than significant**. **No indirect** impacts would occur. ***[Lesser]***

Mitigation Measure: No mitigation measures are required.

4 and 4A

Long-term noise impacts under Off-site Water Facility Alternatives 4 and 4A would be similar to the Off-site Water Facility Alternatives 1 and 1A. The main difference in relation to potential long term noise impacts under Off-site Water Facility Alternatives 4 and 4A is the distance of the WTP from residential uses are planned within the Westborough Specific Plan. Under a worst-case scenario, the WTP could be constructed within 50 to 100 feet of these future residential uses thereby subjecting them to noise levels approaching 80 dBA. These noise levels are considered unacceptable for residential uses according to City of Rancho Cordova standards and therefore represent a **potentially significant direct** impact. **No indirect** impacts would occur. ***[Greater]***

Mitigation Measure: Implement Mitigation Measures 3B.11-3.

Implementation of the above mitigation measures are expected to reduce potential impacts to levels at or below standards and would generally reduce the impacts to less than significant levels. However, because of the uncertainty associated with the placement of these facilities, especially the booster pump station, and the pump station's actual design (above- verses below-ground), the City is unable to verify whether noise levels would be reduced to below Sacramento County and City of Rancho Cordova standards as a result of the measures above and the impact could remain **potentially significant and unavoidable** for Alternatives PA, 1, 1A, 3, 3A, 4, and 4A. In addition, given the potential for the placement of the WTP in close proximity to planned residences under Off-site Water Facility Alternatives 4 and 4A, permanent noise impacts could remain **significant and unavoidable**.

3B.11.4 RESIDUAL SIGNIFICANT IMPACTS

Even after implementation of all feasible mitigation, construction noise impacts would remain significant and unavoidable for all Off-site Water Facilities Alternatives. The operation of the pumps and generators for Off-site Water Facilities pump stations and WTP facilities could occur within close proximity of sensitive receptors, thereby resulting in a permanent increase in noise levels. Although the City has identified a series of mitigation measures to address potential long-term impacts to adjacent sensitive receptors, given uncertainties regarding the design of these facilities and their respective locations, the City is unable to confirm whether the mitigation imposed would be effective in reducing long-term noise to a less-than-significant level. For this reason, long-term, residual noise impacts from these facilities under Alternatives PA, 1, 1A, 3, 3A, 4, and 4A could be significant and unavoidable.

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3A.12 PARKS AND RECREATION - LAND

The two local roadway connections from the Folsom Heights property off-site into El Dorado Hills would not generate direct increases in population that could result in additional demand for parkland facilities in El Dorado County. Therefore, the "Affected Environment" does not contain a discussion of conditions in El Dorado County related to parks and recreation.

3A.12.1 AFFECTED ENVIRONMENT

REGIONAL ENVIRONMENT

Folsom Lake

Folsom Lake State Recreation Area (SRA), located approximately 5 miles north of the SPA, serves the greater Sacramento area for recreation in the form of camping, hiking, biking, boating, and other outdoor recreation activities. The lake also hosts bass fishing tournaments that frequently draw fishermen from throughout the state. California State Parks manages the Folsom Lake SRA, which includes Folsom Lake and the surrounding facilities. The lake features approximately 75 miles of shoreline and 80 miles of trails that provide opportunities for hiking, horseback riding, nature studies, camping, and picnicking. There are seven major recreation areas with facilities located around the lake. The Folsom Lake SRA, including Folsom Lake, is one of the most heavily used recreational facilities in the California State Park system, with 2 to 3 million visitor days per year. Approximately 75% of the annual visitations to the Folsom Lake SRA occur during the spring and summer, and many (85%) of the Folsom Lake SRA activities are water dependent.

The Lake Natoma sub-unit of the Folsom Lake SRA is located adjacent to the City of Folsom, between Hazel Avenue and Folsom Dam, upstream from the Sacramento County-operated portion of the American River Parkway. The area encompasses approximately 500 surface acres of water and 1,600 acres of land. Most of the land immediately adjacent to Lake Natoma is Federally owned land administered by the U.S. Bureau of Reclamation (Reclamation). This land is managed by California State Parks as part of the Folsom Lake SRA through an agreement with Reclamation. In addition to Federal land, California State Parks has acquired fee title to additional lands around Lake Natoma that are also part of Folsom Lake SRA and Folsom Powerhouse State Historic Park (SHP). Folsom Powerhouse SHP is a small unit (35 acres) located on the south side of Lake Natoma, adjacent to historic downtown Folsom. Both Folsom Lake SRA and the Folsom Powerhouse SHP are administered and managed by the Gold Fields District of California State Parks.

The state facilities are managed to meet the recreational needs of the larger statewide population, and thus tend to be oriented more to the traveling public than are the adjacent County and City-operated facilities, which serve the needs of the regional and local population of the Sacramento area and City of Folsom residents.

Sacramento–San Joaquin Delta

The Sacramento–San Joaquin Delta (Delta) includes portions of the cities of Sacramento and Stockton as well as several smaller cities and towns. The Delta encompasses 738,000 acres of land in portions of six counties and has nearly 1,000 miles of navigable channels. As such, recreation opportunities are generally water-oriented, consisting primarily of boating and fishing. Other common activities include waterskiing, wakeboarding, sailing, operating personal watercraft (e.g., jet skis), house boating, kayaking, swimming, boat camping, and windsurfing. Land-based recreational activities in the Delta include hunting, camping, picnicking, walking, bicycling, viewing and photographing wildlife, sightseeing, and attending festivals and special events (Delta Protection Commission [DPC] 2002). Access to the Delta is available via several locations along the Sacramento River from downtown Sacramento to Freeport (approximately 20 miles southwest of the SPA), as well as numerous locations farther south (California Department of Water Resources [DWR] 1995).

Prairie City State Vehicular Recreation Area

The Prairie City State Vehicular Recreation Area (SVRA), located on White Rock Road approximately 2 miles west of the SPA, offers off-highway vehicle enthusiasts 836 acres of varying terrain and trails for motorcycles, all-terrain vehicles, and four-wheel-drive vehicles. The SVRA includes the Hangtown MX Track, which hosts the annual national outdoor MX (motocross) championship; the Quarter Midget Track, which is used by the American Quarter Midget Association for both practice and competitive events; and a 4x4 vehicle area, motorcycle/all-terrain vehicle (ATV) area, several practice tracks, a go-kart track, and several staging areas that include picnic facilities. The Prairie City SVRA is operated by the Off-Highway Vehicle Division of California State Parks and is open year-round (California State Parks 2004).

LOCAL ENVIRONMENT

County of Sacramento

Park planning in Sacramento County is an interagency and interjurisdictional process. At the broadest level, the Sacramento County Department of Regional Parks, Recreation and Open Space (DPROS) manages the regional park system. Local parks (mini, neighborhood, and community parks) are planned and operated primarily by the 18 parks and recreation districts located throughout the unincorporated and incorporated areas of the County. Sacramento County defines four basic types of parks as follows:

- **Mini Parks** (1.5–4 acres): Publicly owned sites generally serving a radius within 1/3 mile and within easy walking distance for a parent with tot or an elderly person. Good visual access from surrounding homes and streets is essential. Mini parks typically provide playgrounds and picnic facilities.

- **Neighborhood Parks** (5–10 acres): Often adjacent to school sites, are publicly-owned sites intended to serve the needs of a radius within 2/3 mile, usually the residential neighborhood in which they are located. They should be within walking distance of the residents they serve, without access barriers, such as a major street or canal. Neighborhood parks typically provide playgrounds, playfields, and court game areas.

- **Community Parks** (20–60 acres): Larger, publicly-owned sites that serve a larger area and population than neighborhood parks. They should be served by a major thoroughfare and be within bicycling distance of the people they serve. Community parks typically provide specialized functions such as swimming pools, tennis courts, sports complexes, and community buildings in addition to basic neighborhood park facilities.

- **Regional Parks** (75+ acres): Typically provide a specialized recreation function, or preserve natural, cultural, historical, or archaeological features of Countywide significance. They are usually greater than 75 acres in size, with a large service area and population, extending beyond the County boundary.

Department of Regional Parks, Recreation, and Open Space

Sacramento County DPROS was established in 1959 with acquisition of land now known as the American River Parkway. Since that time, the County has expanded its total parklands to more than 11,000 acres, including the American River Parkway, Dry Creek Parkway, Mather Regional Park, Discovery Park, Elk Grove Regional Park, the Effie Yeaw Nature Center, and other historic and natural sites. In addition to traditional regional park activities, DPROS also oversees four regional golf facilities.

American River Parkway

On January 19, 1981, approximately 23 miles of the American River, from the confluence with the Sacramento River to Nimbus Dam, was designated a National Wild and Scenic River by the National Park Service (NPS) (NPS 2005). Nimbus Dam is located approximately 4 miles west of the SPA. This stretch of river, managed by DPROS, flows through the City of Sacramento and is the most heavily used Wild and Scenic River in California.

The American River Parkway (Parkway) is a river corridor/open space greenbelt that extends along the American River from the confluence with the Sacramento River to Nimbus Dam. The Parkway's trail system, which has been designated a "National Recreation Trail," includes the 32-mile-long multiuse (pedestrian, equestrian, and bicycle) Jedediah Smith Memorial Trail, which parallels the American River from Folsom to downtown Sacramento.

The Parkway is one of the most valuable recreation/open space assets in the region. There are several points of entry to this recreation area near the SPA. The closest access point for the section of Parkway between Nimbus Dam and the Sacramento River is located off of Hazel Avenue at the Fish Hatchery below the dam. Hazel Avenue also provides access to the Parkway above Nimbus Dam, which is within the Natoma sub-unit of the Folsom Lake SRA, described above. There are many access points in the City of Folsom to the Folsom Lake SRA.

City of Folsom

The City of Folsom Parks and Recreation Department provides and maintains a full range of recreational activities and park facilities for the City of Folsom. Per the City of Folsom General Plan Parks and Recreation Element (1993 Update), the City has categorized parks in terms of their function and sizes into the following categories:

- **Mini Parks** (1 to 2 acres): Specialized facilities that usually serve a concentrated or limited population or specific group such as tots or senior citizens. Mini parks may feature children's play areas, quiet game areas, landscaping and some sports activities such as multiuse courts if space allows. Ideal in close proximity to apartment complexes, townhouses, or elderly housing. May be used to enhance beauty of the City.

- **Neighborhood Parks** (10 to 20 acres): A recreation area which provides for indoor and outdoor programs and activities. Neighborhood recreation parks should serve one neighborhood and be centralized within that neighborhood, a park which can be walked to by children. Where possible, they should be located next to schools to avoid duplication and achieve joint use advantages. Neighborhood recreation parks should primarily serve the needs of the neighborhood residents.

- **School/Parks** (10 to 20 acres): A neighborhood park located adjacent to a school. (See "Neighborhood Park" above.)

- **Schools** (10 to 20 acres): School playing fields and facilities can be shared with the City Parks and Recreation program to maximize facilities use. Conversely, parks and other recreation facilities can be shared with schools to enhance school facilities and reduce the need for duplicate facilities and programs.

- **Special Use Areas** (undetermined acreage): Within the City there are special use areas which do not fit easily in the other categories.

- **Community Parks** (20 to 60 acres): A recreation area which provides recreational opportunities for several neighborhoods. Community parks should avoid duplication of facilities already provided in neighborhood recreation parks, and where suitable, be located adjacent to a secondary school. It should include such facilities as an aquatic center, provision for evening recreation, indoor facilities, amphitheater, specialized athletic fields, tennis, handball, basketball courts, large and small picnic areas, and barbecue facilities, convenient parking, tot play apparatus and restrooms.

- **Regional Parks** (200+ acres): A recreation area that provides some remoteness from the urban setting or has features of regional significance including opportunities not possible in other parks within the City park system. This type of park serves a population within a large region, usually those within an hour's travel time. A regional park may be the joint effort of more than one governmental agency. It should be developed to preserve existing natural areas, areas of great scenic beauty, or areas of historical interest. A regional park

could include facilities such as arboretums, camping areas, boating and fishing facilities, bicycling, equestrian and hiking trails, and other special-use facilities.

- **Open Space/Natural Areas/Parkways** (undetermined acreage): Natural habitat areas, stream courses, utility easements, or other corridors designated in the Open Space and Conservation Element and/or Circulation Element for purpose of preservation of natural features or circulation. Open space is clearly distinguished form park acreage and shall not be calculated or credited as parkland acreage. Parkways shall be preserved in their natural state with a network of trails for walking, cycling, and horseback riding. Parkways are classified as open space for the preservation of natural resources and shall not be credited as parkland acreage.

A complete listing of existing Folsom Parks and Recreation Department parks with total acreage and developed acreage of parkland is provided in Table 3A.12-1, below. The locations of all existing City facilities are shown in Exhibit 3A.12-1. A total of 385.35 acres of parkland are currently located within the City of Folsom, including 260.96 acres of developed parkland and 124.39 acres of undeveloped parkland (City of Folsom 2008). Developed public recreation facilities within the City of Folsom include an aquatic center with 3 pools, 14 little league fields, 8 youth softball fields, 3 adult baseball fields, 5 adult softball fields, 11 youth soccer fields, 19 adult (12 and up) soccer fields, 1 youth football field, 16 outdoor basketball courts, and 19 tennis courts. The closest existing City park facilities to the SPA are Amos P. Catlin Park, Livermore Community Park, John Kemp Community Park, and Handy Family Park, all located north of U.S. Highway 50 (U.S. 50) and north of Iron Point Road.

The 2008 population of the City of Folsom was 72,590 residents (California Department of Finance 2008). Therefore, the City's parkland acreage to population ratio is currently 5.3 acres per 1,000, which is slightly above the City's park acreage standard of 5 acres per 1,000 residents (City of Folsom General Plan Parks and Recreation Element, Goals and Policies, 1993 Update). It should be noted that, as required by the City, this parkland acreage does not take into account the open space and bike trails that are within the City Parks and Recreation Department's responsibility.

3A.12.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

National Recreation and Park Association

The National Recreation and Park Association (NRPA) recommends that communities have a park system that includes 5–10 acres of developed parklands for every 1,000 residents. Although the amount of parkland varies from community to community and is not regulated by law, many communities have used the NRPA recommendation to develop a standard of 5 acres per 1,000 residents for traditional service/passive park acreage, with an additional 5 acres allocated for special-use facilities and open space (i.e., nontraditional parklands), for a total standard of 10 acres per 1,000 residents.

Americans with Disabilities Act

The Americans with Disabilities Act (ADA) of 1990 (42 United States Code [USC] 12181) prohibits discrimination on the basis of disability in public accommodation and state and local government services. Under the ADA, the Architectural and Transportation Barriers Compliance Board issues guidelines to ensure that facilities, public sidewalks, and street crossings are accessible to individuals with disabilities. Typical ADA improvements include creating parking spaces for handicapped users, restroom modifications, door hardware requirements, and lighting upgrades. Play areas, meeting rooms, park restrooms, and other buildings and park structures must comply with ADA requirements. Park facilities under the Proposed Project or any of the action alternatives would be required to be ADA compliant.

Schools

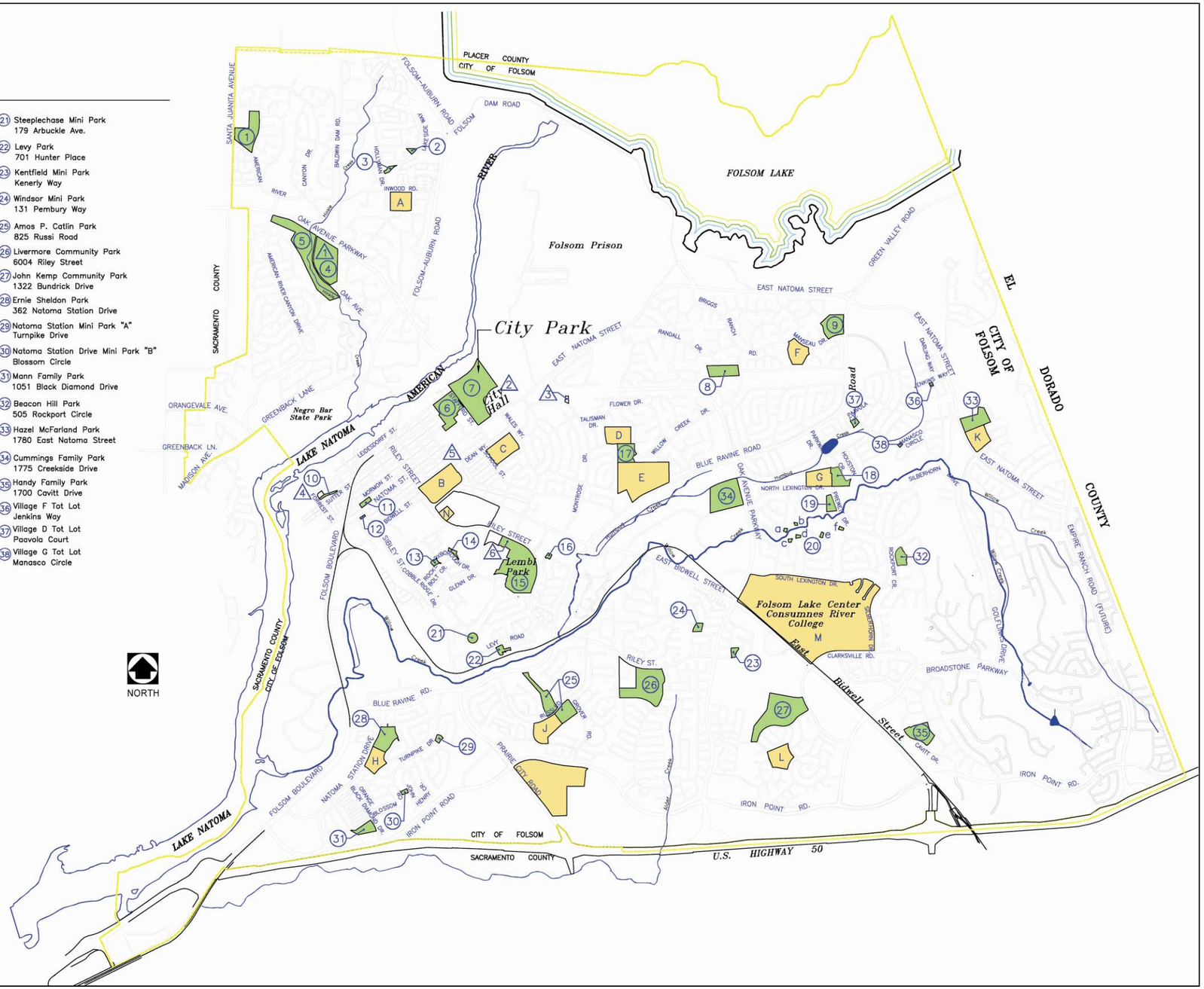
- A Carl Sundahl Elementary, 9932 Inwood Road
- B Sutter Middle School, 715 Riley Street
- C Theodore Judah Elementary, 101 Dean Way
- D Blanche Sprentz Elementary, 249 Flower Drive
- E Folsom Middle School, 500 Blue Ravine Road
- F Folsom Hills Elementary, 106 Manseau Drive
- G Oak Chan Elementary, 101 Prewett Drive
- H Natoma Station Elementary, 500 Turnpike
- I Folsom High School, 1655 Iron Point Road
- J Sandra Gallardo Elementary, 755 Russi Road
- K Empire Oaks Elementary, 1830 Bonhill Drive
- L Gold Ridge Elementary, 735 Halidon Way
- M Folsom Lake College Center, 100 Clarksville Road
- N Folsom Lake High School, 955 Riley Street

Recreational Facilities

- 1 Folsom Rotary Clubhouse, 7150 Baldwin Dam Road
- 2 Folsom City Hall/Parks and Recreation Department, 50 Natoma Street; Folsom Community Center, 52 Natoma Street
- 3 R.G. Smith Clubhouse, 225 Marchant
- 4 Folsom Veterans Hall, 1300 Forrest Street
- 5 Folsom Library, 300 Persifer Street
- 6 Folsom Aquatic Center, 1200 Riley Street

Parks

- 1 Bud and Artie Davies Park, 290 American River Canyon Drive
- 2 Hannaford Family Park, 119 Lakeside Way
- 3 Egloff Family Park, 114 Hollyann Drive
- 4 Lew Howard Park, 7100 Baldwin Dam Road
- 5 Hinkle Creek Nature Area, 7100 Baldwin Dam Road
- 6 Rodeo Park, Stafford Street (end)
- 7 Folsom City Lions Park/Zoo, 403 Stafford Street
- 8 BT Collins Park, 828 Willow Creek Drive
- 9 Elvie Perazzo Briggs Park, 125 Manseau Drive
- 10 The Preserve Mini Park, 1200 Sutter Street
- 11 Granite Mini Park, 1005 Mormon Street
- 12 Garden Club Mini Park, 1105 Natoma Street
- 13 Cobble Hills Ridge Park, 124 Rockbolt Circle
- 14 Reflections Mini Park, 111 Oxburough Drive
- 15 Lembi Community Park, 1302 Riley Street
- 16 The Shores Mini Park, Hazelmere Drive
- 17 Ed Mitchell Park, 306 Willow Creek South
- 18 Philip C. Cohn Park, 100 Prewett Drive
- 19 Folsom Kids Play Park, 201 Prewett Drive
- 20-A Keller Mini Park, 179 Keller Circle
- 20-B Chadwick Mini Park, 179 Chadwick Way
- 20-C Thorndike Mini Park, 157 Thorndike Way
- 20-D Wellfleet Mini Park, 219 Wellfleet Circle
- 20-E Cambridge Place Mini Park, 197 Wellfleet Circle
- 20-F Prewett Mini Park, Kilsby Way
- 21 Steeplechase Mini Park, 179 Arbuckle Ave.
- 22 Levy Park, 701 Hunter Place
- 23 Kentfield Mini Park, Kenerly Way
- 24 Windsor Mini Park, 131 Pembury Way
- 25 Amos P. Catlin Park, 825 Russi Road
- 26 Livermore Community Park, 6004 Riley Street
- 27 John Kemp Community Park, 1322 Bundrick Drive
- 28 Ernie Sheldon Park, 362 Natoma Station Drive
- 29 Natoma Station Mini Park "A", Turnpike Drive
- 30 Natoma Station Drive Mini Park "B", Blossom Circle
- 31 Mann Family Park, 1051 Black Diamond Drive
- 32 Beacon Hill Park, 505 Rockport Circle
- 33 Hazel McFarland Park, 1780 East Natoma Street
- 34 Cummings Family Park, 1775 Creekside Drive
- 35 Handy Family Park, 1700 Cavitt Drive
- 36 Village F Tot Lot, Jenkins Way
- 37 Village D Tot Lot, Paavola Court
- 38 Village G Tot Lot, Manasco Circle



Source: City of Folsom 2009

Locations of Existing City of Folsom Parks, Recreational Facilities, and Schools **Exhibit 3A.12-1**

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Table 3A.12-1
Existing City of Folsom Parks and Recreation Facilities

Facility Name	Location	Parklands Total/Developed[1]
Parks		
Bud and Artie Davies Park	290 American River Canyon Drive	13.85 acres/8.91 acres developed
Hannaford Family Park	119 Lakeside Way	1.0 acre developed
Egloff Family Park	114 Hollyann Drive	1.0 acre developed
Lew Howard Park	7100 Baldwin Dam Road	19.55 acres/4.99 acres developed
Hinkle Creek Nature Area	7100 Baldwin Dam Road	44.0 acres undeveloped
Rodeo Park	Stafford Street (end)	14.92 acres/4.99 acres developed
Folsom City Lions Park/Zoo	403 Stafford Street	41.1 acres/32.35 acres developed
BT Collins Park	828 Willow Creek Drive	8.0 acres/4.0 acres developed
Elvie Perazzo Briggs Park	125 Manseau Drive	10.0 acres developed
The Preserve Mini Park	1200 Sutter Street	0.7 acre
Granite Mini Park	1005 Mormon Street	1.0 acre developed
Garden Club Mini Park	1105 Natoma Street	0.5 acre developed
Cobble Hills Ridge Park	124 Rockbolt Circle	1.0 acre
Reflections Mini Park	111 Oxburough Drive	1.0 acre
Lembi Community Park/ Folsom Aquatic Center	1302 Riley Street/ 1200 Riley Street	40.15 acres/38.65 acres developed
The Shores Mini Park	Hazelmere Drive	0.7 acre
Ed Mitchell Park	306 Willow Creek South	8.0 acres developed
Philip C. Cohn Park	100 Prewett Drive	6.0 acres developed
Folsom Kids Play Park	201 Prewett Drive	2.0 acres developed
Keller Mini Park	179 Keller Circle	0.2 acre developed
Chadwick Mini Park	179 Chadwick Way	0.2 acre developed
Thorndike Mini Park	157 Thorndike Way	0.2 acre developed
Wellfleet Mini Park	219 Wellfleet Circle	0.2 acre developed
Cambridge Place Mini Park	197 Wellfleet Circle	0.2 acre developed
Prewett Mini Park	Kilsby Way	0.2 acre developed
Steeplechase Mini Park	179 Arbuckle Avenue	0.5 acre developed
Levy Park	701 Hunter Place	1.74 acre developed
Kentfield Mini Park	Kenerly Way	1.0 acre developed
Windsor Mini Park	131 Pembury Way	1.0 acre developed
Amos P. Catlin Park	825 Russi Road	16.4 acres/7.2 developed
Livermore Community Park	6004 Riley Street	26.79 acres/22.79 developed
John Kemp Community Park/ Sports Complex	1322 Bundrick Drive/ 66 Clarksville Road	30.0 acres developed
Ernie Sheldon Park	362 Natoma Station Drive	9.36 acres developed
Natoma Station Mini Park “A”	Turnpike Drive	1.0 acre developed
Natoma Station Mini Park “B”	Blossom Circle	0.6 acre developed

Table 3A.12-1
Existing City of Folsom Parks and Recreation Facilities

Facility Name	Location	Parklands Total/Developed[1]
Mann Family Park	1051 Black Diamond Drive	4.25 acres developed
Beacon Hill Park	505 Rockport Circle	3.95 acres developed
Hazel McFarland Park	1780 East Natoma Street	11.0 acres/9.5 developed
Cummings Family Park	1775 Creekside Drive	10.86 acres developed
Handy Family Park	1700 Cavitt Drive	9.7 acres developed
Village F Tot Lot	Jenkins Way	0.3 acre developed
Village D Tot Lot	Paavola Court	1.0 acre developed
Village G Tot Lot	Manasco Circle	0.3 acre developed
Willow Hill Reservoir Community Park (not shown on map)	Iron Point Road near Prairie City Road	30.5 acres/1.5 acres developed
Recreational Facilities		
Folsom Rotary Clubhouse	7150 Baldwin Dam Road	See Lew Howard Park
Folsom City Hall/Parks and Recreation Department	50 Natoma Street	NA
Folsom Community Center/ Seniors and Arts Center	52 Natoma Street/ 48 Natoma Street	4.3 acres developed
R. G. Smith Clubhouse	225 Marchant	0.5 acres developed
Folsom Veterans Hall	1300 Forrest Street	NA
Folsom Library	300 Persifer Street	NA

Note: NA = not available

[1] Parkland acreages from City of Folsom Department of Parks and Recreation Park Inventory Summary from the Draft Parks and Recreation Master Plan Update May 16, 2008

Source: City of Folsom 2009a; compiled by AECOM in 2009.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

Quimby Act

The Quimby Act (California Government Code Section 66477) was established by the California Legislature in 1965 to preserve open space and parkland in rapidly urbanizing areas of the state. The Quimby Act allows cities and counties to establish requirements for new development to dedicate land for parks, pay an in-lieu fee, or perform a combination of the two.

The Quimby Act provides two standards for the dedication of land for use as parkland. If the existing area of parkland in a community is greater than 3 acres per 1,000 residents, then the community may require dedication based on a standard of up to 5 acres per 1,000 persons residing in the subdivision. If the existing amount of parkland in a community is less than 3 acres per 1,000 residents, then the community may require dedication based on a standard of only 3 acres per 1,000 persons residing in the subdivision. The Quimby Act requires a city or county to adopt standards for recreational facilities in its general plan if it is to adopt a parkland dedication or fee ordinance. See "Regional and Local Plans, Policies, Regulation, and Laws," below, for City of Folsom standards for recreational facilities.

It should be noted that the Quimby Act applies only to the acquisition of new parkland; it does not apply to the physical development of new park facilities or associated operations and maintenance costs. Therefore, the Quimby Act effectively preserves open space needed to develop park and recreation facilities, but it does not ensure the development of the land or the provision of park and recreation services to residents. In addition, the Quimby Act applies only to residential subdivisions. Nonresidential projects could contribute to the demand for park and recreation facilities without providing land or funding for such facilities. Quimby Act fees are collected by the local agency (park district, city, or county) in which the new residential development is located.

Folsom Lake State Recreational Area and Folsom Powerhouse State Historic Park General Plan/ Resource Management Plan

The current Folsom Lake State Recreation Area General Plan was adopted by the State of California in 1979. California State Parks and Reclamation are currently developing a new combined General Plan/Resource Management Plan for both the Folsom Powerhouse SHP and Folsom Lake SRA, including the Lake Natoma sub-unit. The summary of management direction provided below is derived from the direction that will be part of the new General Plan/Resource Management Plan (Sacramento County 2008).

Thirty-four management zones have been tentatively established in the new General Plan/Resource Management Plan, including twelve management zones at Lake Natoma. The management zones reflect the consideration of a number of factors, including existing and potential type and intensity of land use and visitor experience, existing and potential resource values, and the practicalities of day-to-day management and operations. The zones generally represent areas of the park that share common physical and use characteristics and should be managed as identifiable components or sub-areas.

The management zones are further used to designate each area of the park with one of four broad land use designations: recreation, conservation, preservation, and administration. The intent of the land use designations is to reflect the varying physical, social, and management attributes throughout the park and to provide a framework for making future management decisions.

The new General Plan/Resource Management Plan for Folsom Lake SRA and Folsom Powerhouse SHP is intended to provide an extensive array of management direction for the full range of resources and uses within these two park units in the form of goals and guidelines which apply to both units in their entirety. This includes direction for the protection and management of natural and cultural resources, the management of recreation and facilities, interpretation, and many other areas regarding visitor services and park operations.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

Sacramento County General Plan

There are no goals and policies of the Sacramento County General Plan (1998) that are applicable to the Proposed Project or the alternatives under consideration.

El Dorado County General Plan

There are no goals and policies of the El Dorado County General Plan (2004) that are applicable to the Proposed Project or the alternatives under consideration.

City of Folsom General Plan

The following goals and policies of the City of Folsom General Plan (1993) are applicable to the Proposed Project and the other four action alternatives under consideration. There are no City of Folsom goals and policies that are applicable to the No Project Alternative since the site would remain under Sacramento County's jurisdiction under the No Project Alternative.

Park and Recreation Element

GOAL 35. To achieve and maintain quality parks, which provide optimum satisfaction to the leisure and recreation needs of the citizens.

- **Policy 35.12.** The following standards are the minimum acceptable standards for parks, open space and recreation facilities in the City of Folsom:

  Parkland Acreage Standard: Five acres per thousand population (5 acres per 1,000 persons)
  Space Standards: [See Table 3A.12-2, below.]

GOAL 36. To acquire and improve land and facilities for recreational use in pace with local needs.

GOAL 37. To achieve and maintain quality recreation activities which provide optimum satisfaction to leisure and recreation needs of the citizens.

GOAL 38. To involve and inform the residents, merchants and visitors of the need for public participation in planning, development and maintenance of recreation facilities.

GOAL 39. To effectively use the resources of the City of Folsom and other governmental entities (such as school districts, county, state and Federal agencies) to accomplish coordinated, effective planning of recreation and leisure activities.

The City of Folsom's General Plan park standards and classification of neighborhood, community, and regional parks are provided in Table 3A.12-2.

City of Folsom Parks and Recreation Master Plan

The City of Folsom Parks and Recreation Master Plan (Master Plan) is an implementation tool that identifies Folsom's diverse recreational facilities and activities and establishes policies for acquisition, development, administration, and use of Folsom's parks and recreation resources. In 1989, the City of Folsom Parks and Recreation Master Plan was completed as part of the City of Folsom General Plan. The Master Plan document included recommendations that reflected the park and recreation needs in the City.

Table 3A.12-2
City of Folsom Park Acreage Standards

Park Category	Desirable Size (acres)	Population	Service Area	Standard (acres per 1,000 residents)
Mini Park	1–2 acres	1,000–2,000	Less than ¼-mile radius	0.5 to 1 acre
Neighborhood Park	15 acres	2,000–5,000	¼- to ½-mile radius	2.5 to 3.5 acres
Community Park	45 acres	12,000–25,000	Several neighborhoods 1 to 2 miles	2.5 to 3.5 acres
Special Use Recreation Area/ Natural Area/ Wildlife Area/ Parkway	Variable depending on desired size	Within community 25,000–50,000	Not defined	Variable
Regional Park	200+ acres	Contiguous to or encompassing natural resources	Several communities within one-hour driving time radius	5 to 10 acres

Source: City of Folsom 1993

The most recent update of the Master Plan was completed and adopted by the City Council in 1996. The goals and policies contained in the General Plan Park and Recreation Element are contained in the Master Plan. The 1996 update identified recreational elements (program) for all undeveloped parks. A "Needs Assessment Survey" was completed and used to facilitate the Parks and Recreation Master Plan Update. The 1996 Master Plan was revisited and modified through the adoption of the 2002 Implementation Plan Update. That update reevaluated the status of park development, the estimated cost of developing the remaining parks, and made recommendations on the prioritization of undeveloped parks. The City of Folsom Parks and Recreation Department is in the process of another update; however, it is anticipated that there will be no goal or objective changes proposed in the update. The Parks and Recreation Commission and staff will examine programmatic changes related to the existing service levels, and projected needs based on these existing services and development revenues for build-out of the existing City, similar to the 2002 Implementation Plan Update (Simpson, pers. comm., 2009). The update will review the status of remaining park development, program needs, and funding.

American River Parkway Plan

The American River Parkway is an open space greenbelt, which extends approximately 29 miles from Folsom Dam to the American River's confluence with the Sacramento River and includes a 32-mile multiuse trail. The Parkway comprises several distinct sections, each having individual features and falling under the jurisdiction of different agencies and management plans. The 23-mile section of Parkway between Nimbus Dam and the American River confluence with the Sacramento River is the lower American River (LAR) and is classified as a "Recreation" river within the State and Federal Wild and Scenic River Systems (Sacramento County 2008). The Parkway is managed by Sacramento County DRPROS, which oversees implementation of the American River Parkway Plan (Parkway Plan). The purpose of the Parkway Plan is to provide a guide to land use decisions affecting the Parkway; specifically, addressing its preservation, use, development, and administration. The current Parkway Plan was adopted in 1985; however, an update to the 1985 Parkway Plan—the American River Parkway Plan 2008—has been completed and adopted at the local level by Sacramento County and the City of Sacramento, and endorsed by the City of Rancho Cordova. Finalization of the Parkway Plan is pending State legislative action (Moffitt, pers. comm., 2009).

The goals of the Parkway Plan (2008) are:

- To provide, protect, and enhance for public use a continuous open space greenbelt along the American River extending from Sacramento to Folsom Dam.
- To provide appropriate access and facilities so that present and future generations can enjoy the amenities and resources of the Parkway which enhance the enjoyment of leisure activities.
- To preserve, protect, interpret, and improve the natural, archaeological, historical, and recreational resources of the Parkway, including an adequate flow of high quality water, anadromous and resident fishes, migratory and resident wildlife, and diverse natural vegetation.
- To mitigate adverse effects of activities and facilities adjacent to the Parkway.
- To provide public safety and protection within and adjacent to the Parkway.

The guiding concept policies focus on balanced management, recreation appropriate to the Parkway, resource protection, and land use and cooperation among the jurisdictions and agencies that have regulatory responsibilities within the Parkway.

3A.12.3 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. These thresholds also encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. The Proposed Project or alternatives under consideration were determined to result in a significant impact related to parks and recreation if they would do any of the following:

- include new recreational facilities, or require the construction or expansion of existing recreational facilities that might have a substantial adverse physical effect on the environment; or

- increase demand on existing neighborhood and community parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

ANALYSIS METHODOLOGY

The evaluation of recreational resources is based on a comparison between existing and planned future recreational facilities and the policies of the City of Folsom General Plan and Parks and Recreation Master Plan. Because the SPA would be annexed into the City of Folsom as part of the project, the demand for recreational resources was estimated based on the City of Folsom's adopted park acreage standard of 5 acres per 1,000 residents. However, under the No Project Alternative, the SPA would not be annexed into the City and would remain in Sacramento County as agricultural land, which does not require development of parks or recreational facilities. The number of residents generated by the project was estimated based on per-dwelling-unit population generation factors (see Table 3A.13-3 in Section 3A.13, "Population, Employment, and Housing - Land"). Parklands (mini, neighborhood, and community parks) identified in the City of Folsom Parks and Recreation Master Plan and those proposed for the project are the focus of this analysis. Open Space and Public/Quasi-Public land uses (including schools, open space, preservation areas, and bicycle trails) are not considered part of this analysis because the City does not consider these uses as meeting parkland dedication requirements; therefore, these uses were not included in the project's total parkland acreage.

The El Dorado County General Plan Parks and Recreation policies (July 2004) are not used to analyze the project's impacts on recreation facilities because the only elements that would be located in El Dorado County are two local roadway connections (under the Proposed Project Alternative only) that would connect to existing roads within a residential subdivision in El Dorado Hills. These off-site roadway improvements would not involve construction of new housing or development of new employment opportunities in El Dorado County beyond temporary construction jobs. Therefore, these roadway connections would not generate direct increases in population that would result in additional demand for parkland facilities in El Dorado County or cause deterioration of existing facilities. With the exception of the No Project Alternative, all project (action) alternatives would include community parks, which would provide communitywide recreational opportunities serving multiple neighborhoods, and neighborhood parks, which would range in size from 3–10 acres and would be linked to neighborhoods and services by trails and bicycle facilities. The neighborhood parks would be located adjacent to proposed school sites to provide joint-use opportunities. Small local parks would also be provided within residential areas. These local (mini) parks would be between 1 and 3 acres in size and would serve the recreational needs of the immediate residential area.

With the exception of the No Project Alternative, all project alternatives would include the development of bicycle and pedestrian trails, including Class I paved off-street bike paths, Class II bicycle lanes, and 12-foot-wide multi-use trails. However, because these uses are not considered by the City as meeting parkland dedication requirements, they were not included in the project's total parkland acreage evaluated herein.

Table 3A.12-3
Project Parkland Acreage Calculations

Alternative	Projected Population[1]	Parkland Requirement (5 acres per 1,000 residents)[2]	Total Proposed Parkland (acres)	Total Surplus (+) or Deficit (-) of Parkland Acreage Compared with Requirement
No Project[3]	128	0.6	0	-0.6
Proposed Project	24,335	121.7	121.7	0
Resource Impact Minimization	19,584	97.9	105.7	+7.8
Centralized Development	20,689	103.4	118.7	+15.3
Reduced Hillside Development	28,084	140.4	170.9	+30.5
No USACE Permit	15,808	79.0	84.8	+5.8

Notes:
[1] See Table 3A.13-3 of this EIR/EIS for details on the projected population of each project alternative.
[2] City of Folsom General Plan Parks and Recreation Element, Goals and Policies, 1993 Update.
[3] Under the No Project Alternative, the SPA would not be annexed into the City of Folsom and would remain in Sacramento County. Therefore, the parkland requirement would be a minimum of 3 acres of parkland per 1,000 residents.
Source: Data compiled by AECOM in 2010

This analysis does not address various public and commercial recreational and entertainment facilities, such as community centers, movie theaters, or gymnasiums, which can be expected to be developed as part of the project but which have not been specifically identified at this time. Open space areas do not qualify as park space under the City's standards, and a comparison with open space requirements is also not part of this analysis. Compliance with Sacramento Local Agency Formation Commission (LAFCo) requirements for the annexation of the SPA into the City of Folsom, including open space requirements, is addressed in Section 3A.10, "Land Use Planning and Agricultural Resources - Land," of this EIR/EIS.

Table 3A.12-3 presents the estimated population, the total parkland acreage proposed, and comparison to the City of Folsom's park acreage standard for the Proposed Project and each of the four action alternatives. The No Project Alternative is compared to the Sacramento County park acreage standard. As explained in Section 3A.13 "Population, Employment, and Housing - Land" of this EIR/EIS, the population projections for each project alternative were calculated by multiplying the number of proposed housing units by the City of Folsom persons per dwelling unit factor. Single-family dwelling units were assumed to generate 2.92 persons per dwelling unit. Multifamily and mixed use dwelling units were assumed to generate 1.94 persons per dwelling unit. The population estimate has been rounded (either up or down) to create a whole number estimate for each land use category. The total proposed parkland acres are based on the land use plans for the action alternatives, which are contained in Chapter 2, "Alternatives."

IMPACT ANALYSIS

Impacts that would occur under each alternative development scenario are identified as follows: NP (No Project), NCP (No USACE Permit), PP (Proposed Project/Action), RIM (Resource Impact Minimization), CD (Centralized Development), and RHD (Reduced Hillside Development). The impacts for each alternative are compared relative to the PP at the end of each impact conclusion (i.e., similar, greater, lesser).

IMPACT 3A.12-1 Sufficiency of Proposed Parkland to Meet Increased Demand and Potential Increased Use and Deterioration of Existing Facilities. *Residential development proposed for the SPA would require 5 acres of parkland per 1,000 residents to meet the adopted City of Folsom standards. Increased population could increase the demand on existing neighborhood and community parks such that the physical deterioration of the existing facilities could occur or be accelerated.*

On-Site Elements

NP

The SPA is currently zoned AG-80, which allows for the construction of one dwelling unit per 80 acres. The SPA encompasses approximately 3,500 acres; therefore a total of 44 dwelling units could be constructed under the No Project Alternative. Based on the average household size factor for a single-family residence, 44 additional dwelling units would result in 128 new residents. No off-site water facilities would be constructed.

Under the No Project Alternative, the SPA would not be annexed into the City of Folsom and would remain in Sacramento County. Potential construction of individual rural residences on 80-acre parcels under the existing agricultural land use and zoning would not require any tentative maps, subdivision maps, or other approvals other than individual building permits. Agricultural land uses do not have a requirement for provision of park land. Although the new residents generated under this alternative would increase the demand on existing neighborhood and community parks, the contribution of these residents to increased use of existing off-site neighborhood or community parks would be minimal because of the limited increased in population. Therefore, this **indirect** impact is considered **less than significant**. **No direct** impacts would occur. ***[Lesser]***

NCP

As shown in Table 3A.12-3 above, the No USACE Permit Alternative would generate 15,808 new residents in the City of Folsom at buildout. This alternative would include 84.8 acres of community, neighborhood, and local parks for active recreation, which in comparison with the parkland requirement of 79 acres would result in a surplus of 5.8 acres of parkland. This would result in over 5 acres of developed parks per 1,000 residents at buildout. Because the No USACE Permit Alternative would provide sufficient park facilities to meet the demand generated by the projected population at buildout, this **direct** impact would not result in a substantial increase in the use of existing parks and is considered **less than significant**. The indirect impacts from development of parklands on all other topical areas are analyzed in Impact 3A.12-2 and throughout the resource sections in Chapter 3 of this EIR/EIS. Because implementation of the Proposed Project Alternative would meet the City's parkland requirements, deterioration of existing neighborhood and community parks would not occur or be accelerated from increased demand, and there would be **no indirect** impacts. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

PP

As shown in Table 3A.12-3 above, the Proposed Project Alternative would generate 24,335 new residents in the City of Folsom at buildout. The Proposed Project Alternative would include 118.4 acres of community and neighborhood parks and an additional 3.5 acres of local parks, for a total of 121.7 acres of developed parks for active recreation, which meets the City's requirement of 5 acres of parkland per 1,000 residents. Because the Proposed Project Alternative would provide sufficient park facilities to meet the demand generated by the projected population at buildout, this **direct** impact would not result in a substantial increase in the use of existing parks and is considered **less than significant**. The indirect impacts from development of parklands on all other resource areas are analyzed in Impact 3A.12-2 and throughout the topical sections in Chapter 3 of this EIR/EIS. Because implementation of the Proposed Project Alternative would meet the City's parkland requirements,

deterioration of existing neighborhood and community parks would not occur or be accelerated from increased demand, and there would be **no indirect** impacts.

Mitigation Measure: No mitigation measures are required.

RIM

As shown in Table 3A.12-3 above, the Resource Impact Minimization Alternative would generate 19,584 new residents in the City of Folsom at buildout. This alternative would include 105.7 acres of community, neighborhood, and local parks for active recreation, which in comparison with the parkland requirement of 97.9 acres, would result in a surplus of parkland. Because the Resource Impact Minimization alternative would result in over 5.0 acres of developed parks per 1,000 residents at buildout and would provide sufficient park facilities to meet the demand generated by the projected population at buildout, this **direct** impact would not result in a substantial increase in the use of existing parks and is considered **less than significant**. The indirect impacts from development of parklands on all other resource areas are analyzed in Impact 3A.12-2 and throughout the topical sections in Chapter 3 of this EIR/EIS. Because implementation of the Proposed Project Alternative would meet the City's parkland requirements, deterioration of existing neighborhood and community parks would not occur or be accelerated from increased demand, and there would be **no indirect** impacts. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

CD

As shown in Table 3A.12-3 above, the Centralized Development Alternative would generate 20,689 new residents in the City of Folsom at buildout. This alternative would include 113.5 acres of community and neighborhood parks and 5.2 acres of local parks for active recreation. This would result in a total of 118.7 acres of parkland, which would meet the City's requirement of 5 acres of developed parks per 1,000 residents. Because the Centralized Development Alternative would provide sufficient park facilities to meet the demand generated by the projected population at buildout, this **direct** impact would not result in a substantial increase in the use of existing parks and is considered **less than significant**. The indirect impacts from development of parklands on all other topical areas are analyzed in Impact 3A.12-2 and throughout the resource sections in Chapter 3 of this EIR/EIS. Because implementation of the Proposed Project Alternative would meet the City's parkland requirements, deterioration of existing neighborhood and community parks would not occur or be accelerated from increased demand, and there would be **no indirect** impacts. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

RHD

As shown in Table 3A.12-3 above, the Reduced Hillside Development Alternative would generate 28,084 new residents in the City of Folsom at buildout. This alternative would include 158.6 acres of community and neighborhood and 12.3 acres of local parks for active recreation. This would result in a total of 170.9 acres of parkland, which would meet the City's requirement of 5 acres of developed parks per 1,000 residents. Because the Reduced Hillside Density Alternative would provide sufficient park facilities to meet the demand generated by the projected population at buildout, this **direct** impact would not result in a substantial increase in the use of existing parks and is considered **less than significant**. The indirect impacts from development of parklands on all other topical areas are analyzed in Impact 3A.12-2 and throughout the resource sections in Chapter 3 of this EIR/EIS. Because implementation of the Proposed Project Alternative would meet the City's parkland requirements, deterioration of existing neighborhood and community parks would not occur or be accelerated from increased demand, and there would be **no indirect** impacts. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

Off-Site Elements

The off-site elements of the Proposed Project Alternative are related to the provision of utilities and infrastructure to the SPA and roadway improvements, and would not involve construction of new housing or development of new employment opportunities in Sacramento or El Dorado Counties beyond temporary construction jobs. Therefore, there would be no direct increases in population that would result in additional demand for parkland facilities. No parkland facilities would be constructed in relation to off-site elements, nor would any be required. Therefore, off-site elements would result in **no direct** or **indirect** impact to parkland facilities. ***[Lesser]***

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.12-2 Increased Use and Potential Physical Deterioration of Existing Off-Site Local or Regional Park Facilities. *Project implementation would result in a large number of new residents, which would increase the use and could cause the potential physical deterioration of existing off-site local and regional park facilities.*

On-Site Elements

NP

The 128 new residents that could be generated by ongoing development under the AG-80 zoning would be expected to use existing off-site recreational opportunities and facilities such as those at Folsom Lake SRA, Folsom Powerhouse SHP, and the American River Parkway, including bicycle trails, campgrounds, boat launch facilities, and sports parks. However, the contribution of these residents to increased use of existing off-site local or regional parks would be minimal due to the limited increase in population, as compared with the expected service populations and service areas of these facilities as presented in Table 3A.12-1. No off-site water facilities would be constructed. Additionally, although it cannot be fully ascertained with any degree of certainty exactly how many residents and with what frequency they would choose to use off-site recreational facilities, for purpose of this analysis, it is assumed that revenues from use charges and admission fees of these off-site facilities would increase along with increased usage, thus supporting increased maintenance. This **indirect** impact is considered **less than significant**. **Direct** impacts are analyzed in Impact 3A.12-1. ***[Lesser]***

NCP, PP, RIM, CD, RHD

As presented in Table 3A.14-3 of this EIR/EIS, at full project buildout, the No USACE Permit Alternative would result in an estimated 15,808 new residents; the Proposed Project Alternative would result in an estimated 24,335 new residents in the City of Folsom; the Resource Impact Minimization Alternative would result in an estimated 19,584 new residents; the Centralized Development Alternative would result in an estimated 20,689 new residents; and the Reduced Hillside Development Alternative would result in an estimated 28,084 new residents. Any of these project alternatives would represent a substantial population increase. In addition to the on-site facilities, the new residents would also be expected to use existing off-site recreational facilities such as those at Folsom Lake SRA, Folsom Powerhouse SHP, and the American River Parkway, including bicycle trails, campgrounds, boat launch facilities, and sports parks. Although it cannot be fully ascertained with any degree of certainty exactly how many residents and with what frequency they would choose to use off-site recreational facilities, for purpose of this analysis, it is assumed that revenues from use charges and admission fees of these off-site facilities would increase along with increased usage, thus supporting increased maintenance. This **indirect** impact is considered **less than significant**. **Direct** impacts are analyzed in Impact 3A.12-1 ***[Similar]***

Mitigation Measure: No mitigation measures are required.

Off-Site Elements

The off-site elements of the Proposed Project Alternative are related to the provision of utilities and infrastructure to the SPA and roadway improvements, and would not involve construction of new housing or development of new employment opportunities in Sacramento or El Dorado Counties beyond temporary construction jobs. Therefore, there would be no direct increases in population from construction of these facilities that would result in increased use of existing off-site recreational facilities such as those at Folsom Lake SRA, Folsom Powerhouse SHP, and the American River Parkway, including bicycle trails, campgrounds, boat launch facilities, and sports parks. Therefore, construction of the off-site elements would result in **no indirect** impact to off-site parkland facilities. **Direct** impacts are analyzed in Impact 3A.12-1. ***[Lesser]***

Mitigation Measure: No mitigation measures are required.

3A.12.4 RESIDUAL SIGNIFICANT IMPACTS

Impacts associated with parks and recreation are considered less than significant. Therefore, there would be no residual significant impacts as a result of project implementation.

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This section was prepared by RMC Water and Environment.

3B.12 PARKS AND RECREATION – WATER

3B.12.1 AFFECTED ENVIRONMENT

This section provides a description of the existing park and recreation opportunities and facilities within the "Water" Study Area. In the context of the actions proposed as part of the Off-site Water Facility Alternatives, emphasis is placed on portions of the "Water" Study Area where physical environmental changes would occur. As provided in Chapter 2, "Alternatives," physical improvements proposed in Zone 4; whereas no physical improvements are proposed within Zones 1, 2, and 3. Zone 2 is also considered in this EIR/EIS from an operational standpoint in the context of the potential changes in flow that could occur within the Sacramento River as a result of long-term operation of the Off-site Water Facility Alternatives.

ZONE 4 OF THE "WATER" STUDY AREA

There are numerous open space resources within and adjacent to Zone 4 of the "Water" Study Area. Open space uses are concentrated in areas north along the American River Parkway, at Mather Regional Park, agricultural areas to the east of Sunrise Boulevard (south of White Rock Road), and within the floodplains of Morrison and Laguna Creeks. Recreational corridors have been developed along the FSC and Laguna Creek. The FSC from Nimbus Dam to about Sloughhouse Road includes a paved, bike and pedestrian path open to the public year-round. The path is used for recreational bicycling, commuter bicycling, and walking. South of Sloughhouse Road, the FSC is not open to the public. The Folsom Lake State Recreational Area (SRA) is located to the north of Zone 4 of the "Water" Study Area; however, views from the SRA in the vicinity of Folsom Lake include eastern portions of the "Water" Study Area.

The Prairie City OHV Park is located within the eastern section of the "Water" Study Area, south of White Rock Road and west of Scott Road. Blodgett Reservoir is situated in the southeastern part of Zone 4 of the "Water" Study Area and provides recreational opportunities for residents south of Mather Field and within the Sunrise-Douglas Community. Other regional and local parks that provide significant open space opportunities include the Wildhawk Golf Course south of the Freeport Project bifurcation, Mather Sports Complex, and the Cordova Shooting Center.

ZONE 2 OF THE "WATER" STUDY AREA

The Off-site Water Facility Alternatives would operate from the Freeport Project diversion/intake on the Sacramento River and would withdraw water for M&I uses in the SPA. The Sacramento River supports a variety of recreational, water-dependent activities including boating and fishing, and recreational activities including camping, hiking, picnicking, and sightseeing, that are enhanced by the scenic value of the river.

Two private marinas are located within the immediate vicinity of the project area: the Alamar Marina and Metro Marina. The Alamar Marina is located at River Mile 70.5 on the eastside of the Sacramento River. This marina offers covered and non-covered boat docks, a fuel dock, and houseboat and jet ski rentals. The Metro Marina is located at River Mile 70.5 on the eastside of the river. This marina consists of 13 cover slips that can accommodate boats 30 feet in length. The spaces are rented out on a daily, monthly or yearly basis. There are also several public and private boat launches located along the river.

There are numerous other informal recreation sites located along the length of the Sacramento River where public access is readily available and vehicle parking can be accommodated. These sites usually support bank fishing that occur during the course of the year, depending on the presence of game fish in this river reach. One such site is the area immediately north of the Sacramento Weir, where vehicle parking can be accommodated and access to

the Sacramento River is readily available. Public river access is typically not promoted or allowed on private property along the Sacramento River.

3B.12.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

The following Federal plans, policies, regulations, and laws related to parks and recreation are relevant to the Off-site Water Facilities Alternatives, and are described in detail in Section 3A.12, "Parks and Recreation – Land:"

- Americans with Disabilities Act

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

The following State plans, policies, regulations, and laws related to parks and recreation are relevant to the Off-site Water Facilities alternatives, and are described in detail in Section 3A.12, "Parks and Recreation – Land:"

- Folsom Lake State Recreational Area and Folsom Powerhouse State Historic Park General Plan/ Resource Management Plan

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

The following local and regional plans, policies, regulations, and laws related to parks and recreation are relevant to the Off-site Water Facilities alternatives, and are described in detail in Section 3A.12, "Parks and Recreation – Land:"

- Sacramento County General Plan
- City of Folsom General Plan
- City of Folsom Parks and Recreation Master Plan
- American River Parkway Plan

City of Rancho Cordova General Plan

The following goals and policies of the City of Rancho Cordova General Plan (2006) are applicable to the Off-site Water Facility Alternatives under consideration.

- **Policy OSPT.3.1:** Develop a trails system that provides for maximum connectivity, so that all trails are linked for greater use as recreational and travel routes.

- **Upper Laguna Creek Collaborative:** The Collaborative is advocating the planning, design, and development of a parkway along the Upper Laguna Creek. The City is participating in and supporting the effort of the Collaborative to develop a plan for Upper Laguna Creek. Future successes will be incorporated into the General Plan implementation documents such as the Trails Master Plan.

3B.12.3 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. These thresholds also encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its

impacts. For the purposes of this analysis, the City's proposed Off-site Water Facilities would result significant environmental effects to recreational facilities if they would:

- cause a change in river flows or lake elevations that would result in substantial changes to existing recreational opportunities,
- locate project facilities that would result in a substantial short or long-term disruption of any existing recreational activities and/or facilities,
- cause an increase in the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated, or
- include the construction of new or expanded recreational facilities, which could result in adverse physical effects to the environment.

ANALYSIS METHODOLOGY

The assessment of potential impacts to recreational opportunities or facilities focuses on evaluating whether the Off-site Water Facilities would impact (1) water-dependent (e.g., boating and swimming) and water-enhanced recreation opportunities along the Sacramento River and other major water supply reservoirs (i.e., Shasta, Folsom) and (2) recreation areas or facilities crossed by facilities proposed as part of the Off-site Water Facilities. Effects on recreation were evaluated in relation to potential construction and operational-related impacts. A long-term, operational effect could occur if a recreation opportunity is eliminated as a result of construction activities associated with a project facility.

ISSUES NOT DISCUSSED FURTHER IN THIS EIR/EIS

Increase Use of Parks and Recreational Facilities—The Off-site Water Facility Alternatives would not result in land uses that could directly increase the use of existing neighborhood and regional parks, or other recreational facilities. The Off-site Water Facility Alternatives would involve the acquisition of new surface water supplies for the SPA and the construction of supporting conveyance and treatment facilities to enable for the delivery of treated-water. Based on these actions, it is reasonable to conclude that the Off-site Water Facility Alternatives would indirectly facilitate additional population growth within the SPA. These issues are addressed in more detail in Chapter 4, "Other Statutatory Requirements," under the discussion of "Growth-Inducement." Given that the Off-site Water Facilities would not directly generate new population growth that could result in increases in the use of neighborhood and regional parks or other recreational facilities, no adverse impacts are expected. Therefore, this issue area is not discussed further.

Construction of New Recreational Facilities—Based on those actions described in Chapter 2, "Alternatives," the Off-site Water Facility Alternatives would not involve the construction of new or expanded recreational facilities, which could result in adverse physical effects to the environment. In this context, no adverse impacts are expected, and this issue area is not discussed further.

IMPACT ANALYSIS

Impacts that would occur under each of the Off-site Water Facility Alternatives are identified as follows:

NCP (No USACE Permit Alternative)

PA (Proposed Off-site Water Facility Alternative)

1 (Off-site Water Facility Alternative 1 – Raw Water Conveyance – Gerber/Grant Line Road Alignment and White Rock WTP)

1A (Off-site Water Facility Alternative 1A Raw Water Conveyance – Gerber/Grant Line Road Alignment Variation and White Rock WTP)

2 (Off-site Water Facility Alternative 2 Treated Water Conveyance – Douglas Road Alignment and Vineyard SWTP)

2A (Off-site Water Facility Alternative 2A Treated Water Conveyance – Excelsior Road Alignment Variation and Vineyard SWTP)

2B (Off-site Water Facility Alternative 2B Treated Water Conveyance – North Douglas Tanks Variation and Vineyard SWTP)

3 (Off-site Water Facility Alternative 3 Raw Water Conveyance – Excelsior Road Alignment and White Rock WTP)

3A (Off-site Water Facility Alternative 3A Raw Water Conveyance – Excelsior Road Alignment Variation and White Rock WTP)

4 (Off-site Water Facility Alternative 4 Raw Water Conveyance – Easton Valley Parkway Alignment and Folsom Boulevard WTP)

4A (Off-site Water Facility Alternative 4A Raw Water Conveyance – Easton Valley Parkway Alignment Variation and Folsom Boulevard WTP).

The impacts for each alternative are compared relative to the PA at the end of each impact conclusion (i.e., similar, greater, lesser).

IMPACT 3B.12-1 Temporary Disruptions to Existing Recreational Facilities and Opportunities. *Implementation of the Off-site Water Facility Alternatives could temporarily disrupt trail, golf course, or park facility access.*

NCP, PA, 1, 1A, 2, 2A, 3, 3A, 4, and 4A

Construction of the Off-site Water Facilities under each of the alternatives would involve crossing the FSC, which could temporarily disrupt the use of the FSC multiuse trail. In addition, Off-site Water Facility Alternatives 2, 2A, 3, 3A, 4, and 4A would traverse through Mather Regional Park, thereby potentially disrupting trail, golf course, or park facility access. Therefore, disruptions to local recreation facilities as a result of the Off-site Water Facilities construction under Alternatives PA, 1, 1A, 2, 2A, 3, 3A, 4, and 4A would result in **potentially significant**, **direct** impacts. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure 3B.12-1: Provide for Continued Recreational Access as Identified in Mitigation Measure 3.14-1a.

As part of the Traffic Control Plan identified in Mitigation Measure 3.14-1a, the City shall ensure that trail access is maintained throughout the construction period through the use of detours. Proper signage shall be included in multiple locations, where necessary, to provide advance notice to hikers and equestrian riders of up-comings construction activities.

Implementation: City of Folsom Utilities Department

Timing: Prior to and during construction activities

Enforcement: 1. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department.

2. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.

2B

Off-site Water Facility Alternative 2B would be constructed to the east of the FSC and Mather Regional Park and is not expected to result in the obstruction of recreational trail access. As a result, **no impacts** to existing recreational facilities or opportunities are expected from construction of the Off-site Water Facilities under Alternative 2B. ***[Lesser]***

Because Mitigation Measure 3B.12-1 would require the public to be notified of the duration of roadway construction, detour routes would be established either through the construction site or on adjacent public streets, and access would be restored to preconstruction conditions, therefore, impacts on recreational facilities would be reduced to a **less-than-significant** level.

Mitigation Measure: No mitigation measures are required.

IMPACT 3B.12-2 Effects to Water-Oriented Recreational Facilities and Opportunities. *Implementation of the Off-site Water Facility Alternatives would not cause an adverse change in river flows or lake elevations that could result in substantial changes to existing recreational opportunities.*

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A

Section 3B.9, "Hydrology and Water Quality – Water" provides a detailed discussion of the potential impacts to flows within the Sacramento River as a result of the Off-site Water Facilities' operations. As described in Chapter 2, "Alternatives," all of the Off-site Water Facility Alternatives would involve an assignment of CVP water from NCMWC to the City that would then be diverted through the Freeport Project intake. This change in point of diversion would result in water being diverted further south, approximately 20 miles, as compared to existing conditions. As described in Section 3B.9.3, this operational change would result in a negligible change in the frequency with which flows in the Sacramento River are within a range suitable for water-dependent recreation during the peak recreation season (May to September). In addition, based on CALSIM modeling, the reduced demand during the late summer months would likely benefit water recreational activities by a minor addition in river flows. Based on these circumstances, **direct** impacts to river recreation would be **less than significant**. **No indirect** impacts would result. ***[Similar]***

Likewise, the Off-site Water Facilities would result in negligible changes in the frequency with which the surface elevations of Shasta and Trinity Reservoirs would fall below levels identified as important water-dependent recreation thresholds. This finding is primary due to reduction in releases that would occur under the Off-site Water Facility Alternatives during the late summer months thereby adding slighting to surface elevations within the reservoirs. Additionally, the increases in releases during the winter and spring months are expected to be more than compensated for by high inflows to the reservoirs during these months. In the context of these findings, these **direct** impacts are considered **less than significant**. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

3B.12.4 RESIDUAL SIGNIFICANT IMPACTS

After implementation of applicable mitigation measures, including 3B.12-1, impacts from implementation of the Off-site Water Facility Alternatives would all be less than significant.

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3A.13 POPULATION, EMPLOYMENT, AND HOUSING - LAND

3A.13.1 AFFECTED ENVIRONMENT

POPULATION

Sacramento County

The following population data for Sacramento County (County) was obtained from the adopted Sacramento County General Plan Housing Element (2008). Population data in the Housing Element was based on 1990 and 2000 U.S. Census Bureau data, California Department of Finance (DOF) data, and the Sacramento Area Council of Governments' (SACOG's) most recent projections released in 2007. From 1990 to 2000, the population of Sacramento County increased from 1,041,219 to 1,223,499, or 17.5% (Sacramento County 2008). The population in the unincorporated area of the County declined by 26% during the same time period with the incorporation of the City of Elk Grove and the City of Rancho Cordova. As of January 1, 2008, the population of Sacramento County was estimated to be 1,424,415 (DOF 2008), an approximately 14.1% increase from 2000.

The Sacramento County General Plan Housing Element projects the County's population growth in the single-digit range for each five-year period between 2000 and 2025. Population growth per five-year period is anticipated to gradually decline, from nearly 9% between 2000 and 2005 to about 3% between 2020 and 2025. Modest population growth is also anticipated in the unincorporated County area. However, much of the projected population growth will occur in developing areas of the County that are now part of Elk Grove and Rancho Cordova. Sacramento County is projected to have a population of 1,695,498 by 2025 (Sacramento County 2008).

City of Folsom

The following population data for the City of Folsom are taken from City of Folsom General Plan Housing Element Background Report, adopted July 14, 2009. The population data in the City's adopted Housing Element is drawn largely from 2000 U.S. Census Bureau data, the DOF, and SACOG. The City's adopted Housing Element (2009) serves a 7.5-year planning period from January 1, 2006 to June 30, 2003. As presented in the City's 2002 Housing Element Background Report, from 1990 to 2000, the population of Folsom increased from 29,802 to 51,884, a 42.6% increase. Folsom's population was anticipated to increase from 51,884 in 2000 to 74,185 in 2010, an average annual growth rate of 3.6%. The City's current Housing Element (2009) estimates the population of Folsom will grow to 69,800 in 2013 and 76,333 in 2015. These population projections show a substantial decline in growth from what occurred between 1990 and 2008. By 2035, population is anticipated to increase to 97,485 persons. These projections do not include Folsom Prison or California State Prison Sacramento population. In addition, these projections do not include population that would be generated by the project.

As of January 1, 2008, the population of the City of Folsom, including the inmate population in Folsom Prison and the California State Prison Sacramento, was estimated to be 72,590 (DOF 2008). After subtracting the 7,284 inmates that the California Department of Corrections and Rehabilitation counted at Folsom Prison and California State Prison Sacramento in March 2008, the noninstitutionalized population in Folsom is estimated at 65,306 as of 2008.

Approximately 10% of Folsom's population is located in group quarters, which consists mainly of Folsom Prison, California State Prison Sacramento, and other facilities such as nursing care facilities. Per the adopted Housing Element (2009), the total group quarters population in Folsom increased only slightly from 6,720 in 1990 to 6,944 in 2000. The Folsom Prison population was 6,740 as of June 2001 (City of Folsom 2002). The total group quarters population in the City increased slightly from 6,944 in 2000 to 6,852 in 2007. Data from the California Department of Corrections and Rehabilitation shows that the population at Folsom Prison and California State Prison Sacramento has increased from 6,523 inmates in March 2002 to 7,284 inmates in March 2008. The

estimated number of inmates in 2008 exceeds the 2007 DOF estimate of group quarters population by approximately 400 (City of Folsom 2009).

El Dorado Hills

El Dorado Hills is a census designated place (CDP) within unincorporated El Dorado County. El Dorado Hills is the most rapidly developing region of El Dorado County. This area is dominated by high-end housing that serves primarily residents commuting to the Sacramento region (El Dorado County 2003:5-1.7). From 1990 to 2000, the population of El Dorado Hills increased from 18,016 to 32,436, or 44.5% (U.S. Census 2000, 2007).

EMPLOYMENT

Employment growth is one of the primary determinants of housing demand. Working-age individuals often choose a place to live based on employment prospects in the local area. Therefore, employment trends are an important indicator of housing demand. The rate of employment growth, and the types of jobs most likely to be created, would determine how much housing would be needed by type and cost. For example, an economy based on seasonal tourism will generate different housing needs for workers than an economy based on government, education, research, and technology. The following discussions provide the historical, current, and future employment conditions for Sacramento County, Folsom, and El Dorado Hills. The anticipated trend in the jobs/housing index is provided in Chapter 4, "Other Statutory Requirements."

Sacramento County

The following summarizes employment trends in Sacramento County in the last 10 years (Sacramento County 2008:5-12).

- The Sacramento County economy diversified, with decreasing reliance on government employment on the long-term.
- Significant job growth occurred among companies that serve markets beyond Sacramento County.
- New jobs included higher-paying professional jobs and lower-paying service and retail jobs. However, three-fourths of new jobs in occupations with the greatest anticipated job growth will pay salaries below the Sacramento County median income.
- Most employment growth was centered within incorporated areas of the County. However, there will be an increasing potential for job growth through conversion and reuse of older commercial and industrial sites within unincorporated communities.

The Sacramento County labor market has traditionally been dominated by public agency employment, services, and retail/wholesale trades. Sacramento County had an average of 573,100 civilian jobs in 2004. Of the total employment, 32% was in nonfinancial services, 28% in government, 20% in retail and wholesale trades, 12% in goods producing industries, 7% in financial/insurance/real estate services, and 1% in farming (Sacramento County 2008:5-12). Among all employers (public and private), the sectors that consist of local government agencies, health care and related services firms, educational establishments, and technology firms are among the major employers in the Sacramento region. The largest employers in Sacramento County include Kaiser Permanente, Raley's Inc., UC Davis Health Systems, Mercy/CHW, Intel Corporation, Sutter Health, and AT&T (Sacramento County 2008:5-13).

Between 1990 and 2000, business service firms added nearly 38,000 jobs to the Sacramento economy. Manufacturing firms added another 21,000 jobs, followed by engineering and management service firms at nearly 5,000 jobs. The U.S. Census Bureau's 2007 data estimates 655,300 persons in the Sacramento County labor force (population 16 years and over) during that period (Sacramento County 2008:5-12). Annual job growth is expected

to accelerate between 2005 and 2015 to over 4,000 jobs per year and then decline to about 1,400 jobs per year by 2025. The rate of projected job growth in the unincorporated area, about 1%, is below the projected Countywide level of 2.5% between 2000 and 2005. Much of the projected job growth is expected to occur in employment centers located within the newly incorporated City of Rancho Cordova (Sacramento County 2005). Projections for employment in Sacramento County indicate 814,220 in the labor force by 2025. (Sacramento County 2008 :5-14.)

Jobs with the greatest anticipated growth in the Sacramento region are health care services, security services, food and retail trades, business and personal services, and clerical/ administrative support. Substantial job growth is also anticipated in computer and other technical specialties, law enforcement and emergency services, and transportation. Most of these jobs will pay salaries at low- to moderate-income ranges, even accounting for an average of 1.4 workers per household. Among the jobs that are expected to experience the most growth are food service, maintenance, personal care, and retail jobs that pay average wages of $8 to $14 per hour, or approximately $17,000 to $29,000 per year (Sacramento County 2008:5-14).

City of Folsom

For many years, Folsom had an economy largely based on Folsom State Prison "industry," which has been in existence for over a century. Recent economic and employment trends have shifted, however, with Folsom's economic development efforts to plan for commercial and industrial development. A number of large, national corporations involved in the research, development, and manufacturing of electronic components have located regional offices and manufacturing facilities in Folsom. Additionally, several large retail/commercial centers have been completed or are under construction. Intel Corporation is the largest private industry employer in Folsom with approximately 6,800 employees at its Folsom branch (as of early 2008). About one-third of Intel's employees are Folsom residents, another third reside in the Greater Sacramento Area, and the other third reside in El Dorado and Placer Counties. Other large employers in Folsom include the California State Prison system (1,500), Folsom-Cordova Unified School District (1,400), and Verizon Wireless (1,000) (SACOG 2005).

Employment in the City Folsom is projected to increase at a 4.8% annual rate from 2000 to 2010 (from 21,237 to 33,826 people), which is almost twice the projected annual employment growth rate of 2.5% for Sacramento County for the same period. Between 2000 and 2007, employment in Folsom increased from 25,311 to 33,782 (population of persons 16 years and older) (U.S. Census Bureau 2007). The City's Housing Element (2009) projects future growth in employment to 26,548 in 2013 and 40,901 in 2025, but indicates that employment will increase at a declining rate because the City is reaching commercial/industrial buildout.

El Dorado Hills

Between 2000 and 2007, employment in El Dorado Hills increased from 9,001 to 16,927 (population of persons 16 years and older) (U.S. Census Bureau 2007). Of the total employment, 47% was in nonfinancial services, 29% in goods producing industries, 15% in retail and wholesale trades, and 12% in financial/insurance/real estate services (Sacramento County 2008:5-12). In general, these jobs do not pay in the range to support habitation in the type of housing available in El Dorado Hills. The result is an increasing number of individuals living in more affordable areas (in other parts of El Dorado County and Sacramento County) and commuting to work in El Dorado Hills (El Dorado County 2008).

The El Dorado Hills Business Park is one of the largest employment centers in El Dorado County (El Dorado County 2003:5.1-7). It is expected that the El Dorado Hills community area would develop 301 acres of job-generating land uses in the future (El Dorado County 2003:5.1-14).

HOUSING

Sacramento County

The total number of housing units in Sacramento County increased from 474,814 in 2000 to 541,106 in 2007. Sacramento County's housing growth rate was approximately 12.3%, with the supply and composition of housing changing little in this period. Approximately 63% of housing units Countywide are single-family homes (U.S. Census Bureau 2007). In 2007, Sacramento County had an average household size of 2.69 (considered to be a relatively large household). The County's Housing Element projects that in 2025, the total housing units would increase to 662,004 and the average household size would increase to 2.55, based on the assumption that housing development in the unincorporated area will attract more families with children and that, conversely, there will be slight declines in average household sizes for most of the cities in Sacramento County. The 2035 projections indicate a further increase in households in the county, with a total of 732,678 households by 2035 (SACOG 2007).

The relative ability of a community to meet the demands for local housing is analyzed using a "vacancy rate," which establishes the relationship between housing supply and demand. If the demand for housing units is greater than the available supply, then the vacancy rate is low and the price of housing will most likely increase at a higher rate than an area where supply and demand are more in balance. According to HCD (2000), a housing vacancy rate of 5% is considered normal. Vacancy rates below 5% indicate a housing shortage in a community. Sacramento County had a vacancy rate of 7.5% from 2005–2007 (U.S. Census Bureau), which indicates that the County had a greater amount of housing supply than demand, not a housing shortage. However, SACOG (2001) projects a vacancy rate of 4.74% by 2025 (SACOG 2001), which may indicate there will be a slight shortage of housing in the County in the future.

City of Folsom

The City of Folsom is a suburban, bedroom community for the greater Sacramento area. The total number of housing units in Folsom increased from 17,968 in 2000 to 24,825 in 2007. The City's housing growth rate was approximately 27.6%, with the supply and composition of housing changing little in this period. Approximately 72% of housing units are single-family homes (U.S. Census Bureau 2007; City of Folsom 2008). In 2007, Folsom had an average household size of 2.63 (considered to be a relatively large household). The number of households is projected to grow to 26,548 in 2013 and 36,119 in 2035. With the population increasing at a faster rate than the number of households, household size is projected to increase to 2.63 in 2013 and 2.70 in 2035 (City of Folsom 2008:18).

The U.S. Census Bureau reports that Folsom had a vacancy rate of 1.6% for owner-occupied units and 2.6% for rental units in 2007. These vacancy rates indicate that the City experienced a tight housing market and a housing shortage.

El Dorado Hills

There is currently a concentration of high-end housing development in El Dorado Hills (El Dorado County 2008:28). The total number of housing units in El Dorado Hills increased from 6,071 in 2000 to 11,268 in 2007. The housing growth rate in El Dorado Hills was approximately 46%, with the supply and composition of housing changing little in this period. Approximately 72% of housing units are single-family homes (U.S. Census Bureau 2007). In 2007, El Dorado Hills had an average household size of 3.03 (considered to be a relatively large household). By 2025, El Dorado Hills is projected to have approximately 4,481 high-density residential units (El Dorado County 2003:5-1.37).

The U.S. Census Bureau reports that El Dorado Hills had a vacancy rate of 1.5% for owner-occupied units and 3.9% for rental units in 2007. These vacancy rates indicate that the community experienced a tight housing market and a housing shortage.

Regional Housing Needs Allocation

The 2006–2013 Regional Housing Needs Plan (RHNP) allocates to SACOG cities and counties their "fair share" of the region's projected housing needs (SACOG 2008). Each city and county in the RHNP receives a Regional Housing Needs Allocation (RHNA) of total number of housing units that it must plan for within a 7.5-year time period through their General Plan Housing Elements. Within the total number of needed units, allocations are also made for the number of very low-, low-, moderate-, and above-moderate-income units. The RHNP allocations take into consideration several factors: market demand for housing; type and tenure of housing supply; employment opportunities; commuting patterns; availability of suitable residential sites and public facilities; loss of assisted multifamily units; avoiding further concentration of lower income households; and special housing needs.

Sacramento County

As shown in Table 3A.13-1, SACOG anticipates that 59,093 housing units would be required in Sacramento County to meet regional housing needs. Of this total, 3,601 housing units have been allocated to the City of Folsom during the current planning period (2006-2013), as shown in Table 3A.13-2.

Table 3A.13-1
Sacramento County Regional Housing Needs Allocation for 2006–2013

Income Grouping	Projected Housing Units (2013)	Percent of Housing Need
Very low	12,604	21.3
Low	9,573	16.2
Moderate	11,265	19.1
Above-moderate	25,652	43.4
Total	**59,094**	**100.0**

Source: SACOG 2008

Table 3A.13-2
City of Folsom Regional Housing Needs Allocation for 2006–2013

Income Grouping	Projected Housing Units (2013)	Percent of Housing Need
Very low	1,073	29.8
Low	766	21.3
Moderate	810	22.5
Above-moderate	952	26.4
Total	**3,601**	**100.0**

Source: SACOG 2008

City of Folsom

As shown on Table 3A.13-3, the City has determined that there are a total of 1,399 affordable housing units under construction: 216 very low-income, 177 low-income, and 1,006 moderate-income housing units. There are an additional 479 planned and built above-moderate housing units for a total of 1,878 housing units (City of Folsom 2009:1-2). Folsom has estimated that 711 very low-income, 256 low-income, 213 moderate-income, and 1,273 above-moderate-income housing units for a total of 2,453 housing units could be constructed on vacant land within the existing City limits (City of Folsom 2009:6). In addition, the City has estimated that the project could construct 1,052 affordable housing units and 1,155 above-moderate housing units for a total of 2,816 housing units during the housing element planning period (City of Folsom 2009:7).

Table 3A.13-3
City of Folsom Projected Housing Units to Meet Regional Housing Needs Allocation for 2006-2013

Category	Very Low	Low	Moderate	Above-Moderate
Built and planned projects	216	177	1,006	479
Potential housing units within the existing City limits	711	256	213	1,273
Potential housing units within the SPA	1,052	--	609	1,155
Total housing units	**1,979**	**433**	**1,828**	**2,907**
Projected housing units (2013)	1,073	766	810	952
Total Difference	**+906**	**-333**	**+1,018**	**+1,955**

Source: City of Folsom 2009

The City anticipates that a total of 7,147 housing units could be constructed in Folsom during the current planning period (2006–2013) to meet regional housing needs. The total number of very low income, moderate income, and above-moderate income housing units would exceed the total required number of housing units in these categories. The total number of low income housing units would be less than that required to meet regional housing needs. Nevertheless, the projected number of housing units (7,147) would exceed the required number of housing units (3,601) identified in the RHNA.

3A.13.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

There are no Federal plans, policies, regulations, or laws related to population, employment, and housing that apply to the Proposed Project or alternatives under consideration.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

Regional Housing Needs Plan

A RHNP is mandated by the State of California (California Government Code Section 65584) for regions to address housing issues and needs based on future growth projections for the area. The RHNP is developed by SACOG and allocates to cities and counties their "fair share" of the region's projected housing needs based on household income groupings over the planning period for the housing elements of each specific jurisdiction. On February 21, 2008, the SACOG Board of Directors adopted the 2006–2013 RHNP. Cities and counties must develop and adopt their Housing Elements to address how they will meet their allocations. The Sacramento County General Plan and the City of Folsom General Plan Housing Elements are described below.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

Sacramento County General Plan

The following goals and policies of the *Sacramento County General Plan* (1993) are applicable only to the off-site detention basin east of Prairie City Road under the Proposed Project and the other four action alternatives. There are no Sacramento County goals and policies that are applicable to the No Project Alternative.

Land Use Element

GOAL: Accommodate projected population and employment growth in areas where the appropriate level of public infrastructure and services are or will be available during the planning period.

- **Policy LU-9.** Specific plans may be prepared for subareas of an urban growth area for the purpose of prioritizing development opportunities. In such cases, the Plan shall have defensible boundaries and address development of all lands within them.

GOAL: Land use patterns that minimize the impacts of new and existing development while maintaining the quality, character, and identity of neighborhood and community areas.

Objective: Neighborhoods with a balanced mix of employment, neighborhood services, and different housing types.

- **Policy LU-11.** Specific Plans and Community Plans for areas within the Urban Service Boundary should provide a balance of employment, neighborhood services, and different housing types wherever feasible.

GOAL: Accommodate an effective range of residential densities or commercial and industrial land use intensities within areas defined by the General Plan Land Use Diagram of the unincorporated County area.

Housing Element

GOAL: Provide an adequate supply of suitable sites for the development of a range of housing that varies sufficiently in terms of cost, design, size, location, and tenure to meet the housing needs of all segments of the County's population.

El Dorado County General Plan

There are no *El Dorado County General Plan* (2004) policies that are applicable to the Proposed Project or alternatives under consideration.

City of Folsom General Plan

The following goals and policies of the *City of Folsom General Plan* (January 1993) are applicable to the Proposed Project and the other four action alternative. There are no City of Folsom goals and policies that are applicable to the No Project Alternative.

Land Use Element

GOAL 4: To provide opportunities for residents to work, shop and enjoy leisure activities in the City.

- **Policy 4.1.** The City will plan for additional housing as determined in the Housing Element for the next 5 to 25 years.

GOAL 8: To allow a variety of housing types which provides living choices for Folsom residents.

GOAL 10: To provide for a commercial and industrial base of the City to encourage:

1. A strong tax base.
2. More jobs within the City.
3. A greater variety of commercial goods and services.
4. A regional shopping center.
5. Businesses and industries compatible with Folsom's quality of life.

Housing Element

GOAL 18: To provide for the City's regional share of new housing for all income groups.

- **Policy 18.1.** The City shall ensure that sufficient land is designated and zoned in a range of residential densities to accommodate the City's regional share of housing.

- **Policy 18.3.** The City shall identify sites that are suitable for multifamily housing and residential redevelopment.

- **Policy 18.4.** The City shall encourage home builders to develop their projects on multifamily-designated land at the high end of the applicable density range.

3A.13.3 Environmental Consequences and Mitigation Measures

Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. These thresholds also encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. The Proposed Project or alternatives under consideration could result in a significant impact related to population, employment, and housing if they would do any of the following:

- induce substantial population growth in an area, either directly (by proposed new homes and businesses) or indirectly (through the extension of roads or other infrastructure);

- generate a substantial demand for new housing, the construction of which could cause significant environmental impacts; or

- displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

Analysis Methodology

The examination of population, employment, and housing conditions in this section is based on information obtained from review of available population, employment, and housing data and projections, including those in the Sacramento County General Plan (1996) and Housing Element (2008), the City of Folsom General Plan (1988) and Housing Element (2009), the U.S. Census Bureau (1990, 2000, 2007), the DOF (2008), and other sources. El Dorado Hills is included in the area of consideration for population, employment, and housing issues for the Proposed Project Alternative only, because it is the only alternative that would include off-site roadway connections into El Dorado County.

Population projections for the SPA were calculated by multiplying the number of proposed housing units by the City of Folsom persons per dwelling unit factor. Single-family dwelling units were assumed to generate 2.92 persons per dwelling unit. Multifamily and mixed use dwelling units were assumed to generate 1.94 persons per dwelling unit. The population estimate has been rounded (either up or down) to create a whole number estimate for each land use category.

The Proposed Project and the other four action alternatives include new housing and businesses that would result in direct increases in population in Folsom over the buildout time period, estimated to be complete in 2030. This analysis assumes that project development would generate the numbers of residents and housing units, as presented in see Table 3A.13-4. Housing and population increases under the No Project Alternative would not be added to the City of Folsom because the SPA would remain under the jurisdiction of Sacramento County, therefore, the No Project Alternative is not included in the following or in Table 3A.13-4).

- The No USACE Permit Alternative would have a maximum of 6,373 dwelling units and generate approximately 15,808 new residents in Folsom.
- The Proposed Project Alternative would have a maximum of 10,210 dwelling units and generate approximately 24,335 new residents in Folsom.
- The Resource Impact Minimization Alternative would have a maximum of 7,965 dwelling units and generate approximately 19,584 new residents in Folsom.
- The Centralized Development Alternative would have a maximum of 9,026 dwelling units and generate approximately 20,689 new residents in Folsom.
- The Reduced Hillside Development Alternative would have a maximum of 11,553 dwelling units and generate approximately 25,022 new residents in Folsom.

In addition, the project would include development of mixed-use, office park, and commercial land uses. The target floor area ratios attached to each commercial/office/mixed-use acreage were developed by DKS Associates and were used to calculate the potential building square footage generated by project development. This analysis assumes that development of the Proposed Project and the other four action alternatives would generate the building square footage and numbers of employees listed below. No employees would be generated under the No Project Alternative.

- The No USACE Permit Alternative would include 401.9 acres of commercial land use, which would provide for an estimated 5,910,527 square feet of commercial building space and generate 13,021 employees.
- The Proposed Project Alternative would include a total of 475.6 acres of commercial land use, which would provide for an estimated 5,054,616 square feet of commercial building space and generate 13,210 employees.
- The Resource Impact Minimization Alternative would include a total of 349.7 acres of commercial land uses, which would provide for an estimated 5,083,059 square feet of commercial building space and generate 9,749 employees.
- The Centralized Development Alternative would include 349.7 acres in commercial land use, which would provide for an estimated 6,893,631 square feet of commercial building space and generate 16,860 employees.

Table 3A.13-4
Folsom South of 50 Specific Plan Residential Population Projections

Land Use Type	Acreage					Dwelling Units (DU)[1]					Projected Population[2]				
	PP	RIM	CD	RHD	NCP	PP	RIM	CD	RHD	NCP	PP	RIM	CD	RHD	NCP
Single - Family [2]	557.8	504.5	213.7	370.7	795.8	1,687	1,513	641	989	2,388	4,926	4,418	1,872	2,888	6,973
Single-Family High Density [2]	532.5	491.5	473.1	331.0	204.9	2,933	2,703	2,602	1,619	1,127	8,564	7,893	7,598	4,727	3,291
Multifamily Low Density [3]	266.7	245.9	282.4	483.2	147.0	2,434	2,213	2,542	3,866	1,323	4,722	4,293	4,931	7,500	2,567
Multifamily Medium Density [3]	67.0	52.3	113.6	144.6	54.5	1,224	942	2,044	2,314	981	2,375	1,827	3,965	4,489	1,903
Multifamily High Density [3]	49.9	11.5	30.5	107.1	8.4	1,251	287	764	2,380	210	2,427	557	1,482	4,617	407
Mixed-Use District [3, 4]	35.5	15.4	21.7	36.1	17.2	681	307	433	385	344	1,321	596	840	747	667
Total	**1,509.4**	**1,321.1**	**1,135**	**1,472.7**	**1,227.8**	**10,210**	**7,965**	**9,026**	**11,553**	**6,373**	**24,335**	**19,584**	**20,689**	**25,022**	**15,808**

PP = Proposed Project; RIM = Resource Minimization Alternative; CD = Centralized Development Alternative; RHD = Reduced Hillside Development Alternative; NCP = No USACE Permit Alternative.

[1] Target dwelling unit allocation is an estimate. Actual total dwelling units may be higher or lower, so long as it falls within land use density ranges and does not exceed the total target dwelling units.

[2] Based on the City of Folsom persons per dwelling unit for single-family dwelling units (2.92).

[3] Based on the City of Folsom persons per dwelling unit for multifamily and mixed-use dwelling units (1.94).

[4] The Mixed-Use District assumes that 60% of the total land use acreage would be used for residential and 40% would be used for commercial.

Source: RRM Design Group 2008 and 2009, data compiled by AECOM in 2009

- The Reduced Hillside Development Alternative would include 485.3 acres of commercial land use, which would provide for an estimated 7,183,306 square feet of commercial building space and generate 17,484 employees.

Specific indirect impacts associated with increased population, employment, and housing, such as traffic congestion, air quality degradation, noise generation, and increased demand for public services and utilities, are addressed in each technical section of this EIR/EIS, as appropriate. These technical sections provide a detailed analysis of other relevant environmental effects of the project; therefore, indirect impacts are not discussed further in this section.

IMPACT ANALYSIS

Impacts that would occur under each alternative development scenario are identified as follows: NP (No Action/No Project), NCP (No USACE Permit), PP (Proposed Project/Action), RIM (Resource Impact Minimization), CD (Centralized Development), and RHD (Reduced Hillside Development). The impacts for each alternative are compared relative to the PP at the end of each impact conclusion (i.e., similar, greater, lesser).

IMPACT 3A.13-1 Temporary Increase in Population and Subsequent Housing Demand during Construction. *Project implementation would generate a temporary increase in employment and subsequent housing demand in Sacramento County and the City of Folsom from construction jobs.*

On-Site and Off-Site Elements

NP

The No Project Alternative could develop up to 44 rural residences and generate approximately 128 new residents under the existing Sacramento County agricultural zoning classification AG-80, and no off-site water facilities would be constructed. All or a portion of these dwelling units could be constructed by individual property owners over the proposed 19-year buildout period (2011–2030); however, it would be speculative to attempt to predict how many units would develop or when they would develop, since they would be constructed on a parcel-by-parcel basis. Construction of 44 individual dwelling units would require a minimal number of construction workers; therefore, the temporary increase in population growth and housing demand associated with construction of the No Project Alternative is considered a **direct**, **less-than-significant** impact. **No indirect** impacts would occur. ***[Lesser]***

NCP, PP, RIM, CD, RHD

Project construction activities would occur at intervals throughout the planning horizon of the project, and the site would ultimately be built out in approximately 19 years (2011-2030). A greater number of construction workers would be employed during peak construction periods (determined by market demand and overall economic conditions), while fewer construction workers would be employed during nonpeak periods. Each development phase would likely be constructed as several small projects that would be ongoing in each development phase. For example, roads, utilities, a housing development, a commercial center, and supporting off-site improvements could all be constructed simultaneously. It is estimated, based on prior analyses of similar projects, that project-related construction would generate approximately 500 construction jobs during the peak construction period of each of the four phases. A greater number of construction workers would be employed during peak construction periods (determined by market demand and overall economic conditions), whereas fewer construction workers would be employed during nonpeak periods.

Construction workers serving the project can be expected to come from Folsom, Sacramento County, El Dorado Hills, and from nearby communities. According to the latest labor data available from the U.S. Census Bureau (2007), it is estimated that 2,269 residents in the Folsom, 54,964 residents in Sacramento County, and 850

residents in El Dorado Hills are employed in the construction industry. These existing residents in the city and counties who are employed in the construction industry would likely be sufficient to meet the demand for construction workers that would be generated by the project. Because construction workers serving the project could be expected to come from Folsom itself and from nearby communities in Sacramento County or El Dorado County, neither substantial population growth nor an increase in housing demand in the region is anticipated as a result of these jobs. Furthermore, if some construction workers from outside the region were employed for the project, the temporary nature of the work supports the conclusion that these workers would not typically change residences when assigned to a new construction site. Therefore, substantial permanent relocations of construction workers to the area are not anticipated. The project would not be expected to generate the need for substantial additional housing stock in Folsom, Sacramento County, or El Dorado County during construction. Because of these conditions, the temporary increase in population growth and housing demand associated with project construction is considered a **direct, less-than-significant** impact. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.13-2 Permanent Increase in Population Growth. *Project implementation would result in the development of new residential dwelling units, which would cause a direct long-term increase in population.*

On-Site Elements

NP

The No Project Alternative could develop up to 44 rural residences and generate approximately 128 new residents under the existing Sacramento County agricultural zoning classification AG-80, and no off-site water facilities would be constructed. Based on 2.92 persons per dwelling unit, these units could potentially generate 128 persons in Sacramento County over the proposed 19-year buildout period (2011–2030). These residents would not generate population growth that exceeds estimates for Sacramento County; therefore, the No Project Alternative would not result in unplanned population growth in the area. This impact is **direct** and **less than significant**. The **indirect** environmental impacts resulting from increase population growth are evaluated through Chapter 3 of this EIR/EIS. ***[Lesser]***

NCP

Implementation of the No USACE Permit Alternative would directly induce population growth in Sacramento County and the City of Folsom through construction of new homes and businesses over the 19-year buildout period (2011–2030). The No USACE Permit Alternative would develop 6,373 residential units. As shown in Table 3A.13-3 above, these residential units are estimated to generate 15,808 new residents by build out in 2030.

The current City (2002) and County (2008) General Plan Housing Elements do not include estimates of population from planned development beyond 2010 and 2025, respectively. The project-related estimated increases in population (15,808 new residents) could be potentially greater than the increases in population from the planned residential growth in the city or county. Therefore, development of the No USACE Permit Alternative could potentially generate population growth exceeding projections for Folsom and Sacramento County as a whole.

The 2035 projected population for the city (97,485) represents an increase of 32,179 persons from 2008 to 2035. Comparing the new residents expected to be generated by the No USACE Permit Alternative (15,808), the project-related estimated increase in population is within the increase in population that would result from the planned residential growth as projected by the City's Housing Element.

Because it cannot be determined whether the No USACE Permit Alternative would generate population growth that exceeds estimates for Sacramento County or the City of Folsom under their currently adopted General Plans,

this alternative could potentially result in unplanned population growth in the area. Population growth consistent with current population projections by itself is not considered a significant environmental impact. However, development of housing, infrastructure, and facilities and services to serve this growth can have significant environmental impacts through land conversions, commitment of resources, and other mechanisms. Because the No USACE Permit Alternative would generate 8,527 fewer residents than the Proposed Project Alternative, it is likely that direct impacts associated with development would be less. The **indirect** impacts associated with the development needed to accommodate increased population are evaluated in each resource area within Chapter 3 of this EIR/EIS. Because population growth is not, itself, considered a significant environmental impact, this **direct** impact is considered **less than significant**. ***[Lesser]***

Mitigation Measure: No mitigation measures are required.

PP

Implementation of the Proposed Project Alternative would directly induce population growth in Folsom through construction of new homes and businesses over the 19-year buildout period (2011–2030). The Proposed Project would develop 10,210 residential units. As shown in Table 3A.13-3 above, these residential units are estimated to generate 24,335 new residents at buildout (2030).

The current City (2002) and County (2008) General Plan Housing Elements do not include estimates of population from planned development beyond 2010 and 2025, respectively. The project-related estimated increases in population (26,850 new residents) could be potentially greater than the increases in population from the planned residential growth in the city or county. Therefore, development of the Proposed Project Alternative could potentially generate population growth exceeding projections for Folsom and Sacramento County as a whole.

The City has recently prepared an updated Housing Element (2009). The Housing Element projects the city would result in a total population of approximately 97,485 persons by 2035. As of January 1, 2008, the population of Folsom was estimated to be 65,306 (excluding the inmate population at Folsom Prison and California State Prison Sacramento) (DOF 2008). The 2035 projected population for the City (97,485) represents an increase of 32,179 persons from 2008 to 2035. Comparing the new residents expected to be generated by the Proposed Project Alternative (24,335), the project-related estimated increase in population is within the increase in population that would result from the planned residential growth as projected by the City's Housing Element.

Because it cannot be determined whether the Proposed Project Alternative would generate population growth that exceeds estimates for Folsom or Sacramento County under their currently adopted General Plans, the project could potentially result in unplanned population growth in the area. Population growth consistent with current population projections by itself is not considered a significant environmental impact. However, development of housing, infrastructure, and facilities and services to serve this growth can have significant environmental impacts through land conversions, commitment of resources, and other mechanisms. The **indirect** impacts associated with the development needed to accommodate increased population under the Proposed Project Alternative are evaluated in each resource area within Chapter 3 of this EIR/EIS. Because population growth is not, itself, considered a significant environmental impact, this **direct** impact is considered **less than significant**.

Mitigation Measure: No mitigation measures are required.

RIM

Implementation of the Resource Impact Minimization Alternative would directly induce population growth in Folsom through construction of new homes and businesses over the 19-year buildout period (2011–2030). The Resource Impact Minimization Alternative would develop 17,965 residential units. As shown in Table 3A.13-3 above, these residential units are estimated to generate 19,594 new residents by buildout in 2030.

The current City (2002) and County (2008) General Plan Housing Elements do not include estimates of population from planned development beyond 2010 and 2025, respectively. The project-related estimated increases in population (19,584 new residents) could be potentially greater than the increases in population from the planned residential growth in the city or county. Therefore, development of the Resource Impact Minimization Alternative could potentially generate population growth exceeding projections for Folsom and Sacramento County as a whole.

The 2035 projected population for the City (97,485) represents an increase of 24,985 persons from 2008 to 2035. Comparing the new residents expected to be generated by the Resource Impact Minimization Alternative (19,584), the project-related estimated increase in population is within the increase in population that would result from the planned residential growth as projected by the City's Housing Element.

Because it cannot be determined whether the Resource Impact Minimization Alternative would generate population growth that exceeds estimates for Folsom or Sacramento County under their currently adopted General Plans, this alternative could potentially result in unplanned population growth consistent with current population projections in the area. Population growth by itself is not considered a significant environmental impact. However, development of housing, infrastructure, and facilities and services to serve this growth can have significant environmental impacts through land conversions, commitment of resources, and other mechanisms. Because the Resource Impact Minimization Alternative would generate 4,751 fewer residents than the Proposed Project Alternative, it is likely that direct impacts associated with development would be less. The **indirect** impacts associated with the development needed to accommodate increased population are evaluated in each resource area within Chapter 3 of this EIR/EIS. Because population growth is not, itself, considered a significant environmental impact, this **direct** impact is considered **less than significant**. ***[Lesser]***

Mitigation Measure: No mitigation measures are required.

CD

Implementation of the Centralized Development Alternative would directly induce population growth in Sacramento County and the City of Folsom through construction of new homes and businesses over the 19-year buildout period (2011–2030). The Centralized Development Alternative would generate 9,026 residential units. As shown in Table 3A.13-3 above, these residential units are estimated to generate 20,689 new residents by buildout in 2030.

The current City (2002) and County (2008) General Plan Housing Elements do not include estimates of population from planned development beyond 2010 and 2025, respectively. The project-related estimated increases in population (20,689 new residents) could be potentially greater than the increases in population from the planned residential growth in the City or County. Therefore, development of the Centralized Development Alternative could potentially generate population growth exceeding projections for Folsom and Sacramento County as a whole.

The 2035 projected population for the City (97,485) represents an increase of 32,179 persons from 2008 to 2035. Comparing the new residents expected to be generated by the Centralized Development Alternative (20,689), the project-related estimated increase in population is within the increase in population that would result from the planned residential growth as projected by the City's Housing Element.

Because it cannot be determined whether the Centralized Development Alternative would generate population growth that exceeds estimates for Folsom or Sacramento County under their currently adopted General Plans, this alternative could potentially result in unplanned population growth in the area. Population growth consistent with current population projections by itself is not considered a significant environmental impact. However, development of housing, infrastructure, and facilities and services to serve this growth can have significant environmental impacts through land conversions, commitment of resources, and other mechanisms. Because the

Centralized Development Alternative would generate 3,646 fewer residents than the Proposed Project Alternative, it is likely that direct impacts associated with development would be less. The **indirect** impacts associated with the development needed to accommodate increased population are evaluated in each resource area within Chapter 3 of this EIR/EIS. Because population growth is not, itself, considered a significant environmental impact, this **direct** impact is considered **less than significant**. ***[Lesser]***

Mitigation Measure: No mitigation measures are required.

RHD

Implementation of the Reduced Hillside Development Alternative would directly induce population growth in Folsom through construction of new homes and businesses over the 19-year buildout period (2011–2030). The Reduced Hillside Development Alternative would develop 11,553 residential units. As shown in Table 3A.13-3 above, these residential units are estimated to generate 25,022 new residents by buildout in 2030.

The current City (2002) and County (2008) General Plan Housing Elements do not include estimates of population from planned development beyond 2010 and 2025, respectively. The project-related estimated increases in population (25,022 new residents) could be potentially greater than the increases in population from the planned residential growth in the City or County. Therefore, development of the Reduced Hillside Development Alternative could potentially generate population growth exceeding projections for Folsom and Sacramento County as a whole.

The 2035 projected population for the City (97,485) represents an increase of 32,179 persons from 2008 to 2035. Comparing the new residents expected to be generated by the Reduced Hillside Development Alternative (25,022), the project-related estimated increases in population exceed the population that would result from the planned residential growth as projected by the City's Housing Element.

Because it cannot be determined whether the Reduced Hillside Development Alternative would generate population growth that exceeds estimates for Folsom or Sacramento County under their currently adopted General Plans, this alternative could potentially result in unplanned population growth in the area. Population growth consistent with current population projections by itself is not necessarily considered a significant environmental impact. However, development of housing, infrastructure, and facilities and services to serve this growth can have significant environmental impacts through land conversions, commitment of resources, and other mechanisms. Because the Reduced Hillside Development Alternative would generate 687 more residents than the Proposed Project Alternative, it is likely that direct impacts associated with development would be greater but still remain **less than significant**. The **indirect** impacts associated with the development needed to accommodate increased population are evaluated in each resource area within Chapter 3 of this EIR/EIS. Because population growth is not, itself, considered a significant environmental impact, this **direct** impact is considered **less than significant**. ***[Greater]***

Mitigation Measure: No mitigation measures are required.

Off-Site Elements

Construction of U.S. 50 interchange improvements, the sewer force main, the detention basin, and the two roadway connections into El Dorado Hills would not involve construction of new housing or development of new long-term employment opportunities in Folsom, Sacramento County, or El Dorado County. Therefore, there would be no direct long-term increases in population in Folsom, Sacramento County, or El Dorado County from construction of these elements. **Indirect** impacts related to the potential that infrastructure improvements could induce additional long-term population growth are addressed in Chapter 4, "Other Statutory Requirements." Because there would be no direct impact related to long-term increases in population growth from off-site infrastructure, this impact is **direct** and **less than significant**. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.13-3 Displacement of Existing Housing or People Resulting from Project Development. *Project implementation would displace one existing residence located in the SPA.*

On-Site Elements

NP

The No Project Alternative could develop up to 44 rural residences and generate approximately 128 new residents under the existing Sacramento County agricultural zoning classification AG-80, and no off-site water facilities would be constructed. It is likely that the existing single-family residence located in the SPA would remain under the No Project Alternative. No development would occur under the No Project Alternative that would result in housing displacement; thus, **no direct** or **indirect** impacts would occur. ***[Lesser]***

NCP, PP, RIM, CD, RHD

There is one existing single-family residence located in the SPA. This residence would likely be removed as part of project development. Project implementation would result in the construction of low-, medium-, and high-density residential dwelling units in the SPA. Construction of these residential dwelling units in the SPA would fully replace the single unit removed during project construction. Because the project would not displace substantial numbers of existing housing or people, this impact is considered **direct** and **less than significant**. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

Off-Site Elements

There are no existing residences within the areas proposed for off-site U.S. 50 interchange improvements, the sewer force main, or the detention basin. There are existing residences in the vicinity of the two roadway connections into El Dorado Hills. However, those roadway connections were planned at the time that community was constructed, and no residences would be displaced. Therefore, construction of these elements would not result in housing displacement and **no direct** or **indirect** impacts would occur. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

3A.13.4 Residual Significant Impacts

Impacts associated with population growth and housing demand are considered less than significant. Therefore, there would be no residual significant impacts.

3A.14 PUBLIC SERVICES - LAND

3A.14.1 AFFECTED ENVIRONMENT

FIRE PROTECTION SERVICES

Sacramento Metropolitan Fire District

The Sacramento Metropolitan Fire District (SMFD) currently provides fire protection services to approximately 3,406 acres of the SPA. SMFD offers fire protection, fire suppression, inspection, plan checking, emergency transportation and medical services, public education, advanced life support, and rescue services to the unincorporated portions of Sacramento County. SMFD was formed in 2000 by consolidation of the American River Fire District and the Sacramento County Fire Protection District. As the largest fire district in Sacramento County, SMFD currently operates 42 stations and provides service through 750 uniformed and support personnel to nearly 600,000 people in a 417-square-mile area. SMFD operates 10 transporting Advanced Life Support medics, 7 reserve transporting medics, 38 engine companies, 5 truck companies, 24 grass engines, 2 crash rescue rigs, 6 water tenders, 4 swift water rescue bikes, 5 swift water rescue inflatable rubber boats, 5 air units, three reserve firefighter engine companies, and 2 reserve firefighter grass engines (SMFD 2009). Many of SMFD's engines are paramedic staffed and all responding units provide coverage by emergency medical technicians. SMFD's personnel are trained and equipped to deal not only with emergency medical alarms and structural or wildland fires, but also with swift water emergencies, confined space incidents, technical rescues, hazardous materials incidents, and crash fire rescue. In 2004, SMFD responded to more than 60,000 alarms, providing a response time of six minutes or less greater than 90% of the time (SMFD 2007). The nearest SMFD facility to the SPA is Station 63 located at 12395 Folsom Boulevard, approximately 5.1 miles west of the SPA via Prairie City Road and U.S. Highway 50 (U.S. 50).

City of Folsom Fire Department

Upon annexation of the SPA, fire protection services within the SMFD service area would become the responsibility of the City of Folsom Fire Department. The department has 74 employees that provide fire protection and emergency medical services to approximately 65,000 people in a 24-square-mile area (City of Folsom Fire Department 2009a). Fire fighting personnel are typically assigned on a three-shift work schedule, which provides the city with coverage 24 hours a day, 7 days a week. The department maintains four fire stations within the City:

- Station 35—535 Glenn Drive
- Station 36—9700 Oak Avenue Parkway
- Station 37—70 Clarksville Road
- Station 38—1300 Blue Ravine Road

The department is equipped with one 65-foot aerial ladder truck, three Type III grass engines, two transporting ambulances, an air support unit, an OES engine, a hazmat decon trailer, an inflatable rescue boat, a Community Emergency Response Team support trailer, and staff vehicles (Haverty, pers. comm., 2009). Currently the department provides paramedic/advanced life support services from all four stations using cross-trained firefighter/paramedics. The department participates in a countywide resource deployment plan that ensures the closest available emergency crew responds to the scene of emergencies, regardless of geographic boundaries. The department responds to over 5,400 requests for service annually, an average of 14.8 per day. The City of Folsom currently requires 1.6 fire staff per 1,000 residents.

The Insurance Services Office (ISO) rating is the recognized classification for a fire department or district's ability to defend against major fires. According to the ISO, newly developing urban areas should have a fire station opened within 1.5 miles of all commercial development and 2.5 miles from all residential development when

"build-out" exceeds 20% of the planning area. A rating of 10 generally indicates no protection, whereas an ISO rating of 1 indicates high firefighting capability. The department's ISO rating is currently a class 3.

First-response service to the SPA would be provided by Station 37 at 70 Clarksville Road, approximately 1.6 miles north of the SPA via Scott Road. Station 37 is staffed with five fire fighting personnel (Haverty, pers. comm., 2009).

The City of Folsom Fire Department, in cooperation with the City of Folsom Parks and Recreation Department, is constructing the new Station 39 to serve the northern and eastern portions of the City and some portions of El Dorado Hills. The station is located at Empire Ranch Road and Ritchie Street and is being planned as a three-phased project. The 10,500-square-foot facility will house a three-person engine company able to respond with a structural engine, wildland engine, and reserve ambulance (City of Folsom 2009b). This station would close a response performance gap currently being served primarily by crews from Fire Stations 37 and 38. Station 39 is planned to be operational in 2010 (Haverty, pers. comm., 2009).

El Dorado Hills Fire Department

The El Dorado Hills Fire Department (EDHFD) serves approximately 178 acres of the northeastern portion of the SPA as a multi-jurisdictional district. The EDHFD has 66 paid employees and 38 volunteers that provide fire protection and emergency medical services 24 hours a day, 7 days a week (EDHFD 2009). The department maintains four fire stations:

- Station 84—2180 Francisco Drive
- Station 85—1050 Wilson Boulevard
- Station 86—3670 Bass Lake Road
- Station 87—4680 Golden Foothill Parkway

The EDHFD is equipped with ten engines, one air/light support unit, one water tender, three medic units and one Quint (ladder truck) (EDHFD 2009). Currently the EDHFD provides emergency medical/advanced life support; residential, commercial, and wildland fire suppression; hazardous materials safety; fire prevention code enforcement; public education; and community services. The ISO rating for the EDHFD is currently a Class 3 in areas within five miles of a fire station, Class 8 in areas within five miles of a fire station but more than 1,000 feet from a fire hydrant, and Class 10 in areas more than five miles from a fire station (El Dorado County Fire Prevention Officers 2009). In 2008, the EDHFD responded to over 2,500 requests for service (EDHFD 2008). The EDHFD serves approximately 42,000 people, which would result in a ratio of 2.1 fire staff per 1,000 residents.

First-response service to the SPA within the EDHFD would be provided by Station 85 at 1050 Wilson Boulevard, approximately 1.2 miles northeast of the SPA via Latrobe Road in the unincorporated portion of El Dorado County.

LAW ENFORCEMENT

Law enforcement services for the SPA are currently provided by the Sacramento County Sheriff's Department North Division. The North Division provides patrol and investigative services to the communities of Carmichael, Fair Oaks, Foothill Farms, Orangevale, and other unincorporated areas of Sacramento County (County). The division is staffed by over 100 sworn officers and 19 support staff. The patrol officers and detectives serving these areas work out of the Garfield Station at 5510 Garfield Avenue, approximately 16.6 miles southwest of the SPA. The North Division also maintains the Fair Oaks/Orangevale Community Service Center located at 8525 Madison Avenue, approximately 8.8 miles northwest of the SPA. It is staffed with a Sergeant, Problem-Oriented Policing Officers, a Crime Prevention Specialist, an office manager, and a staff of volunteers. This center assists the community through the organization and presentation of community meetings, helping to establish Business and

Neighborhood Watch programs, taking reports, and providing public assistance and information at the front counter (Sacramento County Sheriff's Department 2009).

Upon annexation of the SPA, law enforcement services would become the responsibility of the City of Folsom Police Department. The department has 125 employees including officers and support staff (City of Folsom Police Department 2009). The police station is located at 49 Natoma Street, approximately 5 miles northeast of the SPA via Prairie City Road. The City of Folsom currently requires 1.3 police officers per 1,000 residents.

The City of Folsom's Field Operations Division is staffed with 68 personnel and is the largest division within the police department. It is comprised of the Patrol Bureau, Traffic Bureau, Mounted Unit, K-9 Unit, School Resource Officers, Crime Scene Investigation Unit, and Special Weapons and Tactic Team. The primary functions of the Field Operations Division are to provide prompt response to community requests for police assistance and to implement proactive measures that reduce and prevent criminal activity through comprehensive community policing.

One important measurement of service delivery is response time to emergency calls-for-service. The Police Department Service Delivery Plan calls for emergency call response within five minutes or less for Priority One calls. A Priority One call is a violent crime against a person or an emergency requiring an immediate response to save a life. In 2006, the response time for the first unit on the scene was approximately seven minutes and the response time for a second unit was nine minutes. In general, response times for the first unit increased by three seconds, while the second unit response time decreased by 28 seconds. Overall, response times have decreased but remain higher than the department's goal of five minutes or less for two officers responding to priority calls for service (City of Folsom Police Department 2006).

Any traffic complaints, concerns, or collisions occurring outside of the Folsom City boundaries and within the unincorporated area of Sacramento County are handled by the California Highway Patrol (CHP). CHP is responsible for providing patrols on all interstate freeways and highways in California. CHP has numerous offices throughout California and can be contacted directly to report accidents, hazards, and other traffic related inquiries. The SPA is located within the Valley Division, which oversees Interstate 80, Interstate 5, U.S. 50, and State Route 99. The Valley Division includes 16 area offices, three resident posts, one commercial inspection facility, one transportation management center, three communications/dispatch centers and is staffed with 785 uniformed officers and 250 non-uniformed personnel (CHP 2008).

PUBLIC SCHOOLS

The SPA is located in the Folsom Cordova Unified School District (FCUSD). Located in eastern Sacramento County, the district covers 95 square miles. The FCUSD boundaries encompass the City of Folsom, portions of the City of Rancho Cordova, and portions of the unincorporated areas of Sacramento County (FCUSD 2008b:A-1). FCUSD currently operates 21 elementary schools, 4 middle schools, 3 comprehensive high schools, 2 continuation high schools, and 4 adult and alternative education centers (FCUSD 2008b:A-1). FCUSD had a 2008–2009 school year enrollment of 19,119 students and the current school capacity is 19,932 students (Education Data Partnership 2009a, FCUSD 2008b:A-1). The district expects to reach 21,561 students by the 2012–1013 school year (FCUSD 2008a:14).

The FCUSD has experienced considerable growth in the past few years that has affected the ability to provide adequate educational facilities. A new elementary school, Navigator Elementary, was opened in August 2006 in the Rancho Cordova portion of the district and a second elementary school, Russell Ranch Elementary, was opened in August 2007 in Folsom. A new high school, Vista del Lago High, was opened in August 2007 in Folsom to relieve crowding at Folsom High School (FCUSD 2008b:A-1).

As shown on the FCUSD school attendance boundaries map, students living in the SPA would attend Russell Ranch Elementary School, Folsom Middle School, and Vista del Lago High School. Table 3A.14-1 identifies the 2007–2008 school-year enrollments for these schools.

Table 3A.14-1
Folsom Cordova Unified School District Enrollment, 2008–2009

School Name	Grade	Current Enrollment	State Standard Capacity	Estimated Remaining Capacity
Russell Ranch Elementary School	K–5	428	529	101
Folsom Middle School	6–8	1,248	1,220	-28
Vista del Lago High School [1]	9–12	955	1,497	542

Note: Student enrollment in the district changes daily as more students enroll and others leave; therefore, Table 3A.14-1 does not necessarily reflect exact current enrollment.

[1] For the 2008–2009 school year, the Vista del Lago High School is open to freshman, sophomores, and juniors.

Source: California Department of Education 2009, FCUSD 2008b

Russell Ranch Elementary School located at 375 Dry Creek Road, approximately 5.7 miles northeast of the SPA, is the newest elementary school in the FCUSD and currently serves elementary school students in grades K–5. The buildings were completed and occupied in August 2007, and include 25 permanent classrooms, a library, a multipurpose room, an administrative building, and one permanent portable to house the Student Care Program. (FCUSD 2008b:B-22.)

Folsom Middle School is located at 500 Blue Ravine Road, approximately 4.5 miles north of the SPA, and serves students in grades 6-8. Folsom Middle School includes 34 classrooms, library, multipurpose room, gymnasium, and an administrative building. (FCUSD 2008b:B-28.)

Vista del Lago High School is located at 1655 Iron Point Road, approximately 2.0 miles north of the SPA. The high school serves students in grades 9–12. The first phase of construction opened for the 2007–2008 school year serving freshmen and sophomores. The second phase of construction, along with the joint use library, opened for the 2008–2009 school year and Vista del Lago High School currently serves freshman, sophomores, and juniors. When completed, the campus will include an administration building, gymnasium, learning resource center, multipurpose building, joint use library, 56 permanent classrooms, and temporary relocatable classrooms. (FCUSD 2008b:B-41.)

School Facilities Improvement District 3—South of U.S. Highway 50/East of Sunrise Boulevard

FCUSD has planned for development of the SPA in its *Folsom Cordova Unified School District Revised Facility Needs Assessment* (2008a) and *FCUSD Facility Master Plan* (2008b). The SPA is within the School Facilities Improvement District (SFID) 3, which encompasses portions of Rancho Cordova and Folsom in the area south of U.S. 50, east of Sunrise Boulevard, north of Douglas Road, and east to the El Dorado County line. Within this area, planning has begun for large-scale residential developments, including the Proposed Project, Rio del Oro, Westborough, Easton, Glenborough, and North Douglas.

Based on information from the City of Folsom Planning Department, the City of Rancho Cordova Planning Department, the Sacramento County Planning Department, and local developers, it is estimated that SFID 3 will eventually contain over 32,327 new residential units: 20,603 single-family units, 6,073 multifamily medium-density units, and 6,154 high density multifamily units (FCUSD 2008b:E-5). These residential developments are expected to generate 18,005 new students and require development of 16 elementary schools, 4 middle schools, and 2 high schools over the next 25 years (FCUSD 2008b:D-18). Of this total, the FCUSD estimates that

development of the Proposed Project Alternative would generate 5,823 students and require five elementary schools, one middle school, and one high school over the next 17 years (FCUSD 2008b:D-17).

FCUSD prepared an updated facility master plan in October 2008 for the SFID 3 area to provide updated enrollment, capacity, student generation rates, and expected buildout totals anticipated to be generated by new residential development. A student-yield generation rate study was conducted as part of the master planning process. The yield-rate study included a survey of new (built within the last 1–5 years) single-family and multi-family residential units. The current student-yield generation rates for SFID 3, which is used in this analysis to calculate the estimated number of students generated by the Proposed Project and alternatives under consideration, are provided in Table 3A.14-2, below.

Table 3A.14-2
Student-Yield Generation Rates for the Folsom Cordova Unified School District

Grade Level	Single Family (Students per Dwelling Unit)	Multifamily Medium Density (Students per Dwelling Unit)	Multifamily (Students per Dwelling Unit)
Elementary (K–5)	0.42	0.20	0.07
Middle (6–8)	0.14	0.08	0.04
High (9–12)	0.16	0.07	0.04
Special Day Classrooms (K–12) [1]	0.01	0.01	0.01
Total	**0.72**	**0.36**	**0.16**

Notes:
[1] Special education students were evenly weighted by grade group and included in the corresponding grade group for the calculation of the number of schools required.
Source: FCUSD 2008b:D-16

The FCUSD is funded by 50% state and 50% local sources. The district can receive local funding through developer impact fees, tax revenue from Mello-Roos districts, and General Obligation (GO) bonds. Developer impact fees are the major source of funding for the district. Based on its facility needs assessment, FCUSD demonstrated the need to levy Level II developer fees (described below in Section 3A.14.2, "Regulatory Framework") in the SFID 3 that are higher than the statutory fee. As of August 2008, Level II fees for residential development are $6.99 per square foot and $0.47 per square foot for commercial/industrial construction (FCUSD 2008a:22, 2009). Developer fees may be used to finance new schools and equipment, and to reconstruct existing facilities to maintain adequate housing for all the district's students. Mello-Roos districts are defined tax areas usually associated with new residential subdivisions, which are often used for additional school taxes.

In April 2007, voters passed Measure M, a $750 million school-facilities GO bond. Measure M will fund the construction of elementary, middle, and high school facilities, a district education services center, and maintenance facilities. The FCUSD is currently in the master planning stage for Rio del Oro Elementary #1 and in the schematic design phase for Mather High/Morrison Creek Middle Schools. The estimated completion date for the elementary and high/middle school is currently 2015. The District has preliminary site approval for both sites from the California Department of Education (CDE). (FCUSD 2008b:D-14.)

Measure W, passed by Folsom voters in 2004, amended the Folsom City Charter to require the funding and construction of all necessary school facilities in the SPA by new development so that Folsom residents north of U.S. 50 are not required to pay for the construction of new school facilities serving the SPA and existing schools are not overcrowded by development of the Proposed Project Alternative.

3A.14.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

There are no Federal plans, policies, regulations, or laws related to public services that apply to the Proposed Project or alternatives under consideration.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

California Occupational Safety and Health Administration

In accordance with California Code of Regulations Title 8 Sections 1270 "Fire Prevention" and 6773 "Fire Protection and Fire Equipment," the California Occupational Safety and Health Administration has established minimum standards for fire suppression and emergency medical services. The standards include, but are not limited to, guidelines on the handling of highly combustible materials; fire hose sizing requirements; restrictions on the use of compressed air; access roads; and the testing, maintenance, and use of all fire fighting and emergency medical equipment.

Fire Codes and Guidelines

The California Fire Code contains regulations relating to construction, maintenance, and use of buildings. Topics addressed in the code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other general and specialized fire-safety requirements for new and existing buildings and the surrounding premises. The California Fire Code contains specialized technical regulations related to fire and life safety.

All development projects in Folsom are required to meet various other fire protection requirements identified in the Folsom Fire Code (City of Folsom Municipal Code Title 8, Chapter 8.36). The fire code requires that automatic fire sprinklers be installed in all new commercial construction that exceeds 3,600 square feet and some residential properties exceeding 4,999 square feet. The fire code outlines the number and distribution of fire hydrants and minimum fire-flow requirements for structures exceeding 3,600 square feet. The City of Folsom Fire Department requirements are determined for specific development projects at the design stage.

An important requirement for fire suppression is adequate fire flow, which is the amount of water, expressed in gallons per minute (gpm), available to control a given fire and the length of time that this flow is available. The availability of sufficient water flows and pressure is a basic requirement of the California Building Code. The total fire flow needed to extinguish a structural fire is based on a variety of factors, including building design, internal square footage, construction materials, dominant use, height, number of floors, and distance to adjacent buildings. Minimum requirements for available water flow at a given building are dependent on standards set in the California Fire Code.

State School Funding

California Education Code Section 17620 authorizes school districts to levy a fee, charge, dedication, or other requirement against any development project for the construction or reconstruction of school facilities, provided that the district can show justification for levying the fees. California Government Code Section 65995 limits the fee to be collected to the statutory fee unless a school district conducts a Facility Needs Assessment (Government Code Section 65995.6) and meets certain conditions.

Senate Bill 50 (Chapter 407, Statutes of 1998) instituted a new school facility program by which school districts can apply for state construction and modernization funds. This legislation limits the power of cities and counties

to require developers to mitigate impacts on school facilities as a condition of approving new development. This legislation also provides the authority for school districts to levy fees at three different levels:

- Level I fees are the current statutory fees allowed under Education Code Section 17620. As mentioned above, this code section authorizes school districts to levy a fee against residential and commercial developers to fund school construction or reconstruction. These fees are adjusted in January every 2 years in accordance with the statewide cost index for Class B construction as determined by the State Allocation Board.

- Level II developer fees are outlined in California Government Code Section 65995.5. This code section allows a school district to impose a higher fee on residential construction if certain conditions are met. These conditions include having a substantial percentage of students on multitrack year-round scheduling, having an assumed debt equal to 15–30% of the district's bonding capacity (the percentage is based on revenue sources for repayment), having at least 20% of the district's teaching stations housed in relocatable classrooms, and having placed (within the last 4 years) a local bond measure on the ballot that received at least 50% plus one of the votes cast. A Facility Needs Assessment must demonstrate that the need for new school facilities for unhoused pupils is attributable to projected enrollment growth from the construction of new residential units over the next five years. As of August 2008, Level II fees are $6.99 per square foot for residential development and $0.47 per square foot for commercial/industrial construction (FCUSD 2009).

- Level III developer fees are outlined in California Government Code Section 655995.7. This code section authorizes a school district that has been approved to collect Level II fees to collect a higher fee on residential construction if state funding becomes unavailable. This fee is equal to twice the amount of Level II fees. However, if a district eventually receives state funding, this excess fee may be reimbursed to the developers or subtracted from the amount of state funding.

California Department of Education

The CDE School Facilities Planning Division (SFPD) has prepared the *School Site Analysis and Development*. This guide was changed by CDE in 2000 to reflect various changes in educational conditions, such as lowering of class sizes and use of advanced technology. The guide provides specific recommendations for school size and school site selection criteria for locating appropriate school sites in the State of California. This document suggests a ratio of 1:2 between buildings and land. CDE is aware that in a number of cases, primarily in urban settings, smaller sites cannot accommodate this ratio. In such cases, SFPD may approve an amount of acreage less than the recommended gross site size and building-to-grounds ratio. The expanded use of school buildings and grounds for community and agency joint use also influenced the modification of the CDE recommendations, as did concern for the safety of students and staff members.

Certain health and safety requirements for school site selection are governed by state regulations and SFPD policies. These requirements are outlined in the *School Site Selection and Approval Guide* and relate to:

- proximity to airports, high-voltage power transmission lines, railroads, and major roadways;

- presence of toxic and hazardous substances;

- hazardous facilities and hazardous air emissions within one-quarter mile;

- proximity to high-pressure natural-gas lines, propane storage facilities, gasoline lines, pressurized sewer lines, or high-pressure water pipelines;

- noise;

- results of geological studies or soil analyses;

- traffic and school bus safety; and
- safety issues related to joint-use facilities.

The public services analysis for this EIR/EIS is being conducted at a programmatic level only. Therefore, an analysis of conformity of the proposed school sites with the CDE School Siting Criteria is not part of this program-level analysis and would be the subject of further, separate project-level environmental review.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

Sacramento County General Plan

There are no goals and policies of the Sacramento County General Plan (1993) that are applicable to the Proposed Project or alternatives under consideration.

El Dorado County General Plan

There are no goals and policies of the El Dorado County General Plan (2004) that are applicable to the Proposed Project or alternatives under consideration.

City of Folsom General Plan

The following goals and policies of the City of Folsom General Plan (1988) are applicable to the Proposed Project and the other four action alternatives. There are no City of Folsom goals and policies that are applicable to the No Project Alternative.

Land Use Element

GOAL 16: To allow for public and quasi-public land uses meeting the governmental service, education, cultural, recreational, and religious needs of Folsom residents.

- **Policy 16.1:** Fire and police department substations shall be planned and located so that a maximum response time goals as set by the City Council can be maintained.

Safety Element

GOAL 29: To protect lives and property from unacceptable risks resulting from natural and manmade hazards.

- **Policy 29.1:** Fire and police department personnel/resident population ratios shall be maintained at adequate levels as defined by the City Council.

Public Facilities Element

GOAL 40: To set targets for ultimate build-out of the City, to plan for the provision of public facilities and services to meet this level of development, and to phase development according to the capacity of public facilities and services to meet those targets.

- **Policy 40.1:** No permit for construction shall be issued for any new development not served by existing municipal facilities until the following conditions have been met:

    1. The applicant can provide for the installation and/or financing (through fees or other means) of needed public facilities.

    2. The project is included in the area covered by an existing facilities plan approved by the City.

3. The project can be served by on-site or private facilities meeting City and County health and safety requirements.

- **Policy 40.2:** The City shall require the preparation of a facilities plan for an identified area when:

1. Development of an area necessitates the provision, extension, and/or expansion of municipal services and facilities which are not customarily constructed by a developer, or

2. There is a need for services or facilities not otherwise funded by regular City fees, or

3. The construction of the necessary services and facilities cannot be logically or economically provided by one landowner/development in the normal sequence of orderly development.

- **Policy 40.3:** An area facilities plan shall include, but not be limited to the following:

1. Description of the plan area, the basis for the selection of the proposed boundaries, and the development potential of the area which is based on a comprehensive land use map.

2. A statement of the plan's consistency with the Folsom General plan and the City's Urban Development Policy.

3. Identification of the nature and extent of facilities necessary to serve the area and a schedule of estimated time within which facilities must be constructed.

4. Engineer's estimate of the total cost of such improvements (including plan preparation).

5. A plan for the equitable apportionment of costs among benefited properties and adjustments thereof based on the time such costs are paid.

6. The nature of the obligation of each land-owner or developer.

7. Discussion of the options available to finance the improvements including, but not limited to, construction by developers.

8. Provisions for amendments to the plan which may result from changes in the plan area, development patterns, etc.

9. Provisions to refund or reimburse landowners who construct facilities with capacity beyond the ultimate need of their developments.

10. A statement which recognizes that the financial commitments required pursuant to such plans are not in lieu of other municipal service and facilities fees. The financial commitments of landowners/developers shall be taken into account by the City in determining the extent of the imposition of such other municipal service and facilities fees.

11. A statement which recognizes that the area facilities plan is not intended to be responsible for the provision of all possible public facilities that will be needed in the future and that there are or may be additional costs/fees established by the City and other jurisdictions (such a school district) that may apply to the area. However, the plan must address the need for public facilities which may reasonably be assumed to be necessary during buildout of the area.

12. Provisions for administration of the area plan and the collection and distribution of funds.

3A.14.3 Environmental Consequences and Mitigation Measures

Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. These thresholds also encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. The Proposed Project or alternatives under consideration were determined to result in a significant impact related to public services if they would do any of the following:

- create a need for the development of new service facilities (e.g., fire, police, schools, and other public facilities, the construction of which could result in significant environmental impacts;
- create circumstances where existing services and facilities could not meet established performance standards (i.e., response times, provider-per-resident ratios); or
- substantially impede existing services.

Analysis Methodology

Impacts on fire services, police services, and public schools that would result from project implementation were identified by comparing existing service capacity and facilities against future demand associated with project implementation. Evaluation of potential public-services impacts was based on a review of documents pertaining to the SPA and vicinity, including the City of Folsom General Plan (1988), the *Folsom Cordova Unified School District Revised Facility Needs Assessment* (2008a), and the *FCUSD Facility Master Plan* (2008b). Additional background information on current services, staffing, and equipment was obtained through consultation with appropriate agencies, including the City of Folsom Fire Department and FCUSD.

The project proposes to construct three fire stations, one police service center, five elementary schools, and one combined middle school and high school at different locations within the SPA. The number of new firefighters and police officers were calculated based the population projections for the project alternatives and the City's ratio of 1.6 fire personnel to 1,000 residents and 1.3 police officers per 1,000 residents. Table 3A.14-3 shows the number of new firefighters and police officers that would be required to serve the project under each action alternative. The No Project Alternative would not require new firefighters or police officers because the 44 rural residences would be served by existing firefighting/law enforcement capacity within Sacramento County.

Table 3A.14-3
Folsom South of U.S. 50 Specific Plan Firefighter and Police Officer Projections

Action Alternative	Number of Required Firefighters[1]	Number of Required Police Officers[2]
Proposed Project	39	32
Resource Impact Minimization	31	25
Centralized Development	33	27
Reduced Hillside Development	40	33
No USACE Permit	25	21

Notes:
[1] The number of required firefighters is based on the population projected for each action alternative and the City of Folsom Fire Department's ratio of 1.6 firefights per 1,000 residents.
[2] The number of required police officers is on the population projected for each action alternative and the City of Folsom Police Department's ratio of 1.3 police officers per 1,000 residents.
Source: Data compiled by AECOM in 2010

The number of new elementary, middle, and high school students were calculated based on the student-yield generation rates shown in Table 3A.14-2. Special education students are calculated by the FCUSD using an evenly weighted student-yield generation factor regardless of grade level and dwelling unit type. These students are considered to be evenly distributed throughout all grades levels (K-12). It can not be determined how these students would be ultimately distributed by grade level and it is assumed that the proposed project and action alternatives would generate slightly more students than analyzed below. However, special education students have been considered in the number of schools required to serve the proposed project and action alternatives. The number of new students generated under each action alternative is summarized below in Table 3A.14-4. The up to 44 rural residences that could be constructed under the No Project Alternative would not generate substantial new students.

Table 3A.14-4
Folsom South of U.S. 50 Specific Plan Elementary, Middle, and High School Student Projections

Action Alternative	Number of Elementary School Students[1]	Number of Middle School Students[2]	Number of High School Students[3]	Number of Special Education Students (K-12) [4, 5]	Total Number of Students (K-12) [6]
Proposed Project	2,807	1,017	1,073	102	4,999
Resource Impact Minimization	2,996	866	919	80	3,076
Centralized Development	2,363	864	889	90	2,453
Reduced Hillside Development	2,556	1,480	972	116	2,672
No USACE Permit	2,005	710	756	64	2,069

Notes:

[1] The number of elementary school students was calculated based on the sum of the dwelling units under the Single Family and Single Family High Density land use designation multiplied by the FCUSD's student-yield generation rate shown in Table 3A.14-2.

[2] The number of middle school students was calculated based on the sum of the dwelling units under the Multi-Family Low Density and Multi-Family Medium Density land use designations multiplied by the FCUSD's student-yield generation rate shown in Table 3A.14-2.

[3] The number of high school students was calculated based on the sum of the dwelling units under the Multi-Family High Density and Mixed-Use land use designations multiplied by the FCUSD's student-yield generation rate shown in Table 3A.14-2.

[4] The number of special education students was calculated based on the total number of dwelling units multiplied by the FCUSD's student-yield generation rate shown in Table 3A.14-2.

[5] Special education students were evenly weighted by grade group and included in the corresponding grade group for the calculation of the number of schools required.

[6] It can not be determined how these special education students would be ultimately distributed by grade level. However, the total number of special education students has been considered in the number of schools required to serve the proposed project and action alternatives.

Source: Data compiled by AECOM in 2010

It is anticipated that the provision of all new or physically altered public service facilities intended to meet the increased demand for public services would occur on site. Because public facilities would be constructed as part of the Proposed Project Alternative and would be confined to the SPA, this EIR/EIS already anticipates and addresses the physical environmental impacts associated with construction and operation of these facilities (along with development of the project in general) in other sections of the EIR/EIS (e.g., Section 3A.4, "Air Quality - Land," Section 3A.4, "Biological Resources - Land"). Therefore, these indirect, physical impacts are not addressed in this section.

The Sacramento Country Day School had originally proposed construction of a new campus on an approximately 80-acre property in the southeast portion of the SPA along White Rock Road. The Sacramento Country Day

School would be privately owned and would serve pre-kindergarten through grade 12 students throughout Sacramento County. Because the Sacramento Country Day School would be a privately owned facility, it would not be subject to the CDE school facilities planning criteria and would not be required to pay state-mandated school impact fees. Recently, the Sacramento Country Day School withdrew its application to construct a campus in the SPA. For purposes of this EIR/EIS, some type of school facility would still be constructed on this site; however, because it not known what type of facility (public or private) or how many students could be accommodated, it not possible to perform any analysis related to school facilities on this property.

IMPACT ANALYSIS

Impacts that would occur under each alternative development scenario are identified as follows: NP (No Project), NCP (No USACE Permit), PP (Proposed Project/Action), RIM (Resource Impact Minimization), CD (Centralized Development), and RHD (Reduced Hillside Development) (for information on project phasing, please refer to Section 2.3.1 in Chapter 2, "Alternatives"). The impacts for each alternative are compared relative to the PP at the end of each impact conclusion (i.e., similar, greater, lesser).

IMPACT 3A.14-1 Temporary Reduction in Emergency Response Services during Construction. *Project implementation could obstruct roadways in the project vicinity during construction, potentially obstructing or slowing emergency vehicles attempting to access the area.*

On-Site and Off-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could be constructed under the existing Sacramento County agricultural zoning classification AG-80, and no off-site water facilities would be constructed. All or a portion of these dwelling units could be constructed by individual property owners over the project's 19-year buildout period (2011–2030). Development of individual dwelling units would require minimal, temporary, short-term construction activities; therefore, roadways would not be obstructed and emergency response times would be unaffected during construction under the No Project Alternative. This impact would be **direct** and **less than significant**. **No indirect** impacts would occur. ***[Lesser]***

NCP, PP, RIM, CD, RHD,

Implementation of the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Density Alternatives would include construction activities of varying levels over a 19-year period (approximately 2011 through 2030). Most of the project-related construction activities would occur on site; however, the project involves a variety of off-site U.S. 50 interchange improvements and construction of the sewer force main and detention basin in Sacramento County and two roadway connections in El Dorado County. Nearby roadways in the vicinity of the SPA and off-site areas, such as White Rock Road, Prairie City Road, and U.S. 50, would likely be affected intermittently during construction activities (see Section 3A.15, "Traffic and Transportation - Land"). Ongoing construction activities could result in temporary lane closures, increased truck traffic, and other roadway effects that could slow or stop emergency vehicles, temporarily increasing response times and impeding existing services. Potential reduction of emergency response services during construction would be a **direct, significant** impact. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure 3A.14-1: Prepare and Implement a Construction Traffic Control Plan.

The project applicant(s) of all project phases shall prepare and implement traffic control plans for construction activities that may affect road rights-of-way. The traffic control plans must follow any applicable standards of the agency responsible for the affected roadway and must be approved and signed

by a professional engineer. Measures typically used in traffic control plans include advertising of planned lane closures, warning signage, a flagperson to direct traffic flows when needed, and methods to ensure continued access by emergency vehicles. During project construction, access to existing land uses shall be maintained at all times, with detours used as necessary during road closures. Traffic control plans shall be submitted to the appropriate City or County department or the California Department of Transportation (Caltrans) for review and approval before the approval of all project plans or permits, for all project phases where implementation may cause impacts on traffic.

Mitigation for the off-site elements outside of the City of Folsom's jurisdictional boundaries must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies) (i.e., El Dorado and/or Sacramento Counties and Caltrans).

Implementation: Project applicant(s) of all project phases.

Timing: Before the approval of all relevant plans and/or permits and during construction of all project phases.

Enforcement:

1. For those roadways that would be annexed into the City of Folsom: City of Folsom Public Works Department.
2. For those roadways that would remain under the control of Sacramento County: Sacramento County Department of Transportation.
3. For the two off-site roadway connections into El Dorado Hills: El Dorado County Department of Transportation.
4. For U.S. 50 interchange improvements: Caltrans.

Implementation of Mitigation Measure 3A.14-1 would reduce significant impacts associated with decreased emergency response times during construction under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives to a **less-than-significant** level by requiring preparation and implementation of a construction traffic control plan that would provide for adequate emergency access during construction activities. However, some of the off-site elements (two roadway connections in El Dorado County, detention basin in Sacramento County, and off-site interchange improvements on U.S. 50) fall under the jurisdiction of El Dorado and Sacramento Counties and Caltrans; therefore, neither the City nor the project applicant(s) would have control over their timing or implementation. The impacts could be reduced to a less-than-significant level if El Dorado and Sacramento Counties and Caltrans cooperate in implementing the mitigation.

IMPACT 3A.14-2 Increased Demand for Fire Protection Facilities, Systems, Equipment, and Services. *Project development would result in increased demand for fire protection facilities and services, potentially resulting in the need for additional staff and equipment to maintain an adequate level of service.*

On-Site Elements

NP

The No Project Alternative could develop of up to 44 rural residences and generate approximately 128 new residents under the existing Sacramento County agricultural zoning classification AG-80, and no off-site water facilities would be constructed. Increased demands for fire protection services would be minimal under the No Project Alternative and new residential units would not require additional fire protection services beyond what is

currently available. Therefore, impacts on fire protection facilities and services would be **direct** and **less than significant**. **No indirect** impacts would occur. ***[Lesser]***

NCP

Under the No USACE Permit Alternative, the estimated residential population at project buildout would be 15,808 persons. To maintain adequate levels of service, additional fire personnel, facilities, and equipment would be required to serve project development at buildout. Using the City's ratio of 1.6 fire personnel to 1,000 residents, a minimum of 25 new firefighters would be needed to serve project development at buildout. This would be approximately 14 fewer new firefighters than would be required under the Proposed Project Alternative.

The No USACE Permit Alternative would include construction of fire stations to serve the SPA. The location, number of personnel, and equipment required at new fire stations has not been determined. Final size and location of the fire station sites would be determined on completion of response time analysis studies and through coordination with the City of Folsom Fire Department.

Per the City of Folsom Municipal Code Chapter 3, Title 3.80, "Capital Improvement New Construction Fee," new development is responsible for the full cost of additional facilities and equipment necessary as a result of that development through payment of the City's capital improvement new construction fees. This fee is used exclusively for construction of new fire and police stations and associated apparatus as required by new development. In addition, new development within the EDHFD service area would be required to pay $1.16 per square foot of residential and commercial development, which is used exclusively for construction of new fire stations and associated apparatus.

Because the City of Folsom Fire Department and EDHFD outlines fire prevention standards to be incorporated into new residential and commercial development and these standards require approval by the City of Folsom Fire Department, the City of Folsom Community Department, and EDHFD for those areas of the SPA within the EDHFD service area, impacts on fire protection facilities and services would be **direct** and **potentially significant**. However, these impacts would be less than under the Proposed Project Alternative because fewer new firefighters would be required. The **indirect** physical impacts of constructing these facilities are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development. ***[Lesser]***

> Mitigation Measure 3A.14-2: Incorporate California Fire Code; City of Folsom Fire Code Requirements; and EDHFD Requirements, if Necessary, into Project Design and Submit Project Design to the City of Folsom Fire Department for Review and Approval.
>
> To reduce impacts related to the provision of new fire services, the project applicant(s) of all project phases shall do the following, as described below.
>
> 1. Incorporate into project designs fire flow requirements based on the California Fire Code, Folsom Fire Code (City of Folsom Municipal Code Title 8, Chapter 8.36), and other applicable requirements based on the City of Folsom Fire Department fire prevention standards. Improvement plans showing the incorporation automatic sprinkler systems, the availability of adequate fire flow, and the locations of hydrants shall be submitted to the City of Folsom Fire Department for review and approval. In addition, approved plans showing access design shall be provided to the City of Folsom Fire Department as described by Zoning Code Section 17.57.080 ("Vehicular Access Requirements"). These plans shall describe access-road length, dimensions, and finished surfaces for firefighting equipment. The installation of security gates across a fire apparatus access road shall be approved by the City of Folsom Fire Department. The design and operation of gates and barricades shall be in accordance with the Sacramento County Emergency Access Gates and Barriers Standard, as required by the City of Folsom Fire Code.

2. Submit a Fire Systems New Buildings, Additions, and Alterations Document Submittal List to the City of Folsom Community Development Department Building Division for review and approval before the issuance of building permits.

In addition to the above measures, the project applicant(s) of all project phases shall incorporate the provisions described below for the portion of the SPA within the EDHFD service area, if it is determined through City/El Dorado County negotiations that EDHFD would serve the 178-acre portion of the SPA.

3. Incorporate into project designs applicable requirements based on the EDHFD fire prevention standards. For commercial development, improvement plans showing roadways, land splits, buildings, fire sprinkler systems, fire alarm systems, and other commercial building improvements shall be submitted to the EDHFD for review and approval. For residential development, improvement plans showing property lines and adjacent streets or roads; total acreage or square footage of the parcel; the footprint of all structures; driveway plan views describing width, length, turnouts, turnarounds, radiuses, and surfaces; and driveway profile views showing the percent grade from the access road to the structure and vertical clearance shall be submitted to the EDHFD for review and approval.

4. Submit a Fire Prevention Plan Checklist to the EDHFD for review and approval before the issuance of building permits. In addition, residential development requiring automation fire sprinklers shall submit sprinkler design sheet(s) and hydraulic calculations from a California State Licensed C-16 Contractor.

The City shall not authorize the occupancy of any structures until the project applicant(s) have obtained a Certificate of Occupancy from the City of Folsom Community Development Department verifying that all fire prevention items have been addressed on-site to the satisfaction of the City of Folsom Fire Department and/or the EDHFD for the 178-acre area of the SPA within the EDHFD service area.

Implementation: Project applicant(s) of all project phases.

Timing: Before issuance of building permits and issuance of occupancy permits or final inspections for all project phases.

Enforcement: City of Folsom Fire Department, and City of Folsom Community Development Department, and/or EDHFD for the portion of the SPA within the EDHFD service area.

PP

Upon annexation of the SPA, fire protection services within the SMFD service area would become the responsibility of the City of Folsom Fire Department. During initial project development, Station 37 at 70 Clarksville Road would provide first-response service. This station is approximately 1.6 miles north of the SPA via Scott Road.

The EDHFD serves approximately 178 acres of the northeaster portion of the SPA as a multi-jurisdictional district. Currently, ongoing revenue neutrality negations between the EDHFD and the City will determine if this portion of the SPA remains in the EDHFD service area or is transferred to the jurisdiction of the City of Folsom Fire Department; therefore, it is assumed that this portion of the SPA would remain in the EDHFD service area. First-response service to the SPA within the EDHFD would be provided by Station 85 at 1050 Wilson Boulevard, approximately 1.2 miles northeast of the SPA via Latrobe Road in unincorporated El Dorado County.

The estimated population of the project under buildout of the Proposed Project Alternative would be 24,335 persons. To maintain adequate levels of service, additional fire personnel, facilities, and equipment would be

required to serve project development at buildout. Using the City's ratio of 1.6 fire personnel to 1,000 residents, a minimum of 39 new firefighters would be needed to serve the Proposed Project Alternative at buildout.

The Proposed Project Alternative would include construction of two fire stations to serve the SPA (see Exhibit 2-3, "Folsom South of 50 Conceptual Land Use Plan," in Chapter 2, "Alternatives"). The first fire station would be east of Oak Avenue and north of "A" Street and would house an engine company with three personnel on each of three shifts (Haverty, pers. comm., 2009). The second fire station would be north of "B" Street and east of Scott Road. The number of personnel and equipment required at this fire station has not been determined. Final size and location of the two fire station sites would be determined on completion of response time analysis studies and through coordination with the City of Folsom Fire Department.

Per the City of Folsom Municipal Code Chapter 3, Title 3.80, "Capital Improvement New Construction Fee," new development is responsible for the full cost of additional facilities and equipment necessary as a result of that development through payment of the City's capital improvement new construction fees. This fee is used exclusively for construction of new fire and police stations and associated apparatus as required by new development. In addition, new development within the EDHFD service area would be required to pay $1.16 per square foot of residential and commercial development, which is used exclusively for construction of new fire stations and associated apparatus (El Dorado County Fire Prevention Officers 2009).

The project applicant(s) would be required to incorporate California Fire Code and Folsom Fire Code (City of Folsom Municipal Code Title 8, Chapter 8.36) requirements into all development phases, including adequate on-site circulation, equipment access during emergency conditions, adequate firefighting water flow, hydrant spacing. In addition, the Folsom Fire Code requires that automatic fire sprinklers be installed in all new commercial construction that exceeds 3,600 square feet and some residential properties exceeding 4,999 square feet. The City of Folsom Community Development Building Division requires all new development to submit a Fire Systems New Buildings, Additions, and Alterations Document Submittal List documenting the incorporation of fire code requirements before issuance of building permits.

For those areas of the SPA within the EDHFD service area, the project applicant(s) would be required to incorporate EDHFD requirements into all development phases in addition to the requirements outlined in the California Fire Code and Folsom Fire Code. The EDHFD has adopted the El Dorado County Regional Fire Protection Standards and these standards include adequate on-site circulation, equipment access during emergency conditions, adequate firefighting water flow, and automatic fire sprinklers be installed in two-family residential dwelling units and extended to attached garages and basements. The EDHFD requires all new development to submit a Fire Prevention Plan Checklist documenting fire code requirements before issuance of building permits.

Because the City of Folsom Fire Department and EDHFD outlines fire prevention standards to be incorporated into new residential and commercial development and these standards require approval by City of Folsom Fire Department, City of Folsom Community Development Department and EDHFD for those areas of the SPA within the EDHFD service area, impacts on fire protection facilities and services would be **direct** and **potentially significant**. The **indirect** physical impacts of constructing these facilities are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development.

Mitigation Measure: Implement Mitigation Measure 3A.14-2.

RIM

Under the Resource Impact Minimization Alternative, the estimated residential population at project buildout would be 19,584 persons. To maintain adequate levels of service, additional fire personnel, facilities, and equipment would be required to serve project development at buildout. Using the City's ratio of 1.6 fire personnel to 1,000 residents, a minimum of 31 new firefighters would be needed to serve project development at buildout.

This would be approximately 8 fewer new firefighters than would be required under the Proposed Project Alternative.

The Resource Minimization Alternative would include construction of fire stations to serve the SPA. The location, number of personnel, and equipment required at new fire stations has not been determined. Final size and location of the fire station sites would be determined on completion of response time analysis studies and through coordination with the City of Folsom Fire Department.

Per the City of Folsom Municipal Code Chapter 3, Title 3.80, "Capital Improvement New Construction Fee," new development is responsible for the full cost of additional facilities and equipment necessary as a result of that development through payment of the City's capital improvement new construction fees. This fee is used exclusively for construction of new fire and police stations and associated apparatus as required by new development. In addition, new development within the EDHFD service area would be required to pay $1.16 per square foot of residential and commercial development, which is used exclusively for construction of new fire stations and associated apparatus.

Because the City of Folsom Fire Department and EDHFD outlines fire prevention standards to be incorporated into new residential and commercial development and these standards require approval by the City of Folsom Fire Department, the City of Folsom Community Development Department, and EDHFD for those areas of the SPA within the EDHFD service area, impacts on fire protection facilities and services would be **direct** and **potentially significant**. However, these impacts would be less than under the Proposed Project Alternative because fewer new firefighters would be required. The **indirect** physical impacts of constructing these facilities are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development. ***[Lesser]***

Mitigation Measure: Implement Mitigation Measure 3A.14-2.

CD

Under the Centralized Development Alternative, the estimated residential population at project buildout would be 20,689 persons. To maintain adequate levels of service, additional fire personnel, facilities, and equipment would be required to serve project development at buildout. Using the City's ratio of 1.6 fire personnel to 1,000 residents, a minimum of 33 new firefighters would be needed to serve project development at buildout. This would be approximately six fewer new firefighters than would be required under the Proposed Project Alternative.

The Centralized Development Alternative would include construction of fire stations to serve the SPA. The location, number of personnel, and equipment required at new fire stations has not been determined. Final size and location of the fire station sites would be determined on completion of response time analysis studies and through coordination with the City of Folsom Fire Department.

Per the City of Folsom Municipal Code Chapter 3, Title 3.80, "Capital Improvement New Construction Fee," new development is responsible for the full cost of additional facilities and equipment necessary as a result of that development through payment of the City's capital improvement new construction fees. This fee is used exclusively for construction of new fire and police stations and associated apparatus as required by new development. In addition, new development within the EDHFD service area would be required to pay $1.16 per square foot of residential and commercial development, which is used exclusively for construction of new fire stations and associated apparatus.

Because the City of Folsom Fire Department and EDHFD outlines fire prevention standards to be incorporated into new residential and commercial development and these standards require approval by the City of Folsom Fire Department, the City of Folsom Community Development Department, and EDHFD for those areas of the SPA within the EDHFD service area, impacts on fire protection facilities and services would be **direct** and **potentially significant**. However, these impacts would be less than under the Proposed Project Alternative because fewer

new firefighters would be required. The **indirect** physical impacts of constructing these facilities are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development. ***[Lesser]***

Mitigation Measure: Implement Mitigation Measure 3A.14-2.

RHD

Under the Reduced Hillside Development Alternative, the estimated residential population at project buildout would be 28,084 persons. To maintain adequate levels of service, additional fire personnel, facilities, and equipment would be required to serve project development at buildout. Using the City's ratio of 1.6 fire personnel to 1,000 residents, a minimum of 40 new firefighters would be needed to serve project development at buildout. This would be approximately one more new firefighter than would be required under the Proposed Project Alternative.

The Reduced Hillside Development Alternative would include construction of fire stations to serve the SPA. The location, number of personnel, and equipment required at new fire stations has not been determined. Final size and location of the fire station sites would be determined on completion of response time analysis studies and through coordination with the City of Folsom Fire Department.

Per the City of Folsom Municipal Code Chapter 3, Title 3.80, "Capital Improvement New Construction Fee," new development is responsible for the full cost of additional facilities and equipment necessary as a result of that development through payment of the City's capital improvement new construction fees. This fee is used exclusively for construction of new fire and police stations and associated apparatus as required by new development. In addition, new development within the EDHFD service area would be required to pay $1.16 per square foot of residential and commercial development, which is used exclusively for construction of new fire stations and associated apparatus.

Because the City of Folsom Fire Department and EDHFD outlines fire prevention standards to be incorporated into new residential and commercial development and these standards require approval by the City of Folsom Fire Department, the City of Folsom Community Development Department, and EDHFD for those areas of the SPA within the EDHFD service area, impacts on fire protection facilities and services would be **direct** and **potentially significant**. However, these impacts would be greater than under the Proposed Project Alternative because more new firefighters would be required. The **indirect** physical impacts of constructing these facilities are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development. ***[Greater]***

Mitigation Measure: Implement Mitigation Measure 3A.14-2.

Off-Site Elements

Construction of the off-site freeway interchange improvements, the sewer force main, the drainage basin in Sacramento County, and the two roadway connections into El Dorado Hills would not involve construction of new housing or development of new businesses that would require firefighting services; therefore, the off-site elements would have **no direct** impact on the demand additional firefighting personnel, facilities, and equipment. **No indirect** impacts would occur.

Mitigation Measure: No mitigation measures are required.

Implementation of Mitigation Measure 3A.14-2 would reduce significant impacts under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives associated with the increased demand for fire protection facilities, systems, equipment, and services to a **less-than-significant** level by requiring that applicable California Fire Code, City of Folsom Fire Code, and/or EDHFD standards are incorporated into the project design, along with review and approval of project plans by the City of Folsom Fire Department, the City of Folsom Community Development Department Building

Division, and/or EDHFD for the 178-acre area of the SPA within the EDHFD service area prior to issuance of building permits.

IMPACT 3A.14-3 Increased Demand for Fire Flow. *Project implementation would include the development of residential, commercial, school, and other uses that would require adequate available water flow for fire suppression. Lack of adequate fire flow would impede effective fire suppression in the SPA.*

On-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80, and no off-site water facilities would be constructed. There is currently no public water service available in the SPA, and property owners would be served by individual groundwater wells. Domestic groundwater wells would likely not be capable of pumping a sufficient amount of water to meet fire flow requirements. However, before issuance of a building permit from Sacramento County, the property owners would be required to coordinate with the SMFD regarding fire flow requirements and obtain a "Fire District Certificate of Release" (Sacramento County 2008). Therefore, increased demands for fire flow would be a **direct** and **less-than-significant** impact. **No indirect** impacts would occur. ***[Lesser]***

NCP, PP, RIM, CD, RHD

The City of Folsom Fire Department and EDHFD maintain oversight authority to ensure that adequate water volume and pressure are available their respective service areas. The total fire flow needed to extinguish a structural fire is based on a variety of factors, including building design, internal square footage, construction materials, dominant use, height, number of floors, and distance to adjacent buildings. Minimum requirements for available fire flow at a given building are dependent on standards set in the California Fire Code. Generally, fire flow requirements for the type of development associated with the Proposed Project Alternative are identified by the California Fire Code. These fire flow requirements are 1,500 gpm for low- and medium-density residential (2-hour duration), 2,500 gpm for high-density residential (3-hour duration), 3,000 gpm for commercial/office and light industrial (3-hour duration).

In addition to meeting minimum water flow requirements, all development projects in Folsom are required to meet various other fire protection requirements identified in the Folsom Fire Code. The fire code requires that automatic fire sprinklers be installed in all new commercial construction that exceeds 3,600 square feet and some residential properties exceeding 4,999 square feet. The fire code outlines the number and distribution of fire hydrants and minimum fire-flow requirements for structures exceeding 3,600 square feet. The City of Folsom Fire Department requirements are determined for specific development projects at the design stage. For the 178-acre area of the SPA within the EDHFD service area, all development projects are required to incorporate EDHFD requirements in addition to the requirements outlined in the California Fire Code and Folsom Fire Code. As discussed above, on-going revenue neutrality negations between the EDHFD and City would determine if the 178-acre portion of the SPA remains in the EDHFD service area or is transferred to the jurisdiction of the City of Folsom Fire Department.

Lack of adequate fire flow would impede the ability of the City of Folsom Fire Department and/or EDHFD to provide effective fire suppression service in the SPA. Increased demands for fire flow would be considered a **significant**, **direct** impact. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure: Implement Mitigation Measure 3A.14-2.

Mitigation Measure 3A.14-3: Incorporate Fire Flow Requirements into Project Designs.

The project applicant(s) of all project phases shall incorporate into their project designs fire flow requirements based on the California Fire Code, Folsom Fire Code, and/or EDHFD for those areas of the SPA within the EDHFD service area and shall verify to City of Folsom Fire Department that adequate water flow is available, prior to approval of improvement plans and issuance of occupancy permits or final inspections for all project phases.

Implementation: Project applicant(s) of all project phases.

Timing: Before issuance of building permits and issuance of occupancy permits or final inspections for all project phases.

Enforcement: City of Folsom Fire Department, City of Folsom Community Development Department, and/or EDHFD for the 178-acre portion of the SPA within the EDHFD service area.

Off-Site Elements

Construction of the off-site freeway interchange improvements, the sewer force main, the drainage basin in Sacramento County, and the roadway connections into El Dorado Hills would not involve construction of new housing or development of new businesses that would require provision of fire flow; therefore, the off-site elements would have **no direct** or **indirect** impacts on the demand for fire flow.

Mitigation Measure: No mitigation measures are required.

Implementation of Mitigation Measures 3A.14-2 and 3A.14-3 would reduce impacts associated with increased demand for fire flow to a **less-than-significant** level under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives because verification from the City of Folsom Fire Department and/or EDHFD that adequate water supply is available would be obtained prior to approval of improvement plans, and project fire flow would design would based on specification requirements included in the California Fire Code, the Folsom Fire Code, and/or the EDHFD for the portion of the SPA within the EDHFD service area and reviewed and approved by the City.

IMPACT 3A.14-4 Increased Demand for Police Protection Facilities, Services, and Equipment. *Project development would increase the demand for police protection facilities and services, resulting in the need for additional staff and equipment to maintain an adequate level of service.*

On-Site Elements

NP

The No Project Alternative could develop up to 44 rural residences and generate approximately 128 new residents under the existing Sacramento County agricultural zoning classification AG-80, and no off-site water facilities would be constructed. Increased demands for police protection services would be minimal under the No Project Alternative and new residential units would not require additional police protection services beyond what is currently available. Therefore, impacts on police protection services would be **direct** and **less than significant**. **No indirect** impacts would occur. ***[Lesser]***

NCP

To maintain adequate levels of service, additional officers, facilities, and equipment would be required to serve project development at buildout. Under the No USACE Permit Alternative, the estimated residential population at project buildout would be 15,808 persons. Using the City's ratio of 1.3 officers to 1,000 residents, a minimum of 21 new police officers would be needed to serve project development at buildout. This would be approximately 11 fewer new officers than would be required under the Proposed Project Alternative.

The No USACE Permit Alternative would include construction of one police service center north of Easton Valley Parkway west of Scott Road. The location, number of personnel, and equipment required at new police service center has not been determined. The final size and location of the police service center would be determined through coordination with the City of Folsom Police Department.

Per the City of Folsom Municipal Code Chapter 3, Title 3.80, "Capital Improvement New Construction Fee," new development is responsible for the full cost of additional facilities and equipment necessary as a result of that development through payment of the City's capital improvement new construction fees. This fee is used exclusively for construction of new fire and police stations and associated apparatus as required by new development.

Because the applicants would fund and construct sufficient police facilities to serve the Proposed Project Alternative, impacts related to increased demands for police protection facilities, services, and equipment would be **direct** and **less than significant**, and would occur to a lesser degree than under the Proposed Project Alternative because fewer new police officers would be required. The **indirect** impacts of constructing these facilities are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development. ***[Lesser]***

Mitigation Measure: No mitigation measures are required.

PP

The City of Folsom Police Department, which is located approximately 5 miles northeast of the SPA, would provide first-response service for the SPA. Under the Proposed Project Alternative, the estimated population of the project would be 24,335 persons at buildout. To maintain adequate levels of service, additional law enforcement facilities, services, and equipment would be required to serve project development at buildout. Using the City's ratio of 1.3 officers to 1,000 residents, a minimum of 32 new police officers would be needed to accommodate project development at buildout.

The Proposed Project Alternative would include construction of one police service center north of Easton Valley Parkway west of Scott Road (see Exhibit 2-3, "Folsom South of 50 Conceptual Land Use Plan," in Chapter 2, "Alternatives"). The final size and location of the police service center would be determined through coordination with the City of Folsom Police Department.

Per the City of Folsom Municipal Code Chapter 3, Title 3.80, "Capital Improvement New Construction Fee," new development is responsible for the full cost of additional facilities and equipment necessary as a result of that development through payment of the City's capital improvement new construction fees. This fee is used exclusively for construction of new fire and police stations and associated apparatus as required by new development.

Because the project applicant(s) would fund and construct sufficient police facilities and personnel to serve the Proposed Project Alternative, impacts related to increased demands for police protection facilities, services, and equipment would be **direct** and **less than significant**. The **indirect** impacts of constructing these facilities are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development.

Mitigation Measure: No mitigation measures are required.

RIM

To maintain adequate levels of service, additional officers, facilities, and equipment would be required to serve project development at buildout. Under the Resource Impact Minimization Alternative, the estimated residential population at project buildout would be 19,584 persons. Using the City's ratio of 1.3 officers to 1,000 residents, a minimum of 25 new police officers would be needed to serve project development at buildout. This would be approximately seven fewer new officers than would be required under the Proposed Project Alternative.

The Resource Impact Minimization Alternative would include construction of one police service center. The location, number of personnel, and equipment required at new police service center has not been determined. The final size and location of the police service center would be determined through coordination with the City of Folsom Police Department.

Per the City of Folsom Municipal Code Chapter 3, Title 3.80, "Capital Improvement New Construction Fee," new development is responsible for the full cost of additional facilities and equipment necessary as a result of that development through payment of the City's capital improvement new construction fees. This fee is used exclusively for construction of new fire and police stations and associated apparatus as required by new development.

Because the applicants would fund and construct sufficient police facilities to serve the Proposed Project Alternative, impacts related to increased demands for police protection facilities, services, and equipment would be **direct** and **less than significant**, and would occur to a lesser degree than under the Proposed Project Alternative because fewer new police officers would be required. The **indirect** physical impacts of constructing these facilities are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development. ***[Lesser]***

Mitigation Measure: No mitigation measures are required.

CD

To maintain adequate levels of service, additional officers, facilities, and equipment would be required to serve project development at buildout. Under the Centralized Development Alternative, the estimated residential population at project buildout would be 20,689 persons. Using the City's ratio of 1.3 officers to 1,000 residents, a minimum of 27 new police officers would be needed to serve project development at buildout. This would be approximately five fewer new officers than would be required under the Proposed Project Alternative.

The Centralized Development Alternative would include construction of one police service center. The location, number of personnel, and equipment required at new police service center has not been determined. The final size and location of the police service center would be determined through coordination with the City of Folsom Police Department.

Per the City of Folsom Municipal Code Chapter 3, Title 3.80, "Capital Improvement New Construction Fee," new development is responsible for the full cost of additional facilities and equipment necessary as a result of that development through payment of the City's capital improvement new construction fees. This fee is used exclusively for construction of new fire and police stations and associated apparatus as required by new development.

Because the applicants would fund and construct sufficient police facilities to serve the Proposed Project Alternative, impacts related to increased demands for police protection facilities, services, and equipment would be **direct** and **less than significant**, and would occur to a lesser degree than under the Proposed Project

Alternative because fewer new police officers would be required. The **indirect** physical impacts of constructing these facilities are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development. ***[Lesser]***

Mitigation Measure: No mitigation measures are required.

RHD

To maintain adequate levels of service, additional officers, facilities, and equipment would be required to serve project development at buildout. Under the Reduced Hillside Development Alternative, the estimated residential population at project buildout would be 28,084 persons. Using the City's ratio of 1.3 officers to 1,000 residents, a minimum of 33 new police officers would be needed to serve project development at buildout. This would be approximately one more new officer than would be required under the Proposed Project Alternative.

The Reduced Hillside Development Alternative would include construction of one police service center. The location, number of personnel, and equipment required at new police service center has not been determined. The final size and location of the police service center would be determined through coordination with the City of Folsom Police Department.

Per the City of Folsom Municipal Code Chapter 3, Title 3.80, "Capital Improvement New Construction Fee," new development is responsible for the full cost of additional facilities and equipment necessary as a result of that development through payment of the City's capital improvement new construction fees. This fee is used exclusively for construction of new fire and police stations and associated apparatus as required by new development.

Because the applicants would fund and construct sufficient police facilities to serve the Proposed Project Alternative, impacts related to increased demands for police protection facilities, services, and equipment would be **direct** and **less than significant**, but would occur to a greater degree than under the Proposed Project Alternative because more new police officers would be required. The **indirect** physical impacts of constructing these facilities are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development. ***[Greater]***

Mitigation Measure: No mitigation measures are required.

Off-Site Elements

Construction of the off-site freeway interchange improvements, the sewer force main, the drainage basin in Sacramento County, and the two roadway connections into El Dorado Hills, would not involve construction of new housing or development of new businesses that would require police services; therefore, the off-site elements would have **no direct** impact on the demand additional law enforcement personnel, facilities, and equipment. **No indirect** impacts would occur.

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.14-5 Increased Demand for Public Elementary School Facilities and Services. *Project implementation would increase demand for elementary schools (grades K–5) to serve the project.*

On-Site Elements

NP

The No Project Alternative could include development of a maximum of 44 residential units and generate approximately 128 new residents in Sacramento County under the existing Sacramento County agricultural zoning classification AG-80, and no off-site water facilities would be constructed. Based on student-yield generation rates shown in Table 3A.14-2, the No Project Alternative would generate approximately 49 new elementary school students (grades K–5). Existing elementary schools in FCUSD would have sufficient capacity to accommodate these students. Therefore, impacts on elementary school facilities and services would be **direct** and **less than significant**. **No indirect** impacts would occur. ***[Lesser]***

NCP

Based on student-yield generation rates shown in Table 3A.14-2 above, implementation of the No USACE Permit Alternative would generate approximately 2,005 new elementary school students (grades K–5) at project buildout. This would be approximately 802 fewer elementary school students than under the Proposed Project Alternative. Once constructed, the five proposed elementary schools in the SPA would accommodate all 2,005 new students and would have capacity for an additional 995 students. Therefore, the proposed elementary schools would have sufficient capacity to meet the demands of project-generated elementary school students and would not result in a shortfall of elementary school services or facilities.

The project applicant(s) would pay the state-mandated school impact fees to FCUSD. This fee is typically an insufficient amount to fund 100% of new school facility construction and operation. The California Legislature has declared that the school impact fee is deemed to be full and adequate mitigation under CEQA. (California Government Code Section 65996.) In addition, Measure W would require the project applicant(s) to fund and construct sufficient elementary school facilities to serve the project. Therefore, implementation of the No USACE Permit Alternative would have a **less-than-significant**, **direct** impact on school services and facilities in the long term. The **indirect** impacts of constructing these facilities are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development. ***[Lesser]***

Mitigation Measure: No mitigation measures are required.

PP

The SPA would be within the boundaries of FCUSD. Based on student-yield generation rates shown in Table 3A.14-2, implementation of the Proposed Project Alternative would generate approximately 2,807 new elementary school students (grades K–5) at project buildout. The Proposed Project Alternative includes construction of five elementary schools throughout the SPA (see Exhibit 2-3, “Folsom South of 50 Conceptual Land Use Plan,” in Chapter 2, “Alternatives”).

Elementary schools in FCUSD have an average capacity of 600 students (FCUSD 2008a:18). Using this average as the assured capacity of schools to be built on-site, the five proposed school sites would have a total capacity of 3,000 students. Thus, once constructed, the proposed elementary schools would accommodate all 2,807 new students and would have capacity for an additional 193 students. To accommodate students in the SPA, school attendance boundaries would be adjusted regularly to account for the phases of development and available capacity at completed schools in the SPA. Therefore, the proposed elementary schools would have sufficient

capacity to meet the demands of project-generated elementary school students and would not result in a shortfall of school services or facilities.

As required by state law, the project applicant(s) would pay the state-mandated school impact fees to FCUSD. As of March 2008, the developer is charged Level II fees of $6.99 per square foot for residential development and $0.47 per square foot for commercial development in the FCUSD boundaries (FCUSD 2009). The City would determine the assessable square footage that would be subject to the fee at the time of development (FCUSD 2009). This fee is typically an insufficient amount to fund 100% of new school facility construction. The California Legislature has declared that the school impact fee is deemed to be full and adequate mitigation under CEQA. (California Government Code Section 65996.) In addition, Measure W would require the project applicant(s) to fund and construct sufficient elementary school facilities to serve the Proposed Project Alternative.

Because the project applicant(s) would pay state-mandated school impact fees and fund all costs associated with construction of middle and high school facilities, and assuming that the middle school/high school is constructed, implementation of the Proposed Project Alternative would have a **less-than-significant, direct** impact on school services in the long term. This impact would be further reduced by the project applicant(s)' compliance with their obligations under Measure W to provide "for the funding and construction of all necessary school facilities for the Area, so that Folsom residents north of Highway 50 are not required to pay for the construction of new school facilities serving the Area and existing schools are not overcrowded by development in the Area." The **indirect** impacts of constructing these facilities are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development.

Mitigation Measure: No mitigation measures are required.

RIM

Based on student-yield generation rates shown in Table 3A.14-2 above, implementation of the Resource Impact Minimization Alternative would generate approximately 2,996 new elementary school students (grades K–5) at project buildout. This would be approximately 189 more elementary school students than under the Proposed Project Alternative. Once constructed, the five proposed elementary schools in the SPA would accommodate all 2,996 new students and would have capacity for an additional 4 students. Therefore, the proposed elementary schools would have sufficient capacity to meet the demands of project-generated elementary school students and would not result in a shortfall of elementary school services or facilities.

The project applicant(s) would pay the state-mandated school impact fees to FCUSD. This fee is typically an insufficient amount to fund 100% of new school facility construction and operation. The California Legislature has declared that the school impact fee is deemed to be full and adequate mitigation under CEQA. (California Government Code Section 65996.) In addition, Measure W would require the project applicant(s) to fund and construct sufficient elementary school facilities to serve the project. Therefore, implementation of the Resource Impact Minimization Alternative would have a **less-than-significant**, **direct** impact on school services and facilities in the long term. The **indirect** impacts of constructing these facilities are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development. ***[Lesser]***

Mitigation Measure: No mitigation measures are required.

CD

Based on student-yield generation rates shown in Table 3A.14-2 above, implementation of the Centralized Development Alternative would generate approximately 2,363 new elementary school students (grades K–5) at project buildout. This would be approximately 444 fewer elementary school students than under the Proposed Project Alternative.

The Centralized Development Alternative proposes four elementary schools, which would be one less than the Proposed Project Alternative. Using this average as the assured capacity of schools to be built on-site, the four proposed school sites would have a total capacity of 2,400 students. Once constructed, the four proposed elementary schools in the SPA would accommodate all 2,363 new students and would have capacity for an additional 37 students. Therefore, the proposed elementary school would have sufficient capacity to meet the demands of project-generated elementary school students and would not result in a shortfall of elementary school services or facilities.

The project applicant(s) would pay the state-mandated school impact fees to FCUSD. This fee is typically an insufficient amount to fund 100% of new school facility construction and operation. However, The California Legislature has declared that the school impact fee is deemed to be full and adequate mitigation under CEQA. (California Government Code Section 65996.) In addition, Measure W would require the project applicant(s) to fund and construct sufficient elementary school facilities to serve the project. Therefore, implementation of the Centralized Development Alternative would have a **less-than-significant**, **direct** impact on school services and facilities in the long term. The **indirect** impacts of constructing these facilities are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development. ***[Lesser]***

Mitigation Measure: No mitigation measures are required.

RHD

Based on student-yield generation rates shown in Table 3A.14-2 above, implementation of the Reduced Hillside Development Alternative would generate approximately 2,556 new elementary school students (grades K–5) at project buildout. This would be approximately 251 fewer elementary school students than under the Proposed Project Alternative. Once constructed, the five proposed elementary schools in the SPA would accommodate all 2,556 new students and would have capacity for an additional 444 students. Therefore, the proposed elementary schools would have sufficient capacity to meet the demands of project-generated elementary school students and would not result in a shortfall of elementary school services or facilities.

The project applicant(s) would pay the state-mandated school impact fees to FCUSD. This fee is typically an insufficient amount to fund 100% of new school facility construction and operation. The California Legislature has declared that the school impact fee is deemed to be full and adequate mitigation under CEQA. (California Government Code Section 65996.) In addition, Measure W would require the project applicant(s) to fund and construct sufficient elementary school facilities to serve the project. Therefore, implementation of the Reduced Hillside Development Alternative would have a **less-than-significant**, **direct** impact on school services and facilities in the long term. The **indirect** impacts of constructing these facilities are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development. ***[Lesser]***

Mitigation Measure: No mitigation measures are required.

Off-Site Elements

Construction of the off-site freeway interchange improvements, the sewer force main, the drainage basin in Sacramento County, and the two roadway connections into El Dorado Hills would not involve construction of new housing or development of new businesses that would generate elementary school students. Therefore, the off-site elements would have **no direct** or **indirect** impact on elementary school services and facilities.

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.14-6 Increased Demand for Public Middle and High School Facilities and Services. *Project implementation would increase demand for middle schools (grades 6–8) and high schools (grades 9–12) to serve the project.*

On-Site Elements

NP

The No Project Alternative could include development of a maximum of 44 residential units and generate approximately 128 new residents in Sacramento County under the existing Sacramento County agricultural zoning classification AG-80, and no off-site water facilities would be constructed. Based on student-yield generation rates shown in Table 3A.14-2, the No Project Alternative would generate approximately 16 new middle school students (grades 6–8) and 19 new high school students (grades 9–12). Existing middle schools and high schools in Sacramento County would have sufficient capacity to accommodate these students. Therefore, impacts on middle and high school facilities and services would be **direct** and **less than significant**. **No indirect** impacts would occur. ***[Lesser]***

NCP

Based on student-yield generation rates shown in Table 3A.14-2 above, implementation of the No USACE Permit Alternative would generate approximately 710 new middle school students (grades 6–8) and approximately 756 new high school students (grades 9–12) at buildout. This would be approximately 307 fewer middle school students and 317 fewer high school students than under the Proposed Project Alternative.

The proposed middle school, with a total capacity of 900 students, would accommodate all 710 new students and would have capacity for an additional 190 students. The proposed high school, with a capacity for 2,000 students, would accommodate all 756 students and would have capacity for an additional 1,244 students. Therefore, with implementation of the No USACE Permit Alternative, the combined middle school and high school would have sufficient capacity to accommodate students living in the SPA; the project would not result in a shortfall of school services or facilities.

The project applicant(s) would pay the state-mandated school impact fees to FCUSD. This fee is typically an insufficient amount to fund 100% of new school facility construction and operation. The California Legislature has declared that the school impact fee is deemed to be full and adequate mitigation under CEQA. (California Government Code Section 65996.) In addition, Measure W would require the project applicant(s) to fund and construct sufficient middle and high school facilities to serve the project. Therefore, implementation of the No USACE Permit Alternative would have a **less-than-significant**, **direct** impact on school services and facilities in the long term. The **indirect** impacts of constructing these facilities are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development. ***[Lesser]***

Mitigation Measure: No mitigation measures are required.

PP

The SPA would be within the boundaries of FCUSD. Based on student-yield generation rates shown in Table 3A.14-2 above, implementation of the Proposed Project Alternative would generate approximately 1,017 new middle school students (grades 6–8) and approximately 1,073 new high school students (grades 9–12) at buildout. The proposed combined middle school and high school site would accommodate a combined campus on one 70-acre site in the south-central portion of the SPA north of White Rock Road, south of "A" Street, and east of Scott Road (see Exhibit 2-3, "Folsom South of 50 Conceptual Land Use Plan," in Chapter 2, "Alternatives").

Middle schools in FCUSD have an average capacity of 900 students (FCUSD 2008a:18). Therefore, under the Proposed Project Alternative, approximately 193 students would not be accommodated by the proposed on-site middle school. These middle schools students would likely attend Folsom Middle School, which is currently operating above capacity. The additional students from the SPA could result in overcrowding at Folsom Middle School. However, Measure W requires the project applicant(s) to fund and construct sufficient middle school facilities to serve students on the Proposed Project Alternative.

High schools in FCUSD have an average capacity of 2,000 students (FCUSD 2008a:18). The proposed high school in the SPA would accommodate all 1,073 students and would have capacity for an additional 927 students. Therefore, with implementation of the Proposed Project Alternative, the combined high school would have sufficient capacity to accommodate high school students living in the SPA; this alternative would not result in a shortfall of high school services or facilities.

As required by state law, the project applicant(s) would pay the state-mandated school impact fees to FCUSD. As of March 2008, the developer is charged Level II fees of $6.99 per square foot for residential development and $0.47 per square foot for commercial development in the FCUSD boundaries (FCUSD 2009). The City would determine the assessable square footage that would be subject to the fee at the time of development (FCUSD 2009). This fee is typically an insufficient amount to fund 100% of new school facility construction. The California Legislature has declared that the school impact fee is deemed to be full and adequate mitigation under CEQA. (California Government Code Section 65996.) In addition, Measure W would require the applicants to

Because the project applicant(s) would pay state-mandated school impact fees and fund all costs associated with construction of middle and high school facilities, and assuming that the middle school/high school is constructed, implementation of the Proposed Project Alternative would have a **less-than-significant, direct** impact on school services in the long term. This impact will be further reduced by the project applicant(s)'s compliance with their obligations under Measure W to provide "for the funding and construction of all necessary school facilities for the Area, so that Folsom residents north of Highway 50 are not required to pay for the construction of new school facilities serving the Area and existing schools are not overcrowded by development in the Area." The **indirect** impacts of constructing these facilities are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development.

Mitigation Measure: No mitigation measures are required.

RIM

Based on student-yield generation rates shown in Table 3A.14-2 above, implementation of the Resource Impact Minimization Alternative would generate approximately 866 new middle school students (grades 6–8) and approximately 919 new high school students (grades 9–12) at buildout. This would be approximately 151 fewer middle school students and 154 fewer high school students than under the Proposed Project Alternative.

The proposed middle school, with a total capacity of 900 students, would accommodate all 866 new students and would have capacity for an additional 34 students. The proposed high school, with a capacity for 2,000 students, would accommodate all 919 students and would have capacity for an additional 1,081 students. Therefore, with implementation of the Resource Impact Minimization Alternative, the combined middle school and high school would have sufficient capacity to accommodate students living in the SPA; the project would not result in a shortfall of school services or facilities.

The project applicant(s) would pay the state-mandated school impact fees to FCUSD. This fee is typically an insufficient amount to fund 100% of new school facility construction and operation. The California Legislature has declared that the school impact fee is deemed to be full and adequate mitigation under CEQA. (California Government Code Section 65996.) In addition, Measure W requires the project applicant(s) to fund and construct sufficient middle and high school facilities to serve the project. Therefore, implementation of the Resource Impact

Minimization Alternative would have a **less-than-significant**, **direct** impact on school services and facilities in the long term. The **indirect** impacts of constructing these facilities are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development. ***[Lesser]***

Mitigation Measure: No mitigation measures are required.

CD

Based on student-yield generation rates shown in Table 3A.14-2 above, implementation of the Centralized Development Alternative would generate approximately 869 new middle school students (grades 6–8) and approximately 889 new high school students (grades 9–12) at buildout. This would be approximately 148 fewer middle school students and 184 fewer high school students than under the Proposed Project Alternative.

The proposed middle school, with a total capacity of 900 students, would accommodate all 869 new students and would have capacity for an additional 37 students. The proposed high school, with a capacity for 2,000 students, would accommodate all 889 students and would have capacity for an additional 1,111 students. Therefore, with implementation of the Centralized Development Alternative, the combined middle school and high school would have sufficient capacity to accommodate students living in the SPA; the project would not result in a shortfall of school services or facilities.

The project applicant(s) would pay the state-mandated school impact fees to FCUSD. This fee is typically an insufficient amount to fund 100% of new school facility construction and operation. The California Legislature has declared that the school impact fee is deemed to be full and adequate mitigation under CEQA. (California Government Code Section 65996.) In addition, Measure W would require the project applicant(s) to fund and construct sufficient middle and high school facilities to serve the project. Therefore, implementation of the Centralized Development Alternative would have a **less-than-significant**, **direct** impact on school services and facilities in the long term. The **indirect** impacts of constructing these facilities are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development. ***[Lesser]***

Mitigation Measure: No mitigation measures are required.

RHD

Based on student-yield generation rates shown in Table 3A.14-2 above, implementation of the Reduced Hillside Development Alternative would generate approximately 1,480 new middle school students (grades 6–8) and approximately 972 new high school students (grades 9–12) at buildout. This would be approximately 463 more middle school students and 101 fewer high school students than under the Proposed Project Alternative.

The proposed middle school in the SPA, with a total capacity of 900 students, approximately 580 students would not be accommodated by the proposed facility. These middle schools students would likely attend Folsom Middle School, which is currently operating above capacity. The additional students from the SPA could result in overcrowding at Folsom Middle School. However, Measure W requires the project applicant(s) to fund and construct sufficient middle school facilities to serve students on the project.

The proposed high school, with a capacity for 2,000 students, would accommodate all 972 students and would have capacity for an additional 1,028 students. Therefore, with implementation of the Reduced Hillside Development Alternative, the combined middle school and high school would have sufficient capacity to accommodate students living in the SPA; the project would not result in a shortfall of school services or facilities.

The project applicant(s) would pay the state-mandated school impact fees to FCUSD. This fee is typically an insufficient amount to fund 100% of new school facility construction and operation. The California Legislature has declared that the school impact fee is deemed to be full and adequate mitigation under CEQA. (California

Government Code Section 65996.) In addition, Measure W would require the applicants to fund and construct sufficient middle and high school facilities to serve the project. Therefore, implementation of the Reduced Hillside Development Alternative would have a **less-than-significant**, **direct** impact on school services and facilities in the long term. The **indirect** impacts of constructing these facilities are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development. ***[Greater]***

Mitigation Measure: No mitigation measures are required.

Off-Site Elements

Construction of the off-site freeway interchange improvements, the sewer force main, the drainage basin in Sacramento County, and the two roadway connections into El Dorado Hills would not involve construction of new housing or development of new businesses that would generate middle school or high school students Therefore, the off-site elements would have **no direct** or **indirect** impacts on the middle and high school services and facilities.

Mitigation Measure: No mitigation measures are required.

3A.14.4 RESIDUAL SIGNIFICANT IMPACTS

With implementation of the mitigation measures listed above, project implementation would not result in any on-site residual significant impacts related to public services.

However, some of the off-site elements fall under the jurisdiction of El Dorado and Sacramento Counties, or Caltrans; therefore, neither the City nor the project applicant(s) would have control over the timing or implementation of mitigation measures for these off-site elements. Because the City does not control implementation of mitigation measures for off-site improvements constructed in areas under the jurisdiction of El Dorado and Sacramento Counties, or Caltrans, impact 3A.14-1 is considered **potentially significant and unavoidable** for off-site improvements which would be located in Sacramento County, El Dorado County, or Caltrans jurisdiction.

This section was prepared by DKS Associates.

3A.15 TRAFFIC AND TRANSPORTATION – LAND

This chapter presents the results of the transportation impact analysis (TIA) prepared by DKS Associates (DKS) for implementation of full buildout of the Proposed Project. Because of the large volume of raw data generated during traffic counts and modeling analyses conducted in support of the traffic analysis, it is not feasible to provide these data as an appendix to this draft environmental impact report/environmental impact statement (DEIR/DEIS). However, the data are available for review at the City of Folsom, 50 Natoma Street, Folsom, CA 95630.

Development of project is anticipated to be completed by the year 2030. The SPA, other areas of Folsom, and cities and communities throughout Sacramento County are expected to experience significant growth over this period. Major projects have been entitled for development throughout the region, and more are expected. As projects develop, traffic will increase on local and regional roadways and freeways. As regional development proceeds, transportation system improvements will be provided through local and regional funding programs, individual project mitigation, and improvements funded by the California Department of Transportation (Caltrans).

For analysis purposes, cumulative conditions reflect year 2030 conditions, the anticipated build-out date of the project. Year 2030 land use and transportation networks, described in additional detail later in this section, are based upon regional Sacramento Area Council of Governments (SACOG) forecasts as well as General Plan and specific project information in jurisdictions near the SPA. Year 2030 conditions also include the full operation of three rock quarries south of the SPA.

As part of the traffic analysis, the following scenarios were analyzed to assist in the identification of project-related traffic impacts:

- **Existing conditions – No Project (NP) Alternative** – Existing roadway operations were analyzed using existing roadway geometrics and existing volumes obtained from traffic count data.

- **Existing conditions – No USACE Permit (NCP) Alternative** – Similar to the Proposed Project Alternative, this scenario assumes full development of the SPA in accordance with the No USACE Permit Alternative. This alternative would change the location of certain portions of development such that no jurisdictional waters of the U.S. would be filled. The total amount of development under the No USACE Permit Alternative is less than the amount of development associated with the Proposed Project Alternative.

- **Existing conditions – Proposed Project (PP) Alternative** – Although full development of the Proposed Project would likely take many years, this scenario assumes full development of the Proposed Project immediately. In this manner, traffic conditions associated with full Project development can be directly compared to the No Project Alternative. This alternative presents an unlikely condition, given the magnitude of planned development associated with the Project. In reality, the Proposed Project will develop over a period of years (as dictated by market absorption rates), and other development outside the area of the Proposed Project would also occur in this same time frame.

- **Existing conditions – Resource Impact Minimization (RIM) Alternative** – Similar to the Proposed Project Alternative, this scenario assumes full development of the SPA in accordance with the Resource Impact Minimization Alternative. This alternative would include additional areas of high–quality biological habitat in the proposed preserve area, and would also preserve all of the on-site cultural resources eligible for listing on the California Register of Historic / National Register of Historic Places. The total amount of development under the Resource Impact Minimization Alternative is less than the amount of development associated with the Proposed Project Alternative.

- **Existing Conditions – Centralized Development (CD) Alternative** – Similar to the Proposed Project Alternative, this scenario assumes full development of the SPA in accordance with the Centralized Development Alternative. This alternative would preserve the eastern portion of the SPA, which lies within the Sierra Nevada foothills, leaving more of this area in its current undeveloped state for aesthetic, biological, and cultural resource purposes. The total amount of development under the Centralized Development Alternative is less than the amount of development associated with the Proposed Project Alternative.

- **Existing Conditions – Reduced Hillside Development (RHD) Alternative** – Similar to the Proposed Project Alternative, this scenario assumes full development of the SPA in accordance with the Reduced Hillside Development Alternative. This alternative would reduce the development area on the eastern portion of the SPA, which lies within the Sierra Nevada foothills, leaving more of this area in its current undeveloped state for aesthetic, biological, and cultural resource purposes. The total amount of development under the Reduced Hillside Development Alternative is greater than the amount of development associated with the Proposed Project Alternative, but the development is more compact.

- **Cumulative Conditions – No Project (NP) Alternative** – This scenario analyzes roadway conditions in the year 2030, assuming that the Proposed Project is not built. All cumulative scenarios incorporate roadway improvement projects associated with assumed development projects in the area, as identified by the City; Tier I projects identified in the SACOG *Metropolitan Transportation Plan for 2035* (MTP 2035) (SACOG 2008) that are outside the city limits through the year 2030; and additional improvements identified by the City that would be required pursuant to the City's capital improvement program (CIP).

- **Cumulative Conditions – No USACE Permit (NCP) Alternative** – This scenario assumes full development of the No USACE Permit Alternative in the year 2030, with the same off-site land use and roadway assumptions as the No Project Alternative.

- **Cumulative Conditions – Proposed Project (PP) Alternative** – This scenario assumes full development of the Proposed Project in the year 2030, with the same off-site land use and roadway assumptions as the No Project Alternative.

- **Cumulative Conditions – Resource Impact Minimization (RIM) Alternative** – This scenario assumes full development of the Resource Impact Minimization Alternative in the year 2030, with the same off-site land use and roadway assumptions as the No Project Alternative.

- **Cumulative conditions – Centralized Development (CD) Alternative** – This scenario assumes full development of the Centralized Development Alternative in the year 2030, with the same off-site land use and roadway assumptions as the No Project Alternative.

- **Cumulative conditions – Reduced Hillside Development (RHD) Alternative** – This scenario assumes full development of the Reduced Hillside Development Alternative in the year 2030, with the same off-site land use and roadway assumptions as the No Project Alternative.

3A.15.1 AFFECTED ENVIRONMENT

The site location and surrounding roadway network are shown in Exhibit 3A.15-1. The SPA is in unincorporated Sacramento County, and is generally bounded by U.S. Highway 50 (U.S. 50) to the north, White Rock Road to the south, Prairie City Road to the west and the El Dorado County line to the east. Annexation into the City of Folsom would be a part of the project. Detailed traffic analyses were performed for the intersections, roadway segments, freeway facilities, and interchanges shown in Table 3A.15-1. The study roadway segments, intersections, and freeway facilities identified for inclusion in this analysis were selected in consultation with City of Folsom, City of Rancho Cordova, Sacramento County, El Dorado County and Caltrans staff members.

Table 3A.15-1
Locations of Detailed Traffic Analyses

Intersections

City of Folsom

1. Folsom Boulevard / Blue Ravine Road
2. Sibly Street / Blue Ravine Road
3. Oak Avenue Parkway / Blue Ravine Road
4. Empire Ranch Road / Natoma Street
5. Oak Avenue Parkway / Riley Street
6. Oak Avenue Parkway / East Bidwell Street
7. Nesmith Court / East Bidwell Street
8. Scholar Way / East Bidwell Street
9. Power Center Drive / East Bidwell Street
10. Broadstone Parkway / East Bidwell Street
11. Empire Ranch Road / Broadstone Parkway
12. Oak Avenue Parkway / Haverhill Drive
13. Oak Avenue Parkway / Halidon Way
14. Folsom Boulevard / Iron Point Road
15. Prairie City Road / Iron Point Road
16. Grover Road / Iron Point Road
17. McAdoo Drive / Iron Point Road
18. Oak Avenue Parkway / Iron Point Road
19. Rowberry Drive / Iron Point Road
20. Broadstone Parkway / Iron Point Road
21. East Bidwell Street / Iron Point Road
22. Cavitt Road / Iron Point Road
23. Serpa Way / Iron Point Road
24. Empire Ranch Road / Iron Point Road
25. Prairie City Road / High School
26. East Bidwell Street / Placerville Road
27. Prairie City Road / White Rock Road
28. Scott Road (West) / White Rock Road
29. Scott Road (East) / White Rock Road
30. Placerville Road / White Rock Road
31. Empire Ranch Road / North Road (Project)
32. Prairie City Road / Easton Valley Parkway (Project)
33. Oak Avenue Parkway / Easton Valley Parkway (Project)
34. Rowberry Drive / Easton Valley Parkway (Project)
35. 1st Street / Easton Valley Parkway (Project)
36. 2nd Street / Easton Valley Parkway (Project)
37. 3rd Street / Easton Valley Parkway (Project)
38. Scott Road (East) / Easton Valley Parkway (Project)
39. Power Center Drive / Easton Valley Parkway (Project)
40. Placerville Road / Easton Valley Parkway (Project)
41. Hillside Drive / Easton Valley Parkway (Project)
42. Empire Ranch Road / Easton Valley Parkway (Project)
43. Prairie City Road / Middle Road (Project)
44. Oak Avenue Parkway / Middle Road (Project)
45. Scott Road (East) / Street "B" (Project)
46. East Road / Street "B" (Project)
47. Prairie City Road / Street "A" (Project)
48. Oak Avenue Parkway / Street "A" (Project)
49. West Road / Street "A" (Project)
50. Scott Road (East) / Street "A" (Project)
51. East Road / Street "A" (Project)
52. Placerville Road / Street "A" (Project)
53. Empire Ranch Road / Street "A" (Project)
54. Scott Road (East) / South Road (Project)
55. Oak Avenue Parkway / White Rock Road (Project)
56. Empire Ranch Road / White Rock Road (Project)

Sacramento County

1. Hazel Avenue / Gold Country Boulevard
2. Hazel Avenue / Folsom Boulevard
3. Grant Line Road / White Rock Road
4. Grant Line Road / Sunrise Boulevard
5. Hazel Avenue / Easton Valley Parkway (Cumulative)
6. Aerojet Road / Easton Valley Parkway (Cumulative)
7. Alabama Avenue / Easton Valley Parkway (Cumulative)
8. Glenborough Road / Easton Valley Parkway (Cumulative)

City of Rancho Cordova

1. Sunrise Boulevard / White Rock Road
2. Fitzgerald Road / White Rock Road
3. Sunrise Boulevard / Douglas Road
4. Grant Line Road / Douglas Road
5. Grant Line Road / Kiefer Road
6. Rancho Cordova Parkway / Easton Valley Parkway (Cumulative)
7. Rancho Cordova Parkway / White Rock Road (Cumulative)
8. International Drive / White Rock Road (Cumulative)
9. Rio Del Oro Parkway / White Rock Road (Cumulative)
10. Villagio Parkway / White Rock Road (Cumulative)
11. Sunrise Boulevard /International Drive (Cumulative)
12. Villagio Parkway / Americanos Road (Cumulative)
13. Villagio Parkway / Rancho Cordova Parkway (Cumulative)
14. Grant Line Road / Centennial Road
15. Rancho Cordova Parkway / Douglas Road (Cumulative)
16. Americanos Boulevard / Douglas Road (Cumulative)
17. Grant Line Road / Chrysanthy Boulevard
18. Grant Line Road / Rancho Cordova Parkway

El Dorado County

1. White Rock Road / Carson Crossing Road
2. White Rock Road / Stonebriar Drive
3. White Rock Road / Windfield Way
4. White Rock Road / Latrobe Road
5. White Rock Road / Valley View Parkway
6. El Dorado Hills Boulevard / Serrano Parkway
7. El Dorado Hills Boulevard / Saratoga Way
8. El Dorado Hills Boulevard / Park Drive
9. Latrobe Road / Town Center Boulevard

Caltrans

1. Hazel Avenue / Tributary - WB U.S. 50 ramps
2. Hazel Avenue / EB U.S. 50 ramps
3. Folsom Boulevard / WB U.S. 50 ramps
4. Folsom Boulevard / EB U.S. 50 ramps
5. Prairie City Road / WB U.S. 50 ramps
6. Prairie City Road / EB U.S. 50 ramps
7. East Bidwell Street / WB U.S. 50 ramps
8. East Bidwell Street / EB U.S. 50 ramps
9. El Dorado Hills Boulevard / WB U.S. 50 ramps
10. El Dorado Hills Boulevard / EB U.S. 50 ramps
11. Sunrise Boulevard / Jackson Highway (SR 16)
12. Grant Line Road / Jackson Highway (SR 16)
13. Oak Avenue Parkway / WB U.S. 50 ramps (Cumulative)
14. Oak Avenue Parkway / EB U.S. 50 ramps (Cumulative)
15. Empire Ranch Road / WB U.S. 50 ramps (Cumulative)
16. Empire Ranch Road / EB U.S. 50 ramps (Cumulative)
17. Silva Valley / WB U.S. 50 ramps (Cumulative)
18. Silva Valley / EB U.S. 50 ramps (Cumulative)

Table 3A.15-1
Locations of Detailed Traffic Analyses

Roadways

Sacramento County

1. Folsom Boulevard—Sunrise Boulevard to Mercantile Drive
2. Folsom Boulevard—Mercantile Drive to Hazel Avenue
3. Folsom Boulevard—Hazel Avenue to Aerojet Road
4. Folsom Boulevard—Aerojet Road to U.S. 50
5. Grant Line Road—White Rock Road to Centennial Road
6. Grant Line Road—Centennial Road to Douglas Road
7. Grant Line Road—Douglas Road to Keifer Boulevard
8. Grant Line Road—Keifer Boulevard to Jackson Road
9. Grant Line Road—Jackson Road to Sunrise Boulevard
10. Hazel Avenue—Greenback Lane to Madison Avenue
11. Hazel Avenue—Madison Avenue to Curragh Downs Drive
12. Hazel Avenue—Curragh Downs Drive to Gold Country Boulevard
13. Hazel Avenue—Gold Country Boulevard to U.S. 50
14. SR 16—Dillard Road to Murieta Parkway
15. SR 16—Grant Line Road to Dillard Road
16. Prairie City Road—U.S. 50 to Easton Valley Parkway
17. Prairie City Road—Easton Valley Parkway to White Rock Road
18. Scott Road—White Rock Road to Latrobe Road
19. Stonehouse Road—Latrobe Road to SR 16
20. Sunrise Boulevard—Jackson Road to Grant Line Road
21. White Rock Road—Fitzgerald Road (Villagio Parkway) to Grant Line Road
22. White Rock Road—Grant Line Road to Prairie City Road
23. White Rock Road—Prairie City Road to Scott Road (West)
24. White Rock Road—Scott Road (West) to Oak Avenue Parkway
25. White Rock Road—Oak Avenue Parkway to Scott Road (East)
26. White Rock Road—Scott Road (East) to Placerville Road
27. White Rock Road—Placerville Road to Empire Ranch Road
28. White Rock Road—Empire Ranch Road to Carson Crossing Road
29. Easton Valley Parkway—Hazel Avenue to Aerojet Road
30. Easton Valley Parkway—Aerojet Road to Alabama Avenue
31. Easton Valley Parkway—Alabama Avenue to Glenborough Road
32. Easton Valley Parkway—Glenborough Road to Oak Avenue Parkway
33. Empire Ranch Road—White Rock Road to Carson Crossing Road

City of Rancho Cordova

1. Douglas Road—Sunrise Boulevard to Grant Line Road
2. Grant Line Road—White Rock Road to Douglas Road
3. Grant Line Road—Douglas Road to Keifer Boulevard
4. Grant Line Road—Keifer Boulevard to Jackson Road
5. Sunrise Boulevard—U.S. 50 to Folsom Boulevard
6. Sunrise Boulevard—Folsom Boulevard to White Rock Road
7. Sunrise Boulevard—White Rock Road to Douglas Road
8. Sunrise Boulevard—Douglas Road to Keifer Boulevard
9. Sunrise Boulevard—Keifer Boulevard to SR 16
10. White Rock Road—Zinfandel Drive to Sunrise Boulevard
11. White Rock Road—Sunrise Boulevard to Fitzgerald Road
12. White Rock Road—Fitzgerald Road to Rancho Cordova Parkway
13. White Rock Road—Rancho Cordova Parkway to International Drive
14. White Rock Road—International Drive to Rio Del Oro Parkway
15. White Rock Road—Rio Del Oro Parkway to Villagio Parkway
16. SR 16—Sunrise Boulevard to Grant Line Road
17. International Drive—Sunrise Boulevard to Rancho Cordova Parkway
18. International Drive—Rancho Cordova Parkway to Americanos Boulevard
19. International Drive—Americanos Boulevard to White Rock Road

Freeway Segments

1. U.S. 50—Zinfandel Drive to Sunrise Boulevard
2. U.S. 50—Sunrise Boulevard to Rancho Cordova Parkway
3. U.S. 50—Rancho Cordova Parkway to Hazel Avenue
4. U.S. 50—Hazel Avenue to Folsom Boulevard
5. U.S. 50—Folsom Boulevard to Prairie City Road
6. U.S. 50—Prairie City Road to Oak Avenue Parkway
7. U.S. 50—Oak Avenue Parkway to East Bidwell Street—Scott Road
8. U.S. 50—East Bidwell Street—Scott Road to Empire Ranch Road
9. U.S. 50—Empire Ranch Road to El Dorado Hills Boulevard—Latrobe Road
10. U.S. 50—El Dorado Hills Boulevard—Latrobe Road to Silva Valley Road
11. U.S. 50—Silva Valley Road to Bass Lake Road

Interchanges

1. Hazel Avenue interchange at U.S. 50
2. Folsom Boulevard interchange at U.S. 50
3. Prairie City Road interchange at U.S. 50
4. Oak Avenue Parkway interchange at U.S. 50—build and cumulative scenarios
5. East Bidwell Street—Road interchange at U.S. 50
6. Empire Ranch Road interchange at U.S. 50—build and cumulative scenarios
7. El Dorado Hills Boulevard—Latrobe Road interchange at U.S. 50
8. Silva Valley Road interchange at U.S. 50—cumulative scenarios

Notes: SR = State Route; U.S. 50 = U.S. Highway 50

Source: Data provided by DKS Associates in 2006–2007

EXISTING ROADWAY NETWORK

Exhibit 3A.15-1 shows the surface roadways in the vicinity of the SPA and the number of lanes on each roadway. Intersection lane configurations and traffic control devices for the existing roadway network were obtained during a field visit to the project study area in fall 2007. The lane configurations are shown in Exhibits 3A.15-2 through 3A.15-6. A brief description of each of the key roadways in the project study area is provided below.

U.S. Highway 50

U.S. Highway 50 (U.S. 50) is an east-west freeway that extends from the Interstate 80 (I-80) junction in West Sacramento to Canal Street in the City of Placerville, where it continues as a highway across the Sierra Nevada to South Lake Tahoe and Nevada. West of Sunrise Boulevard it is an eight lane freeway. Between Sunrise Boulevard and Folsom Boulevard it has six mixed flow lanes and two High Occupancy Vehicle (HOV) lanes (carpool lanes). Between Folsom Boulevard and El Dorado Hills Boulevard U.S. 50 has four mixed flow lanes and two HOV lanes. East of El Dorado Hills Boulevard it has four mixed flow lanes.

Prairie City Road

Prairie City Road is a north-south arterial that extends from Blue Ravine Road (north of Blue Ravine Road it is called Sibley Street) to White Rock Road. It is a five lane urban arterial road between Blue Ravine Road and Iron Point Road. Prairie City Road is a six lane urban arterial road between Iron Point Road and U.S. 50. It is a two lane rural road between U.S. 50 and White Rock Road.

Scott Road

Scott Road is a north-south two lane rural road that extends from U.S. 50 at East Bidwell Street to White Rock Road. Another segment of Scott Road extends southerly from White Rock Road to Latrobe Road.

Placerville Road

Placerville Road is a two lane north-south rural road that extends from East Bidwell Street to White Rock Road, where it continues as Payen Road.

White Rock Road

White Rock Road is an east-west arterial that extends from International Drive in Rancho Cordova to Silva Valley Road in El Dorado County. It is a two lane rural road between Sunrise Boulevard in Rancho Cordova and Carson Crossing Road in El Dorado County. It is a two lane urban arterial road between Carson Crossing Road and Silva Valley Road, with a four lane section between Manchester Drive and Latrobe Road.

Blue Ravine Road

Blue Ravine Road is a southwest-northeast arterial that extends from Folsom Boulevard to East Natoma Street, where it becomes Green Valley Road. It is a six lane arterial road between Folsom Boulevard and Prairie City Road. It is a four lane urban arterial road between Prairie City Road and East Natoma Street.

East Bidwell Street

East Bidwell Street is a northwest-southeast arterial that extends from Riley Street to U.S. 50, where it becomes Scott Road. It is a four lane urban arterial road between Riley Street and Oak Avenue Parkway. It is a five lane urban arterial road between Oak Avenue Parkway and Clarksville Road – Scholar Road. It is a six lane arterial road between Clarksville Road – Scholar Road and U.S. 50.

Folsom Boulevard

Folsom Boulevard is a four lane east-west arterial road that extends from the City of Sacramento to Greenback Lane, where it becomes Folsom Auburn Road. In the City of Folsom, between U.S. 50 and Greenback Lane, it has a generally north-south alignment.

Oak Avenue Parkway

Oak Avenue Parkway is a north-south arterial that extends from Willow Creek Drive to Iron Point Road. It is a four lane urban arterial road between Willow Creek Drive and Blue Ravine Road. It is a six lane urban arterial road between Blue Ravine Road and Riley Street. It is a four lane urban arterial road between Riley Street and Iron Point Road.

Broadstone Parkway

Broadstone Parkway is a four lane east-west arterial that extends from Iron Point Road to Empire Ranch Road. It has six through lanes at the East Bidwell Street intersection.

Empire Ranch Road

Empire Ranch Road is a four lane north-south arterial that extends from East Natoma Street (it continues north as Sophia Parkway is El Dorado County) to Iron Point Road.

Iron Point Road

Iron Point Road is an east-west arterial that extends from Folsom Boulevard to the El Dorado County Line. It is a six lane urban arterial road between Folsom Boulevard and Black Diamond Road. It is a four lane urban arterial road between Black Diamond Road and Prairie City Road. Iron Point Road is a six lane urban arterial road between Prairie City Road and Buckingham Way. It is a four lane urban arterial road between Buckingham Way and Broadstone Parkway. Iron Point Road is a six lane urban arterial road between Broadstone Parkway and Carpenter Hill Road. It is a four lane urban arterial road between Carpenter Hill Road and the El Dorado County Line.

Sunrise Boulevard

Sunrise Boulevard is a north-south arterial that extends from I-80 in Placer County to Grant Line Road. It is a six lane urban arterial road from north of Greenback Lane to Douglas Road. It is a five lane urban arterial road between Douglas Road and Kiefer Road. It is a two lane rural road between Douglas Road and Grant Line Road.

Hazel Boulevard

Hazel Boulevard is a north-south arterial that extends from the Placer county line (where it continues north as Sierra College Boulevard) to Folsom Boulevard. It is a four lane urban arterial road from Sierra College Boulevard to Gold Country Boulevard. It is a six lane urban arterial road between Gold Country Boulevard and U.S. 50. It is a four lane urban arterial road between U.S. 50 and Folsom Boulevard.

Grant Line Road

Grant Line Road is a southwest-northeast two lane rural road that extends from State Route 99 freeway in Elk Grove to White Rock Road.

El Dorado Hills Boulevard

El Dorado Hills Boulevard is an El Dorado County north-south arterial that extends from Green Valley Road, where it continues as Salmon Falls Road, to U.S. 50, where it continues as Latrobe Road. It is a six lane urban arterial road between Serrano Parkway and U.S. 50.

Latrobe Road

Latrobe Road is an El Dorado County north-south arterial that extends from U.S. 50, where it continues as El Dorado Hills Boulevard, to State Route 16. It is a six lane urban arterial road between U.S. 50 and White Rock Road. Latrobe Road is a four lane urban arterial road between White Rock Road and Suncast Lane. It is a two lane urban road from Suncast Lane to Investment Boulevard and a two lane rural road south of Investment Boulevard.

EXISTING TRAFFIC VOLUMES

DKS Associates conducted traffic counts in June 2006 and in November 2007, to determine a.m. and p.m. peak-period intersection turning volumes in the project study area. Average daily traffic (ADT) counts collected by Sacramento County between 2005 and 2007 were used. Freeway traffic count data was gathered from previous studies, including the Easton Glenborough Specific Plan EIR and the U.S. 50 Auxiliary Lanes Project Study Report (PSR). Traffic counts were gathered for all roadway segments and intersections in the project study area. The existing intersection volumes are shown in Exhibits 3A.15-2 through 3A.15-6. ADT volumes for existing roadways are presented in Exhibit 3A.15-7. Freeway volumes are illustrated in Exhibit 3A.15-8.

EXISTING TRANSIT SERVICE

Sacramento Regional Transit (RT) operates bus and light-rail transit (LRT) service in Sacramento County. The City of Folsom provides local bus transit within the City. El Dorado County Transit provides commuter bus transit. The existing transit services near the SPA are described below and are shown in Exhibit 3A.15-9.

Fixed-Route Bus Service

There is no regular fixed route bus service in the project area. Fixed-route bus service is provided north of the SPA. Folsom Stage Line Route 10 provides service along Iron Point Road between Folsom Boulevard and East Bidwell Street. El Dorado County Transit's Iron Point Connector operates along U.S. 50 and Iron Point Road during weekday peak periods only. The following describes these individual routes in greater detail.

- **Folsom Stage Line Route 10** provides service between the intersection of Main Street and Madison Avenue, and the Iron Point Road light-rail station. Weekday service is provided between 6:41 a.m. and 9:08 p.m. on a 60-minute headway. ("Headway" is the amount of time between buses. For example, if a bus on the same route arrives at a given stop every 60 minutes, it is operating on a 60-minute headway.) No Saturday, Sunday or holiday service is provided.

- **El Dorado County Transit's Iron Point Connector** provides fixed-route service between Placerville and the Iron Point Road light-rail station on weekdays only. The route operates between 5:40 a.m. and 7:27 p.m. on a 120-minute headway. No Saturday, Sunday or holiday service is provided.

Light-Rail Transit Service

LRT service is provided from downtown Sacramento along the Folsom Boulevard / U.S. 50 corridor to the Historic Folsom light-rail station, with stops at Glenn Drive, Iron Point Road, Hazel Avenue and Sunrise Boulevard in the project vicinity. During peak periods, service runs every half hour east of the Sunrise Boulevard

station and every 15 minutes west of the Sunrise Boulevard station. The trains run from 5:00 AM to 7:00 PM east of the Sunrise Boulevard station and 5:00 AM to 12:00 AM west of the Sunrise Boulevard station.

EXISTING BICYCLE AND PEDESTRIAN SYSTEM

There are no existing bicycle or pedestrian facilities in the project area. There is a sidewalk on the south side of White Rock Road just east of the El Dorado County line. All City of Folsom roadways in the study have sidewalks, and all City of Folsom major streets have bike lanes.

EXISTING TRAFFIC CONDITIONS

Existing operations of roadways, intersections, freeway facilities, and bicycle/pedestrian facilities in the project study area are discussed below.

Analysis Methodology

The operations of roadway facilities are described in terms of level of service (LOS). LOS is a qualitative description of traffic flow based on factors such as speed, travel time, delay, freedom to maneuver, volume, density, and capacity. Six levels are defined, from LOS A, as the best operating conditions, to LOS F, or the worst operating conditions. LOS E represents "at-capacity" operations. When volumes exceed capacity, stop-and-go conditions result and operations are designated as LOS F.

Level of Service Standards

For roadways within the City of Folsom's existing boundaries (north of U.S. 50), LOS C is considered the minimum acceptable operating condition. For roadways within the project boundaries (south of U.S. 50), LOS D conditions can be considered acceptable if improvements required to meet LOS C exceeds the City's "normally accepted maximum" improvements.

For roadways under the jurisdiction of Sacramento County, LOS E is considered the minimum acceptable operating condition within the Urban Service Area. Outside the Urban Service Area, LOS D is considered the minimum acceptable operating condition.

For roadways under the jurisdiction of the City of Rancho Cordova, LOS D is considered the minimum acceptable operating condition.

For roadways under the jurisdiction of El Dorado County, LOS E is considered the minimum acceptable operating condition.

The standards for Caltrans' facilities in the study area are detailed in the U.S. 50 Corridor System Management Plan (CSMP) and the SR 16 Route Concept Report. The 20-Year Concept LOS for U.S. 50 in the study area is LOS F, because improvements necessary to improve the LOS to E are not feasible due to environmental, right-of-way, financial, and other constraints. For SR 16, LOS E is considered the minimum acceptable operating condition.

Signalized Intersections

Signalized intersections in the City of Folsom and in El Dorado County were analyzed using the methodology contained in Chapter 16 of the *Highway Capacity Manual* (Transportation Research Board 2000) consistent with the El Dorado County Guidelines. The LOS rating is based on the average control delay expressed in seconds per vehicle, as shown in Table 3A.15-2.

Table 3A.15-2
Definitions of Intersection Levels of Service

Level of Service	Description	Unsignalized Intersection Control Delay (sec/veh)	Signalized Intersection Control Delay (sec/veh)	Signalized Intersection Volume-to-Capacity Ratio
A	Represents free flow. Individual users are virtually unaffected by others in the traffic stream.	≤ 10.0	≤ 10.0	≤ 0.60
B	Stable flow, but the presence of other users in the traffic stream begins to be noticeable.	10.1—15.0	10.1—20.0	0.61—0.70
C	Stable flow, but the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream.	15.1—25.0	20.1—35.0	0.71—0.80
D	Represents high-density, but stable flow.	25.1—35.0	35.1—55.0	0.81—0.90
E	Represents operating conditions at or near the capacity level.	35.1—50.0	55.1—80.0	0.91—1.00
F	Represents forced or breakdown flow.	> 50.0	> 80.0	> 1.00

Note: sec/veh = seconds per vehicle
Sources: Transportation Research Board 1980, 2000

Signalized intersections in Sacramento County and in the City of Rancho Cordova were analyzed using the methodology contained in *Interim Materials on Highway Capacity* (Circular 212) (Transportation Research Board 1980), consistent with the Sacramento County Guidelines. This methodology determines the intersection LOS by comparing the critical volume to capacity (V/C) ratio at the intersection to the thresholds shown in last column of Table 3A.15-2. Because the County Guidelines specify higher capacities (based on field measurements) than those originally published in Circular 212, the capacities at signalized intersections were increased as follows:

- Four or more critical-phase operations: from 1,375 to 1,500 vehicles per lane per hour
- Three critical-phase operations: from 1,425 to 1,550 vehicles per lane per hour
- Two critical-phase operations: from 1,500 to 1,650 vehicles per lane per hour

Unsignalized (Stop-Controlled) Intersections

For unsignalized (four-way stop-controlled and side-street stop-controlled) intersections, the LOS analysis was conducted using the methodology contained in Chapter 17 of the *Highway Capacity Manual* (Transportation Research Board 2000). The LOS rating is based on the control delay expressed in seconds per vehicle. At two-way or side-street stop-controlled intersections, LOS is calculated for the stopped movements (worst movement reported and evaluated), not for the intersection as a whole. For approaches composed of a single lane, the control delay is computed as the average of all movements in that lane. At all-way stop-controlled intersections, LOS is based on the average delay experienced on all approaches. Table 3A.15-2 summarizes the relationship between delay and LOS for unsignalized intersections.

Roadway Segments

Roadway segments were analyzed by comparing the ADT volume to daily volume thresholds. Table 3A.15-3 displays the daily volume thresholds for various facility types. These thresholds were used as guidelines to determine the need for new or upgraded facilities. In general, analysis of intersection operations provides a more realistic assessment of traffic conditions on a road than analysis of roadway segments.

Table 3A.15-3
Daily Volume Thresholds for Roadway Segments[1]

Facility Type	Number of Lanes	Daily Volume Threshold (Level of Service)				
		LOS A	LOS B	LOS C	LOS D	LOS E
Residential	2	600	1,200	2,000	3,000	4,500
Residential local road with frontage	2	1,600	3,200	4,800	6,400	8,000
Residential local road without frontage	2	6,000	7,000	8,000	9,000	10,000
Secondary road, low access control	2	9,000	10,000	12,000	13,500	15,000
	4	18,000	21,000	24,000	27,000	30,000
	6	27,000	31,500	36,000	40,500	45,000
Secondary road, moderate access control	2	10,800	12,600	14,400	16,200	18,000
	4	21,600	25,200	28,800	32,400	36,000
	6	32,400	37,800	43,200	48,600	54,000
Secondary road, high access control	2	12,000	14,000	16,000	18,000	20,000
	4	24,000	28,000	32,000	36,000	40,000
	6	36,000	42,000	48,000	54,000	60,000
Rural, two-lane highway	2	2,400	4,800	7,900	13,500	22,900
Rural, two-lane road, paved shoulders	2	2,200	4,300	7,100	12,200	20,000
Rural, two-lane road, no shoulders	2	1,800	3,600	5,900	10,100	17,000
Expressway[2]	6	24,300	39,720	56,700	72,900	81,000

Note: LOS = level of service

[1] County of Sacramento General Plan Update DEIR, 2009.

[2] Based on capacities in the Rancho Cordova's General Plan EIR.

Source: Data provided by DKS Associates in 2009.

Freeway Mainline Segments

A freeway mainline segment analysis was conducted based on a regular lane capacity of 2,200 vehicles per hour per lane and a calculated auxiliary lane capacity. This methodology was chosen because it is the analysis methodology typically used to evaluate development impacts to state freeways within the region, and is based on values calibrated to match observations by Caltrans. The freeway mainline capacity has been utilized in various studies in the U.S. 50 Corridor, including the U.S. 50 Major Investment Study (1997). The auxiliary lane capacity for each individual auxiliary lane was calculated based on the length and weaving volume using the methodology from the Traffic Operations Report for U.S. 50 Auxiliary Lane Project (2007). The process in that study was based on the weaving analysis in Chapter 24 of the Highway Capacity Manual (HCM), modified to estimate capacity of auxiliary lanes over 2,500 feet. Table 3A.15-4 summarizes the relationship between volume to capacity ratio and LOS for freeway mainline segments.

Freeway Ramp Merge, Diverge, and Weave Analysis

Freeway ramp junctions (merge / diverge) and weaving area analyses were conducted at area interchanges using the 2000 Highway Capacity Software package. The software is consistent with the methodologies contained in Chapters 24 and 25 of the *Highway Capacity Manual* (Transportation Research Board 2000). This methodology was chosen because it is the analysis methodology typically used by Caltrans for analysis of freeway-ramp merge, diverge, and weave maneuvers and because it correlates the LOS to the expected density of vehicles in passenger cars per mile per lane. Table 3A.15-5 summarizes the relationship between density and LOS for freeway ramp junctions and weaving areas.

Table 3A.15-4 Definitions of Freeway Mainline Segment Levels of Service	
Level of Service	Volume/Capacity[1]
A	< 0.32
B	> 0.32 and < 0.53
C	> 0.53 and < 0.74
D	> 0.74 and < 0.90
E	> 0.90 and < 1.00
F	> 1.00
Note: Volume/Capacity = Volume to Capacity ratio Source: Transportation Research Board,2000	

Table 3A.15-5 Definitions of Freeway Ramp Merge / Diverge and Weaving Levels of Service		
Level of Service	Merge / Diverge Density (pc/mi/ln)[1]	Freeway Weaving Segment Density (pc/mi/ln)[1]
A	≤ 10.0	≤ 10.0
B	> 10.0 – 20.0	> 10.0 – 20.0
C	> 20.0 – 28.0	> 20.0 – 28.0
D	> 28.0 – 35.0	> 28.0 – 35.0
E	> 35.0	> 35.0
F	Demand exceeds capacity	Demand exceeds capacity
Note: pc/mi/ln = passenger cars per mile per lane Source: Transportation Research Board,2000		

City of Folsom

Study Intersections

The existing peak-hour traffic volumes, traffic control, and intersection lane configurations shown in Exhibit 3A.15-2 were used to calculate LOS at the study intersections. Table 3A.15-6 summarizes intersection LOS under existing conditions in the City of Folsom.

The following intersections operate at an unacceptable LOS D, LOS E or LOS F during both the a.m. and p.m. peak traffic hours:

- Folsom Boulevard / Blue Ravine Road
- Prairie City Road / White Rock Road

The following intersections operate at an unacceptable LOS D, LOS E or LOS F during only the a.m. or p.m. peak traffic hour:

- Sibley Street / Blue Ravine Road
- East Bidwell Street / Iron Point Road

Table 3A.15-6
Intersection Levels of Service — Existing Conditions – City of Folsom

Intersection	Control	A.M. Peak Hour		P.M. Peak Hour	
		Delay[1]	LOS	Delay	LOS
1. Folsom Boulevard / Blue Ravine Road	Signalized	**35.6**	**D**	**74.7**	**E**
2. Sibly Street / Blue Ravine Road	Signalized	**41.4**	**D**	28.5	C
3. Oak Avenue Parkway / Blue Ravine Road	Signalized	25.2	C	28.4	C
4. Empire Ranch Road / Natoma Street	All-way stop	9.7	A	10.3	B
5. Oak Avenue Parkway / Riley Street	Signalized	24.8	C	26.2	C
6. Oak Avenue Parkway / East Bidwell Street	Signalized	24.6	C	29.5	C
7. Nesmith Court / East Bidwell Street	Signalized	12.3	B	12.6	B
8. Scholar Way / East Bidwell Street	Signalized	14.1	B	11.1	B
9. Power Center Drive / East Bidwell Street	Signalized	11.6	B	21.5	C
10. Broadstone Parkway / East Bidwell Street	Signalized	19.7	B	24.1	C
11. Empire Ranch Road / Broadstone Parkway	All-way stop	9.2	A	9.1	A
12. Oak Avenue Parkway / Haverhill Drive	Signalized	22.8	C	16.1	B
13. Oak Avenue Parkway / Halidon Way	Signalized	19.2	B	16.1	B
14. Folsom Boulevard / Iron Point Road	Signalized	27.6	C	19.2	B
15. Prairie City Road / Iron Point Road	Signalized	29.1	C	33.6	C
16. Grover Road / Iron Point Road	Signalized	20.2	C	9.0	A
17. McAdoo Drive / Iron Point Road	Signalized	21.3	C	13.8	B
18. Oak Avenue Parkway / Iron Point Road	Signalized	29.8	C	13.4	B
19. Rowberry Drive / Iron Point Road	Signalized	14.5	B	14.7	B
20. Broadstone Parkway / Iron Point Road	Signalized	22.2	C	20.2	C
21. East Bidwell Street / Iron Point Road	Signalized	31.7	C	**45.0**	**D**
22. Cavitt Road / Iron Point Road	Signalized	16.2	B	19.0	B
23. Serpa Way / Iron Point Road	Signalized	19.9	A	25.2	A
24. Empire Ranch Road / Iron Point Road	All-way stop	9.3	A	10.7	B
25. Prairie City Road / High School	Signalized	21.8	C	16.0	B
26. East Bidwell Street / Placerville Drive	Side-street stop	0.0	A	0.0	A
27. Prairie City Road / White Rock Road	All-way stop	**51.4**	**F**	**99.6**	**F**
28. Scott Road (West) / White Rock Road	Side-street stop	15.0	B	18.0	C
29. Scott Road (East) / White Rock Road	All-way stop	17.1	C	23.9	C
30. Placerville Road / White Rock Road	Side-street stop	11.9	B	16.6	C

Notes:
LOS = level of service
[1] Worst-case delay reported for unsignalized, side-street-stop intersections; average intersection delay reported for signalized and all-way-stop intersections. Delays are reported in seconds per vehicle.
Bold indicate sdeficiency.
Source: Data provided by DKS Associates in 2009

Sacramento County

Study Intersections

Table 3A.15-7 summarizes intersection LOS under existing conditions in Sacramento County.

The following intersections operate at an unacceptable LOS F during only the p.m. peak traffic hour:

- Hazel Avenue / Gold Country Boulevard
- Grant Line Road / White Rock Road

Table 3A.15-7
Intersection Levels of Service — Existing Conditions – Sacramento County

Intersection	Control	A.M. Peak Hour		P.M. Peak Hour	
		V/C[1] or Delay[2]	LOS	V/C or Delay	LOS
1. Hazel Avenue / Gold Country Boulevard	Signalized	0.69	B	**1.01**	**F**
2. Hazel Avenue / Folsom Boulevard	Signalized	0.61	B	0.87	D
3. Grant Line Road / White Rock Road	Side-street stop	43.5	E	**355.5**	**F**
4. Grant Line Road / Sunrise Boulevard	Signalized	0.80	D	0.79	C

Notes:
LOS = level of service; V/C = volume-to-capacity
[1] V/C ratio is shown for signalized intersections.
[2] Worst-case delay reported for unsignalized, side-street-stop intersections; average intersection delay reported for all-way-stop intersections. Delays are reported in seconds per vehicle.
Bold indicates deficiency.
Source: Data provided by DKS Associates in 2009

Roadway Segments

Table 3A.15-8 presents the existing conditions analysis for Sacramento County roadway segments in the project study area.

The following roadway segments operate at an unacceptable LOS F (or LOS E outside the Urban Limit Line):

- Hazel Avenue between Greenback Lane and Gold Country Boulevard
- Jackson Road between Grant Line Road and Dillard Road (outside the Urban Limit Line)

City of Rancho Cordova

Study Intersections

Table 3A.15-9 summarizes intersection LOS under existing conditions in the City of Rancho Cordova.

All of the intersections operate at an acceptable LOS D or better during both the a.m. and p.m. peak traffic hour.

Table 3A.15-8
Roadway Levels of Service — Existing Conditions – Sacramento County

Roadway Segment	Existing Conditions			
	Lanes	Volume	V/C	LOS
1. Folsom Boulevard—Sunrise Boulevard to Mercantile Drive	4	19,900	0.55	A
2. Folsom Boulevard—Mercantile Drive to Hazel Avenue	4	14,900	0.41	A
3. Folsom Boulevard—Hazel Avenue to Aerojet Road	4	13,700	0.38	A
4. Folsom Boulevard—Aerojet Road to U.S. 50	4	17,600	0.49	A
5. Grant Line Road—White Rock Road to Douglas Road	2	9,600	0.56	D
6. Grant Line Road—Douglas Road to Keifer Boulevard	2	8,800	0.38	D
7. Grant Line Road—Keifer Boulevard to Jackson Highway (SR 16)	2	7,700	0.34	C
8. Grant Line Road—Jackson Highway (SR 16) to Sunrise Boulevard	2	6,300	0.28	C
9. Hazel Avenue—Greenback Lane to Madison Avenue	4	38,300	**1.06**	**F**
10. Hazel Avenue—Madison Avenue to Curragh Downs Drive	4	46,300	**1.29**	**F**
11. Hazel Avenue—Curragh Downs Drive to Gold Country Boulevard	4	49,900	**1.25**	**F**
12. Hazel Avenue—Gold Country Boulevard to U.S. 50 westbound ramp	6	53,900	0.90	D
13. Jackson Highway (SR 16)—Grant Line Road to Dillard Road	2	14,300	0.62	E
14. Jackson highway (SR 16)—Dillard Road to Stone House Road	2	12,100	0.53	D
15. Prairie City Road—U.S. 50 eastbound ramp to Easton Valley Parkway	2	5,900	0.35	D
16. Prairie City Road—Easton Valley Parkway to White Rock Road	2	5,900	0.35	D
17. Scott Road (West)—White Rock Road to Latrobe Road	2	2,100	0.12	B
18. Stonehouse Road—Latrobe Road to Jackson Highway (SR 16)	2	1,800	0.11	B
19. Sunrise Boulevard—Jackson Highway to Grant Line Road	2	13,300	0.58	D
20. White Rock Road—Fitzgerald Road to Grant Line Road	2	4,100	0.24	C
21. White Rock Road—Grant Line Road to Prairie City Road	2	11,500	0.68	E
22. White Rock Road—Prairie City Road to Scott Road (West)	2	7,600	0.45	D
23. White Rock Road—Scott Road (West) to Oak Avenue Parkway	2	7,600	0.45	D
24. White Rock Road—Oak Avenue Parkway to Scott Road (East)	2	7,600	0.45	D
25. White Rock Road—Scott Road (East) to Placerville Road	2	5,700	0.34	C
26. White Rock Road—Placerville Road to Empire Ranch Road	2	6,800	0.40	D
27. White Rock Road—Empire Ranch Road to Carson Crossing Road	2	6,800	0.40	D

Notes: LOS = level of service; SR = State Route; U.S. 50 = U.S. Highway 50; V/C = volume-to-capacity
Bold indicates deficiency.
Source: Data provided by DKS Associates in 2009

Table 3A.15-9
Intersection Levels of Service — Existing Conditions – City of Rancho Cordova

Intersection	Control	A.M. Peak Hour		P.M. Peak Hour	
		V/C[1] or Delay[2]	LOS	V/C or Delay	LOS
1. Sunrise Boulevard / White Rock Road	Signalized	0.65	B	0.71	C
2. Fitzgerald Road / White Rock Road	All-way stop	14.7	B	16.4	C
3. Sunrise Boulevard / Douglas Road	Signalized	0.78	C	0.68	B
4. Grant Line Road / Douglas Road	Side-street stop	23.8	C	18.2	C
5. Grant Line Road / Kiefer Boulevard	All-way stop	11.7	B	14.4	B

Notes:
LOS = level of service; V/C = volume-to-capacity
[1] V/C ratio is shown for signalized intersections.
[2] Worst-case delay reported for unsignalized, side-street-stop intersections; average intersection delay reported for all-way-stop intersections. Both delays are reported in seconds per vehicle.
Bold indicates deficiency.
Source: Data provided by DKS Associates in 2009

Roadway Segments

Table 3A.15-10 presents the existing conditions analysis for City of Rancho Cordova roadway segments in the project study area.

The following roadway segments operate at an unacceptable LOS E or LOS F:

- Sunrise Boulevard between the U.S. 50 eastbound ramps and White Rock Road
- Sunrise Boulevard between the Kiefer Road and State Route 16

Table 3A.15-10
Roadway Levels of Service — Existing Conditions – City of Rancho Cordova

Roadway Segment	Existing Conditions			
	Lanes	Volume	V/C	LOS
1. Douglas Road—Sunrise Boulevard to Grant Line Road	2	2,300	0.13	A
2. Sunrise Boulevard—U.S. 50 eastbound ramps to Folsom Boulevard	6	61,500	**1.14**	**F**
3. Sunrise Boulevard—Folsom Boulevard to White Rock Road	6	53,700	**0.99**	**E**
4. Sunrise Boulevard—White Rock Road to Douglas Road	4	25,100	0.70	B
5. Sunrise Boulevard—Douglas Road to Kiefer Boulevard	4	20,000	0.56	A
6. Sunrise Boulevard—Kiefer Boulevard to SR 16	2	20,000	**1.11**	**F**
7. White Rock Road—Zinfandel Drive to Sunrise Boulevard	6	21,100	0.39	A
8. White Rock Road—Sunrise Boulevard to Fitzgerald Road	4	6,000	0.33	A
9. White Rock Road—Fitzgerald Road to Grant Line Road	2	4,100	0.24	C

Notes:
LOS = level of service; SR = State Route; U.S. 50 = U.S. Highway 50; V/C = volume-to-capacity
Bold indicates deficiency.
Source: Data provided by DKS Associates in 2009

El Dorado County

Study Intersections

Table 3A.15-11 summarizes intersection LOS under existing conditions in El Dorado County.

The following intersection operates at an unacceptable LOS F during only the p.m. peak traffic hour:

- White Rock Road / Windfield Way

Table 3A.15-11
Intersection Levels of Service — Existing Conditions – El Dorado County

Intersection	Control	A.M. Peak Hour		P.M. Peak Hour	
		Delay[1]	LOS	Delay	LOS
1. White Rock Road / Carson Crossing Road	Side-street stop	13.7	B	16.5	C
2. White Rock Road / Stonebriar Drive	Signalized	20.6	C	14.8	B
3. White Rock Road / Windfield Way	Side-street stop	43.9	E	**73.1**	**F**
4. White Rock Road / Latrobe Road	Signalized	22.7	C	31.8	C
5. White Rock Road / Valley View Parkway	Signalized	16.6	B	23.5	C
6. El Dorado Hills Blvd / Serrano Parkway	Signalized	32.1	C	25.4	C
7. El Dorado Hills Blvd / Saratoga Way	Signalized	21.6	C	53.3	D
8. El Dorado Hills Blvd / Park Drive	Signalized	11.6	B	13.1	B
9. Latrobe Road / Town Center Boulevard	Signalized	14.6	B	40.1	D

Notes:
LOS = level of service; U.S. 50 = U.S. Highway 50
[1] Worst-case delay reported for unsignalized, side-street-stop intersections; average intersection delay reported for signalized and all-way-stop intersections. Both delays are reported in seconds per vehicle.
Bold indicates deficiency.
Source: Data provided by DKS Associates in 2009

Caltrans Facilities

Study Intersections

Table 3A.15-12 summarizes intersection LOS under existing conditions on Caltrans facilities.

The following intersection operates at an unacceptable LOS F during both the a.m. and p.m. peak traffic hours:

- Hazel Avenue / Tributary - WB U.S. 50 ramps

The following intersection operates at an unacceptable LOS F during only the a.m. peak traffic hour:

- Grant Line Road / Jackson Highway (State Route 16)

The following intersection operates at an unacceptable LOS F during only the p.m. peak traffic hour:

- Hazel Avenue / EB U.S. 50 ramps

Table 3A.15-12
Intersection Levels of Service — Existing Conditions – Caltrans

Intersection	Control	A.M. Peak Hour		P.M. Peak Hour	
		Delay[1]	LOS	Delay	LOS
1. Hazel Avenue / Tributary - WB U.S. 50 ramps	Signalized	**>80.0**[2]	**F**	**>80.0**[2]	**F**
2. Hazel Avenue / EB U.S. 50 ramps	Signalized	21.6	C	**>80.0**[2]	**F**
3. Folsom Boulevard / WB U.S. 50 ramps	Signalized	8.8	A	9.0	A
4. Folsom Boulevard / EB U.S. 50 ramps	Signalized	21.7	C	34.2	C
5. Prairie City Road / WB U.S. 50 ramps	Signalized	20.7	C	12.8	B
6. Prairie City Road / EB U.S. 50 ramps	Signalized	17.7	B	17.3	B
7. East Bidwell Street / WB U.S. 50 ramps	Signalized	19.8	B	24.2	C
8. East Bidwell Street / EB U.S. 50 ramps	Signalized	18.0	B	17.4	B
9. El Dorado Hills Blvd / WB U.S. 50 ramps	Signalized	42.9	D	25.1	C
10. El Dorado Hills Blvd / EB U.S. 50 ramps	Signalized	35.7	D	33.3	C
11. Sunrise Boulevard / Jackson Highway	Signalized	58.4	E	39.8	D
12. Grant Line Road / Jackson Highway	Signalized	**87.1**	**F**	76.0	E

Notes:
LOS = level of service; SR = State Route; U.S. 50 = U.S. Highway 50;
[1] Average intersection delay reported in seconds per vehicle.
[2] Operations are worse at these ramp terminal intersections than reflected in the LOS analysis. LOS is based on vehicles that get through the intersections. Because of upstream and downstream congestion, fewer cars get through the intersection, which yields a better LOS.
Bold indicates deficiency.
Source: Data provided by DKS Associates in 2009

Analyses of Freeway Mainline Segments

The results of the analyses of freeway mainline segments are summarized in Table 3A.15-13.

The following mainline freeway segments operate at an unacceptable LOS F:

- Eastbound U.S. 50
  - Folsom Boulevard to Prairie City Road—p.m. peak hour only
  - Prairie City Road to E. Bidwell Street–Scott Road—p.m. peak hour only
  - El Dorado Hills Boulevard–Latrobe Road to Bass Lake Grade—p.m. peak hour only

- Westbound U.S. 50
  - El Dorado Hills Boulevard to E. Bidwell Street—a.m. peak hour only
  - Prairie City Road to Folsom Boulevard—a.m. peak hour only
  - Hazel Avenue to Sunrise Boulevard—a.m. peak hour only
-

Analyses of Freeway-Ramp Merge, Diverge, and Weave Maneuvers

The results of the analyses of freeway-ramp merge, diverge, and weave maneuvers are summarized in Table 3A.15-14.

The merge, diverge, and weave maneuvers for the following on- and off-ramps are operating at LOS F, where demand exceeds capacity based on *Highway Capacity Manual* (HCM) methodology:

- Eastbound U.S. 50
  - Hazel Avenue direct off-ramp — p.m. peak hour only
  - Folsom Boulevard on-ramp — p.m. peak hour only
  - Prairie City Road off-ramp — p.m. peak hour only
  - Prairie City Road flyover on-ramp — p.m. peak hour only
  - E. Bidwell Street - Scott Road direct off-ramp — p.m. peak hour only
  - El Dorado Hills Boulevard - Latrobe Road on-ramp — p.m. peak hour only

- Westbound U.S. 50
  - El Dorado Hills Boulevard - Latrobe Road off-ramp — a.m. peak hour only
  - El Dorado Hills Boulevard - Latrobe Road on-ramp— a.m. peak hour only
  - E. Bidwell Street - Scott Road direct off-ramp— a.m. peak hour only
  - E. Bidwell Street - Scott Road direct on-ramp— a.m. peak hour only
  - Prairie City Road direct off-ramp— a.m. peak hour only
  - Folsom Boulevard off-ramp— a.m. peak hour only
  - Hazel Avenue direct on-ramp— a.m. peak hour only

Table 3A.15-13
Levels of Service for Freeway Mainline Segments — Existing Conditions

Segment	A.M. Peak		P.M. Peak	
	V/C[1]	LOS	V/C[1]	LOS
Eastbound U.S. 50				
Zinfandel Drive to Sunrise Boulevard	0.72	C	0.99	E
Sunrise Boulevard to Hazel Avenue	0.64	C	0.94	E
Hazel Avenue to Folsom Boulevard	0.72	C	0.96	E
Folsom Boulevard to Prairie City Road	0.67	C	**1.12**	**F**
Prairie City Road to E. Bidwell Street—Scott Road	0.66	C	**1.04**	**F**
E. Bidwell Street—Scott Road to El Dorado Hills Boulevard—Latrobe Road	0.50	B	0.80	D
El Dorado Hills Boulevard—Latrobe Road to Bass Lake Grade	0.63	C	**1.06**	**F**
Bass Lake Grade to Bass Lake Road	0.46	B	0.78	D
Westbound U.S. 50				
Bass Lake Road to El Dorado Hills Boulevard—Latrobe Road	0.94	E	0.49	B
El Dorado Hills Boulevard—Latrobe Road to E. Bidwell Street—Scott Road	**1.04**	**F**	0.61	C
E. Bidwell Street—Scott Road to Prairie City Road	0.92	E	0.57	C
Prairie City Road to Folsom Boulevard	**1.03**	**F**	0.73	C
Folsom Boulevard to Hazel Avenue	0.88	D	0.62	C
Hazel Avenue to Sunrise Boulevard	**1.01**	**F**	0.84	D
Sunrise Boulevard to Zinfandel Drive	0.95	E	0.67	C

Notes:
LOS = level of service; U.S. 50 = U.S. Highway 50
[1] Capacity based on 2,200 vehicles per hour per lane (vphpl) for freeway lanes, 1,600 vphpl for auxiliary lanes
Bold indicates deficiency.
Source: Data provided by DKS Associates in 2009

Table 3A.15-14
Levels of Service for Freeway-Ramp Merge, Diverge, and Weave Maneuvers — Existing Conditions

Ramp	Merge, Diverge, or Weave Maneuvers	A.M. Peak		P.M. Peak	
		Density[1]	LOS	Density[1]	LOS
Eastbound U.S. 50					
Hazel Avenue off-ramp	Diverge	14.2	B	**27.1**	**C (F)[2]**
Hazel Avenue on-ramp – Aerojet off-ramp	Weave	22.1	C	30.0	D
Folsom Boulevard off-ramp	Diverge	NA	NA	NA	NA
Folsom Boulevard on-ramp	Merge	29.0	D	**45.8**	**F**
Prairie City Road off-ramp	Diverge	29.9	D	**48.5**	**F**
Prairie City Road direct on-ramp	Merge	26.6	C	39.1	E
Prairie City Road flyover on-ramp	Merge	22.1	C	**36.2**	**F**
E. Bidwell Street - Scott Road direct off-ramp	Diverge	19.1	B	**32.9**	**F**
E. Bidwell Street - Scott Road loop on-ramp	Merge	NA	NA	NA	NA
E. Bidwell Street - Scott Road direct on-ramp	Merge	14.0	B	22.8	C
Latrobe Road direct off-ramp	Diverge	27.5	C	34.9	D
El Dorado Hills Boulevard loop off-ramp	Diverge	NA	NA	NA	NA
El Dorado Hills Boulevard - Latrobe Road on-ramp	Merge	28.4	D	**43.3**	**F**
Westbound U.S. 50					
El Dorado Hills Boulevard - Latrobe Road off-ramp	Diverge	**41.2**	**F**	23.7	C
El Dorado Hills Boulevard - Latrobe Road on-ramp	Merge	**41.7**	**F**	25.6	C
E. Bidwell Street - Scott Road direct off-ramp	Diverge	**30.8**	**F**	16.7	B
E. Bidwell Street - Scott Road loop on-ramp	Merge	30.3	D	19.6	B
E. Bidwell Street - Scott Road direct on-ramp	Merge	**30.1**	**F**	17.2	B
Prairie City Road direct off-ramp	Diverge	**40.4**	**F**	26.1	C
Prairie City Road loop on-ramp	Merge	37.9	E	25.9	C
Prairie City Road direct on-ramp	Merge	36.8	F	25.6	C
Folsom Boulevard off-ramp	Diverge	**43.0**	**F**	32.6	D
Folsom Boulevard on-ramp	Merge	NA	NA	NA	NA
Hazel Avenue direct off-ramp	Diverge	16.9	B	11.2	B
Hazel Avenue loop on-ramp	Merge	21.8	C	14.3	B
Hazel Avenue direct on-ramp	Merge	**35.5**	**F**	23.6	C

Notes:
LOS = level of service; NA = not applicable – a lane drops at an off-ramp or adds at anon-ramp; U.S. 50 = U.S. Highway 50
[1] Density in passenger cars per mile per lane.
[2] LOS F by observation, caused by downstream bottleneck.
Shaded areas indicate deficiency where calculation indicates that demand exceeds capacity.
Source: Data provided by DKS Associates in 2009

3A.15.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

There are no Federal plans, policies, regulations, or laws related to traffic and transportation that apply to the project or alternatives under consideration. Federal regulations that apply to traffic and transportation are administered by Caltrans and local jurisdictions.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

Caltrans policies are applicable to the project and alternatives under consideration and are summarized in Caltrans' *Guide for the Preparation of Traffic Impact Studies* (Caltrans 2002). These guidelines identify circumstances under which Caltrans believes that a traffic impact study would be required, information that Caltrans believes should be included in the study, analysis scenarios, and guidance on acceptable analysis methodologies.

The standards for Caltrans' facilities in the study area are detailed in the U.S. 50 Corridor System Management Plan (CSMP) and the SR 16 Transportation Concept Report.

The U.S. 50 CSMP has been developed to plan and manage transportation in the corridor across modes and jurisdictional boundaries. The CSMP outlines a foundation to support the partnership based, integrated corridor management of all travel modes (transit, cars, trucks, bicycles) and infrastructure (rail tracks, roads, highways, information systems, bike routes), to provide mobility in the most efficient and effective manner possible. This approach brings facility operations and transportation service provision together with capital projects into a coordinated system management strategy that focuses on high demand travel corridors such as U.S. 50. The 20-Year Concept LOS for U.S. 50 in the study area is LOS F, because improvements necessary to improve the LOS to E are not feasible due to environmental, right-of-way, financial, and other constraints.

According to the SR 16 Transportation Concept Report, SR 16 in the project study area has a concept LOS E.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

Metropolitan Transportation Plan for 2035 (MTP 2035)

The MTP 2035 (SACOG 2007) is a long-range planning document for identifying and programming roadway improvements throughout the Sacramento region based on projections for growth in population, housing and jobs. Federal law requires the MTP to conform to air quality goals for the region, satisfy financial constraints such that all proposed projects can be reasonably funded, and undergo extensive public review. State law further requires the MTP process include careful environmental analysis and review.

City of Folsom General Plan

Goals and policies of the City General Plan relating to traffic and transportation that the City has found to be applicable to the project are listed below:

GOAL 17: To develop a comprehensive transportation / circulation system which includes as a minimum:

1. Freeways, highways, and/or expressways designed to route through-traffic away from Folsom's neighborhoods.

2. Arterial roads which provide access among Folsom's neighborhoods, major cross-town links, and links between Folsom and adjacent communities.

3. Additional crossing(s) over the American River.

4. Pathways and designated route for bicycle and pedestrian traffic.

5. Designated routes for commercial vehicles.

6. The protection of residential neighborhoods from through-traffic.

7. Public transportation routes.

- **Policy 17.1:** The City shall plan for an integrated circulation system which provides for travel by private vehicles, commercial vehicle routes, a public transportation system, and for pedestrian and bicycle routes.

- **Policy 17.2:** The City should establish a hierarchy of roads consisting of the following:

    1. **Freeways or limited access highways.** Such roads shall be grade separated at each intersection with another road. The major purpose of such roads is to route traffic around Folsom, with as few interruptions to the surface street system as possible. U.S. Highway 50 currently meets the definition of a freeway. The City has made a firm commitment that a new freeway would not bisect the city.

    2. **Expressways.** Allow for moderate- to high-speed travel within the City. The purpose of an expressway is to carry cross-town traffic from other communities or between neighborhoods within the City. An expressway may contain some grade-separated intersections, but this type of road would be mainly a surface street. Expressways should be located to allow for controlled intersections spaced at one-half mile intervals or more. Only arterial and collector roads should intersect with an expressway.

    3. **Arterial roads (or major streets).** Serve to connect neighborhoods within the City and the City with surrounding communities. Arterials would normally define the boundaries of neighborhoods, not provide internal access to a neighborhood.

    4. **Collector (or secondary) roads.** Serve to route traffic from local streets within a neighborhood to an arterial road. Collector streets would not normally serve as "through" roads for more than one area, but would circulate throughout a neighborhood.

    5. **Local (or tertiary) roads.** Serve a portion of a neighborhood only and route traffic to a collector street.

    6. **Street-ends (cul-de-sacs, dead end streets, etc.).** Limited in length and serve only a few residences.

- **Policy 17.3:** Arterial roads serving new developments shall be aligned with arterial roads whenever possible.

- **Policy 17.9:** The City should plan for the expansion of future public transit routes (bus and fixed rail service).

    1. Transit routes should coincide with major destinations for employment and shopping, the location of major institutions, concentrations of multifamily housing, and other land uses likely to attract public transit ridership.

    2. The City should preserve existing railroad rights-of-way for their potential future use as public transit routes.

    3. Bus routes should follow major roads with service to residential neighborhoods via collector streets.

- **Policy 17.10:** The City should develop and maintain a bikeway and pedestrian master plan that links residential developments with sources of employment, public open space, parks, schools, neighborhood

shopping areas, the central commercial district, other major recreational destinations, and adjoining communities.

1. The City should ensure that new residential developments incorporate pedestrian and bicycle paths or routes when there are nearby schools, parks, public open spaces, sources of employment or other destinations for such travel. Such paths or routes should be designed so that schools and parks accessible to area residents. Pedestrian / bicycle over- and under-crossings may be provided when necessary to cross arterial roads or expressways.

3. The City should establish and maintain an internal pathway system that links parks sources of employment and public open spaces using right-of-way and parkways.

4. Where on-street bikeways are not feasible, the City should provide for Class I off-street bikeways.

5. The City should endeavor to provide routes for recreational travel, providing access to important recreational areas of the City, including Folsom Lake.

- **Policy 17.16:** The City shall designate locations for park and ride lots and adopt standards for their development. Several such lots are designated on the Plan Map and dedication of land for each site shall be required as part of the approval process for developing of adjoining parcels.

- **Policy 17.17:** The City should strive to achieve at least a traffic Level of Service "C" throughout the City. During the course of the Plan buildout it may occur that temporary higher Level of Service results where roadway improvements have not been adequately phased as development proceeds. However, this situation will be minimized based on annual traffic studies as approved by the City of Folsom and Monitoring programs. Resolution No. 3798.

- **Policy 17.18:** The City will work with the California Department of Transportation in planning for and funding freeway interchange improvements and additional interchanges along U.S. Highway 50. A specific study should be prepared by the City to determine the required phasing of construction of freeway and interchange improvements based upon buildout of land uses designated on the Plan Map.

- **Policy 17.19:** Because the Traffic Studies upon which this Circulation Element are based shows various intersections which will not achieve Level of Service "C", the City should adopt a mandatory TSM program that applies to existing as well as future development and will ensure the assumed reduction in peak hour trips. Prior to adoption of the Program by the City, all discretionary development permits issued by the City should require the applicants to participate in the TSM program when enacted. Specific Studies should be conducted to determine the most desirable methods for achieving the required level of trip reduction.

- **Policy 17.22:** The City shall require a minimum two lane arterial roads be installed adjacent to or in the vicinity of new subdivision.

The city plans to update the General Plan following the adoption of this Specific Plan.

The Specific Plan proposes an amended Level of Service policy within the project area (south of U.S. 50) as follows:

> The City should strive to achieve at least a traffic Level of Service "C" within the Folsom South of U.S. 50 Specific Plan. For roadways and intersections within the Specific Plan, LOS "D" conditions may be considered on a case by case basis if improvements required to meet LOS "C" exceeds the "normally accepted maximum" improvements established by the City. Complete Streets principles require that streets and intersections be designed with all transportation modes in mind, and that the road widths, delays, and safety impacts to pedestrians and bicycles make larger roadways and intersections

incompatible with this philosophy. Coupled with the limited reduction in vehicular delay that such improvements would provide, the City has determined that the benefits of excessively wide roadways and intersections do not outweigh the impacts to the community. Therefore, "normally accepted maximum" improvements on arterial roadways include three through-lanes in each direction; and at intersections includes two left-turn lanes, three through-lanes and one right-turn lane on an approach.

Policy 17.17 will not change within the City of Folsom's existing boundaries (north of U.S. 50).

Sacramento County General Plan

Goals and policies of the Sacramento County General Plan relating to traffic and transportation that the Sacramento County has found to be applicable to the project are listed below:

- **Policy CI-2** Sacramento County shall conduct land use and transportation planning with a regional perspective.

- **Policy CI-10;** Sacramento County shall promote and support the network of Transportation Corridors as designated on the Transportation Plan accompanying this Element.

- **Policy CI-14:** Sacramento County shall utilize design and development standards which support travel by transit, walking, bicycling, and clean alternative fuel and low emission vehicles.

- **Policy CI-21:** Incorporate preferential consideration for buses and private HOV's at strategic congestion points (such as bridges and on-ramps) directed at discouraging drive-alone commuting.

- **Policy CI-22:** Sacramento County shall apply the following Level of Service (LOS) standards for planning roads in the unincorporated area:

  - Rural collectors: LOS D
  - Urban area roads: LOS E

  and may proceed with additional capacity projects within the scope of the adopted Transportation Plan when the Board of Supervisors has determined that the implementation of all feasible measures which will reduce travel demand in the affected corridor will not provide the target level of service.

- **Policy CI-24:** Sacramento County shall support a program to develop a regional network of High Occupancy Vehicle (HOV) lanes throughout the urban area that includes provisions to designate existing mixed flow lanes for HOV use.

Sacramento County is in the process of updating the Sacramento County General Plan.

City of Rancho Cordova General Plan

Goals and policies of the City of Rancho Cordova General Plan relating to traffic and transportation that the City of Rancho Cordova has found to be applicable to the project are listed below:

- **Policy C.1.2:** Seek to maintain operations on all roadways and intersections at Level of Service D or better at all times, including peak travel times, unless maintaining this Level of Service would, in the City's judgment, be infeasible and/or conflict with the achievement of other goals. Congestion in excess of Level of Service D may be accepted in these cases, provided that provisions are made to improve traffic flow and/or promote non-vehicular transportation as part of a development project or a City-initiated project.

- **Policy C.1.11:** As part of major individual roadway enhancement project (e.g., intersection redesign, signalization of previously un-signalized intersection), enhance and upgrade pedestrian and bicycle facilities within one-quarter mile of the project.

- **Policy C.2.6:** Provide on-street bike lanes along all connector roadways and on local and major roadways when necessary to provide for interconnected routes. On-street bike routes may be provided on local, connector, and major roadways as deemed necessary by the City.

El Dorado County General Plan

Goals and policies of the El Dorado County General Plan relating to traffic and transportation that El Dorado County has found to be applicable to the project are listed below:

- **TC-1:** To plan for and provide a unified, coordinated, and cost-efficient countywide road and highway system that ensures the safe, orderly, and efficient movement of people and goods.

- **TC-X:** To coordinate planning and implementation of roadway improvements with new development to maintain adequate level of service on County roads.

- **TC-Xd:** Level of Service (LOS) for County-maintained roads and state highways within the unincorporated areas of the county shall not be worse than LOS E in the Community Regions or LOS D in the Rural Centers and Rural Regions except as specified in Table TC-2 or, after December 31, 2008, Table TC-3. The volume to capacity ratio of the roadway segments listed in Tables TC-2 and TC-3 as applicable shall not exceed the ratio specified in that Table. Level of Service will be defined in the latest edition of the Highway Capacity manual (Transportation Research Board, National Research Council) and calculated using the methodologies contained in that manual. Analysis periods shall be based on the professional judgment of the Department of Transportation which shall consider periods including, but not limited to, Weekday Average Daily Traffic (ADT), AM Peak Hour, and PM Peak hour traffic volumes.

- **TC-Xe:** For the purpose of this Transportation and Circulation Element, "worsen" is defined as any of the following number of project trips using a road facility at the time of issuance of a use and occupancy permit for the development project:

    - A 2 percent increase in traffic during the a.m. peak hour, p.m. peak hour, or daily, or
    - The addition of 100 or more daily trips,
    - The addition of 10 or more trips during the a.m. peak hour or the p.m. peak hour.

- **TC-4c:** The County shall give priority to bikeways that will serve population centers and destinations of greatest demand and to bikeways that close gaps in the existing bikeway system.

- **TC-4d:** The County shall develop and maintain a program to construct bikeways, in conjunction with road projects, consistent with the County's *Bikeway Master Plan*, taking into account available funding for construction and maintenance.

- **TC-4f:** The County Shall sign and stripe Class II bicycle routes, in accordance with the County's *Bikeway Master Plan*, on roads shown on Figure TC-1, when road width, safety, and operational conditions permit safe bicycle operation.

3A.15.3 ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Roadway Facilities

Because the project and development alternatives under consideration would cause traffic impacts on roadways that are under state, County, and City jurisdictions, this analysis was conducted using a combination of policies and guidelines. The City of Folsom identifies LOS C as its minimum standard for intersection operations within its existing boundaries (north of U.S. 50). For roadways within the project boundaries (south of U.S. 50), LOS D conditions can be considered acceptable if improvements required to meet LOS C exceeds the City's "normally accepted maximum" improvements. Sacramento County identifies LOS E as the minimum acceptable standard for intersection and roadway operations in the project vicinity (except for LOS D outside the Urban Limit Line). The City of Rancho Cordova identifies LOS D as its minimum standard for intersection and roadway operations. El Dorado County identifies LOS E as the minimum acceptable standard for intersection operations in the project vicinity. For state-controlled facilities, thresholds presented in the State's Corridor System Management Plan or Route Concept Report were applied. (The concept service level for SR 16 is LOS E. The concept service level for U.S. 50 is LOS F. For this study, LOS E is applied to U.S. 50 as a conservative approach for identifying impacts).

Signalized Intersections

Based on the Circulation Element/Plan of the City of Folsom General Plan, the Sacramento County Guidelines, the Circulation Element/Plan of the City of Rancho Cordova General Plan, and the El Dorado County DOT traffic impact study protocols and procedures, a signalized-intersection impact at a study intersection is considered significant if the addition of project-generated traffic under the Proposed Project or alternatives under consideration would cause:

- a signalized intersection operating at an acceptable LOS C or better in Folsom to degrade to an unacceptable LOS D, LOS E or LOS F; for intersections within the project boundaries (south of U.S. 50), LOS D conditions can be considered acceptable if improvements required to meet LOS C exceeds the City's "normally accepted maximum" improvements
- an increase in the delay of 5 or more seconds at a signalized intersection in Folsom operating at an unacceptable level (LOS D, E or LOS F);
- a signalized intersection operating at an acceptable LOS D or better in Rancho Cordova to degrade to an unacceptable LOS E or LOS F;
- a signalized intersection operating at an acceptable LOS E or better in Sacramento County to degrade to an unacceptable LOS F; or
- an increase in the V/C ratio of more than 0.05 at a signalized intersection in Rancho Cordova or Sacramento County operating at an unacceptable level (LOS E or LOS F in Rancho Cordova, or LOS F in Sacramento County);
- a signalized intersection operating at an acceptable LOS E or better in El Dorado County Community Region (El Dorado Hills) to degrade to an unacceptable LOS F, or add significantly more traffic to a signalized intersection operating at an unacceptable LOS F (2% increase, or 10 or more peak hour trips).
- a signalized intersection operating at an acceptable LOS E or better at a State Highway interchange (U.S. 50) to degrade to an unacceptable LOS F, or add more traffic to a signalized intersection operating at an unacceptable LOS F (1 or more peak hour trips).

Unsignalized Intersections

Based on the Circulation Element/Plan of the City of Folsom General Plan, the Sacramento County Guidelines, the Circulation Element/Plan of the City of Rancho Cordova General Plan, and the El Dorado County DOT traffic impact study protocols and procedures, an unsignalized-intersection impact at a study intersection is considered significant if the addition of project-generated traffic under the Proposed Project or alternatives under consideration would cause:

- a unsignalized intersection operating at an acceptable LOS C or better in Folsom to degrade to an unacceptable LOS D, LOS E or LOS F;
- an unsignalized intersection in Rancho Cordova operating at an acceptable LOS D or better to degrade to an unacceptable LOS E or LOS F;
- an unsignalized intersection in Sacramento County and inside the Urban Limit Line operating at an acceptable LOS E or better to degrade to an unacceptable LOS F; or outside the Urban Limit Line operating at an acceptable LOS D or better to degrade to an unacceptable LOS E or F; or
- an increase of 5 seconds or more of control delay at an unsignalized intersection operating at an unacceptable level (LOS D, E or LOS F in Folsom, LOS E or LOS F in Rancho Cordova, or LOS F in Sacramento County).
- a unsignalized intersection operating at an acceptable LOS E or better in El Dorado County Community Region (El Dorado Hills) to degrade to an unacceptable LOS F, or add significantly more traffic to a signalized intersection operating at an unacceptable LOS F (2% increase, or 10 or more peak hour trips).

Roadway Segments

Based on the Sacramento County Guidelines and the LOS policy in the Circulation Element/Plan of the City of Rancho Cordova General Plan, a roadway-segment impact is considered significant if the addition of project-generated traffic under the Proposed Project or alternatives under consideration would cause:

- a roadway segment in Rancho Cordova operating at an acceptable LOS D or better to degrade to an unacceptable LOS E or LOS F;
- a roadway segment in Sacramento County and in the Urban Limit Line operating at an acceptable LOS E or better to degrade to an unacceptable LOS F; or a roadway segment in Sacramento County and outside the Urban Limit Line operating at an acceptable LOS D or better to degrade to an unacceptable LOS E or F;
- an increase in the volume-to-capacity (V/C) ratio of more than 0.05 on a roadway segment in Rancho Cordova or Sacramento County operating an unacceptable level (LOS E or LOS F in the Rancho Cordova, or LOS F in Sacramento County inside the Urban Limit Line; or LOS E or F in Sacramento County outside the Urban Limit Line.

Freeway Segments

Based on the Guide for the Preparation of Traffic Impact Studies and the Corridor System Management Plan, a freeway-segment impact is considered significant if the addition of project-generated traffic under the Proposed Project or alternatives under consideration would:

- cause a facility operating at an acceptable level (LOS E) to deteriorate to an unacceptable level (LOS F), or
- increase the volume to capacity ratio by 1% or more on a freeway segment that is operating at an unacceptable level (LOS F).

Freeway Ramp Merge, Diverge, and Weave

Based on the Guide for the Preparation of Traffic Impact Studies and the Corridor System Management Plan, a freeway ramp merge / diverge / weave impact is considered significant if the addition of project-generated traffic under the Proposed Project or alternatives under consideration would:

- cause a facility operating at an acceptable level (LOS E) to deteriorate to an unacceptable level (LOS F), or
- increase the density by 0.1 passenger cars per mile per lane or more at a freeway location that is operating at an unacceptable level (LOS F).

Bicycle, Pedestrian, and Transit Facilities

Bicycle facilities include Class I (off-street facilities), Class II (on-street bicycle lanes identified with signage and markings), and Class III (on-street bicycle routes identified by signage). Pedestrian facilities are composed of paths, sidewalks, and pedestrian crossings. Transit facilities include shuttle services, bus service, BRT, and light-rail facilities.

A bicycle, pedestrian, or transit-facility impact is considered significant if the Proposed Project or alternatives under consideration would do any of the following:

- eliminate or adversely affect an existing bikeway, pedestrian facility, or transit facility in a way that would discourage its use;
- interfere with the implementation of a planned bikeway, planned pedestrian facility or be in conflict with any future transit facility;
- result in unsafe conditions for bicyclists or pedestrians, including unsafe bicycle/pedestrian, bicycle/motor vehicle, pedestrian/motor vehicle, transit/bicycle, transit/pedestrian, or transit/motor vehicle conflict; or
- result in demands to transit facilities greater than available capacity.

The Specific Plan implements General Plan policy 17.13 by incorporating bikeways and lanes. Because the proposed specific plan is consistent with the City's General Plan, the project is expected to have less-than-significant impacts on pedestrian, bicycle, and transit facilities.

ANALYSIS METHODOLOGY

The study roadway segments, intersections, and freeway facilities identified for inclusion in this analysis were developed in consultation with City of Folsom, City of Rancho Cordova, Sacramento County, El Dorado County and Caltrans staff members.

Analysis Scenarios

As described previously in this section, the following scenarios were reviewed at a full and equal level of quantitative analysis:

- Existing conditions – No Project (NP)
- Existing conditions – No USACE Permit (NCP) Alternative
- Existing conditions – Proposed Project (PP) Alternative
- Existing conditions – Resource Impact Minimization (RIM) Alternative
- Existing conditions – Centralized Development (CD) Alternative
- Existing conditions – Reduced Hillside Development (RHD) Alternative

- Cumulative conditions – No Project (NP) Alternative
- Cumulative conditions – No USACE Permit (NCP) Alternative
- Cumulative conditions – Proposed Project (PP) Alternative
- Cumulative conditions – Resource Impact Minimization (RIM) Alternative
- Cumulative conditions – Centralized Development (CD) Alternative
- Cumulative conditions – Reduced Hillside Development (RHD) Alternative

Existing Scenario Land Use

Within the SPA, land use represents the particular alternative being analyzed. For analysis purposes, the Existing No Project Alternative assumes no change in the project area land use from existing conditions (no additional development). In this manner, the Existing No Project Alternative is the same as existing conditions, and comparison to the build alternatives provides a conservative analysis. The No Project Alternative would entail development under the existing AG-80 zoning, which could include up to 44 individual rural residences. However, this traffic conditions associated with this level of development would be very similar to existing conditions for purposes of CEQA impact analysis.

Cumulative Land Use

As discussed previously, the project is anticipated to be completed (built-out) by the year 2030. Land use for the cumulative scenarios is based on the following sources:

- SACOG forecasts – Throughout the region, the starting point for the 2030 land use forecasts is taken from SACOG land use forecasts. Growth to the year 2030 was proportionately calculated from existing land use inventories and SACOG year 2035 forecasts. Unless otherwise replaced as discussed below, these year 2030 estimates are used throughout the region.

- SPA – Within the SPA, land use represents the particular alternative being analyzed. While the Cumulative No Project Alternative includes development under the existing AG-80 zoning which could include up to 44 individual rural residences, no additional development was assumed in the transportation analysis for the no project scenario. This provides a conservative comparision to the build alternatives.

- City of Folsom – Year 2030 land use forecasts within the City of Folsom were derived from the City's General Plan.

- City of Rancho Cordova – Year 2030 land use forecasts within the City of Rancho Cordova were derived from the City's General Plan.

- El Dorado Hills – Within the El Dorado Hills District of El Dorado County, year 2025 forecasts from the El Dorado County General Plan were utilized. Year 2025 is the horizon year of the El Dorado County General Plan.

- Sacramento County – Within the area of the Easton / Glenborough development, year 2030 forecasts were derived from the pertinent Specific Plan. For the Cordova Hills area, a forecast of year 2030 development was estimated based upon an unapproved Phase I plan.

- Rock Quarries – In the year 2030, three rock quarries south of the site are assumed to be fully operational. These quarries are discussed in further detail later in this section.

Existing Scenarios Roadway Networks

The roadway system associated with the project and alternatives was added to the existing roadway system for analysis purposes. The Proposed Project and the build alternatives all include improvements to the Prairie City

Road and East Bidwell Street (Scott Road) interchanges to serve the higher volumes created by the project. They would also include a new extension of Rowberry Drive south across U.S. 50 to Easton Valley Parkway. The Proposed Project and the build alternatives all include the construction of the Oak Avenue Parkway and Empire Ranch Road interchange to provide access to U.S. 50. These interchanges would be fully constructed with auxiliary lanes to the next interchange in both directions, because Caltrans would likely require the auxiliary lanes as part of the new interchanges. The Proposed Project and the build alternatives all include widening White Rock Road to five lanes, with two eastbound and three westbound lanes, between Prairie City Road and Carson Crossing Road. They all also include widening Prairie City Road to six lanes between U.S. 50 and the community park, and widening Prairie City Road to four lanes between the community park and White Rock Road. Exhibit 3A.15-10 shows the assumed roadway network for the existing scenarios with the Proposed Project or build alternative.

Cumulative Scenarios Roadway Networks

The roadway system associated with the Proposed Project and alternatives was added to the cumulative roadway system for analysis purposes. The Proposed Project and the build alternatives all include improvements to the Prairie City Road, Oak Avenue Parkway, East Bidwell Street (Scott Road) and Empire Ranch Road interchanges to serve the higher volumes created by the project. They would also include a new extension of Rowberry Drive south across U.S. 50 to Easton Valley Parkway. The Proposed Project and the build alternatives all include widening White Rock Road to five lanes, with two eastbound and three westbound lanes, between Prairie City Road and Carson Crossing Road. They all also include widening Prairie City Road to six lanes between U.S. 50 and the community park, and widening Prairie City Road to six lanes between the community park and White Rock Road.

Outside the immediate project environs, regional roadways assumed for the cumulative scenarios are consistent with improvements identified in the MTP 2035 (Tier I), depending on the assumed year of completion. Roadway improvements identified in the City's CIP (to be completed before year 2030) were incorporated into the Cumulative Conditions analysis for facilities within the City's current city limit boundary. This assumes that the City's CIP will be fully funded by Year 2030.

Cumulative regional roadway improvements include:

- HOV lanes on U.S. 50 between Watt Avenue and Sunrise Boulevard
- Auxiliary lanes on U.S. 50 between Sunrise Boulevard and Prairie City Road
- HOV, truck climbing and auxiliary lanes on U.S. 50 between El Dorado Hills Boulevard – Latrobe Road and Greenstone Road
- Iron Point Road widened to six lanes from Folsom Boulevard to East Bidwell Street
- East Bidwell Street to six lanes from Blue Ravine Road to U.S. 50
- Hazel Avenue widened to six lanes from Madison Avenue to U.S. 50
- A six lane Hazel Avenue extended from Folsom Boulevard to Easton Valley Parkway
- A six lane Easton Valley Parkway built between Rancho Cordova Parkway and Prairie City Road
- Rancho Cordova Parkway built from a new U.S. 50 interchange to Grant Line Road
- Grant Line Road widened to four lanes

- Douglas Road widened to six lanes
- International Drive extended as a six lane road to White Rock Road east of Rancho Cordova Parkway
- Numerous new roads in Rancho Cordova
- White Rock Road widened to four lanes from Rancho Cordova Parkway to U.S. 50 at the new Silva Valley interchange
- A four lane Saratoga Road extended to Iron Point Road

Exhibit 3A.15-11 shows the assumed roadway network for Cumulative (2030) Conditions and shows the roadway network identified in the City General Plan and the City's CIP.

Travel Forecasts

Impacts on the roadway system for existing and cumulative 2030 conditions were determined by forecasting the increase in daily and peak-hour traffic volumes that would occur with implementation of the project and alternatives. A modified version of the 2008 SACMET regional travel demand forecasting (TDF) model was used to develop daily and a.m. and p.m. peak-hour traffic volume forecasts for the study roadways and intersections. A TDF model is a tool that assigns trips generated by the various land uses to the surrounding roadway network based on the locations of trip attractions and productions. To accomplish this task, the TDF incorporates several types of data, including detailed land use; trip generation characteristics of specific land use types; mode choice propensity based upon user and trip characteristics; roadway, pedestrian, and transit networks; and census information. Using the TDF model for the Folsom South of U.S. 50 Annexation project allowed reasonably foreseeable planned development projects and fully funded roadway improvement projects to be systematically incorporated into traffic forecasting efforts. This approach uses the best available technical tools in the region to develop future forecasts for the project study area.

Within the study environs, the TDF model was modified to improve its local forecasting abilities. Large traffic analysis zones (TAZs) associated with SACOG's regional model were split into smaller zones to better replicate planned travel access patterns, and additional roadway links were added to represent existing and planned roadways.

Cumulative Rock Quarry Truck Traffic

Three rock quarries are proposed for the area south of the SPA, in unincorporated Sacramento County. While Teichert has an existing quarry on Grant Line Road south of White Rock Road, there are currently no quarries south of the SPA. All three proposed rock quarries are expected to be in full operation by the year 2030. The only study of the potential impact of these rock quarry operations that is currently available is the Teichert Quarry Environmental Impact Report. Truck trips generated by these projects, as described by the Teichert Quarry EIR, were added to the forecasted cumulative volumes because these projects are considered reasonably foreseeable. There would not usually be any quarry trucks operating in the PM peak hour; therefore, these truck trips were added to the cumulative daily and AM peak hour volumes. More information about the truck traffic assumption is included later in this section.

Cumulative Transit Conditions

The cumulative transit assumptions are based on a modified version of the transit system in SACOG's 2035 MTP model. Regional Transit's Folsom Light rail line is assumed to have passing tracks added allowing for 15 minute frequency to the Historic Folsom Station. Regional Transit would add several new bus lines to serve the developed area of Easton-Glenborough and southern Rancho Cordova, including Westborough, Rio Del Oro and

Sunridge. Folsom Stage Lines is assumed to add another route by 2030. El Dorado County would add a local El Dorado Hills route.

It is also assumed that the three transit agencies would work together to connect the communities with two new multijurisdictional bus lines. One would run on Folsom Boulevard, Iron Point Road and Saratoga Road. A second would run on White Rock Road. This future transit network, which is assumed to exist without the project, is shown on Exhibit 3A.15-12.

The Proposed Project or any build alternative is assumed to add additional transit services, as shown on Exhibit 3A.15-13. This includes the extension of the BRT system operating on Easton Valley Parkway, from the Hazel Light Rail Station to Prairie City Road, through the project to White Rock Road. The Proposed Project or any build alternative would provide a local circulatory bus within the project area. The City of Folsom would extend or reroute its bus lines to connect the SPA to the current City of Folsom north of U.S. 50. It is likely that RT would extend some of its local Easton-Glenborough lines into the SPA. It is also likely that the interagency White Rock Road bus would be rerouted to pass through the SPA.

Vehicle-Trip Generation Estimates

Table 3A.15-15 summarizes the vehicle-trip generation of the Proposed Project and the build alternatives, based upon cumulative (year 2030) conditions (build-out). Trip generation is shown for the a.m. and p.m. peak hours, as well as on a daily basis.

Table 3A.15-15
Folsom South of U.S. 50 Annexation Area Vehicle-Trip Generation Summary

Development		Total Vehicle Trips[1]		
		A.M. Peak Hour	P.M. Peak Hour	Daily
Proposed Project Specific Plan buildout	Total trips[2]	**14,300**	**18,500**	**202,900**
	Internal trips[3]	3,100	4,000	44,000
	External trips[4]	11,200	14,500	158,900
No USACE Permit Alternative buildout	Total trips[2]	**11,300**	**15,000**	**163,400**
	Internal trips[3]	2,000	2,700	29,300
	External trips[4]	9,300	12,300	134,100
Resource Impact Minimization Alternative buildout	Total trips[2]	**11,300**	**14,700**	**160,700**
	Internal trips[3]	2,200	2,900	31,200
	External trips[4]	9,100	11,800	129,500
Centralized Development Alternative buildout	Total trips[2]	**13,500**	**17,500**	**191,200**
	Internal trips[3]	2,700	3,600	39,000
	External trips[4]	10,800	13,900	152,200
Reduced Hillside Development Alternative buildout	Total trips[2]	**15,800**	**19,900**	**218,500**
	Internal trips[3]	3,500	4,500	49,800
	External trips[4]	12,300	15,400	168,700

Table 3A.15-15 Folsom South of U.S. 50 Annexation Area Vehicle-Trip Generation Summary			
Development	Total Vehicle Trips[1]		
	A.M. Peak Hour	P.M. Peak Hour	Daily

Notes:
1 Trip summary based from the SACMET travel demand forecasting (TDF) model.
2 Represents total vehicle trips generated including trips internal to a traffic analysis zone (TAZ) and trips from one TAZ to another TAZ within the Folsom South of U.S. 50 Annexation area.
3 Represents total vehicle trips generated including trips internal to a traffic analysis zone (TAZ) and trips from one TAZ to another TAZ within the Folsom South of U.S. 50 Annexation area.
4 Represents vehicle trips external to the SPA (trips outside of the Folsom South of U.S. 50 Annexation site). Does not include trips from one TAZ to another TAZ within the Folsom South of U.S. 50 Annexation area.
Source: Data provided by DKS Associates in 2009

Traffic Volume Forecasts

The travel demand model assigned the vehicle trips to the roadway network for each alternative under the existing and cumulative conditions. Existing scenario traffic volume forecasts (peak hour intersection volumes, freeway volumes, and daily segment volumes) are illustrated in Exhibits 3A.15-2 through 3A.15-8, and in Exhibits 3A.15-14 through 3A.15-53. Cumulative scenario traffic volume forecasts (peak hour intersection volumes, freeway volumes, and daily segment volumes) are illustrated in Exhibits 3A.15-54 through 3A.15-100.

IMPACT ANALYSIS

Program level impacts and mitigation measures are presented together in the section below. Impacts that would occur under each alternative development scenario are identified as follows: NP (No Project), NCP (No USACE Permit), PP (Proposed Project/Action), RIM (Resource Impact Minimization), CD (Centralized Development), and RHD (Reduced Hillside Development). The impacts for each alternative are compared relative to the PP at the end of each impact conclusion (i.e., similar, greater, lesser).

EXISTING PLUS PROJECT SCENARIOS

The Proposed Project and the build alternatives would cause significant impacts in the City of Folsom, Sacramento County, the City of Rancho Cordova, and El Dorado County and to Caltrans facilities. Tables 3A.15-16 through 3A.15-24 summarize the results of the analyses. There are feasible mitigation measures for all of the impacts; however, the impacts outside of Folsom can only be mitigated with the cooperation of the affected agency. There would be less impacts with the No USACE Permit and the Resource Impact Minimization Alternatives than with the Proposed Project.

Exhibits 3A.15-14 through 19, 3A.15-22 through 27, 3A.15-30 through 35, 3A.15-38 through 43, and 3A.15-46 through 51 present peak-hour traffic volumes, lane configurations, and traffic control under the Proposed Project, Resource Impact Minimization, Centralized Development, Reduced Hillside Development, and No USACE Permit alternatives, respectively. Exhibits 3A.15-20, 3A.15-28, 3A.15-36, 3A.15-44, and 3A.15-52 compare ADT volumes under Baseline No Project (NP) conditions with those under the Proposed Project (PP), Resource Impact Minimization (RIM), Centralized Development (CD), Reduced Hillside Development (RHD), and No USACE Permit (NCP) alternatives, respectively. Exhibits 3A.15-21, 3A.15-29, 3A.15-37, 3A.15-45, and 3A.15-53 compare present freeway peak-hour traffic volumes and lane configurations under the Proposed Project, Resource Impact Minimization, Centralized Development, Reduced Hillside Development, and No USACE Permit alternatives, respectively.

Table 3A.15-16
Intersection Levels of Service — Existing Plus Project Conditions – City of Folsom

Intersection		Control	No Project Alternative				Proposed Project Alternative				No USACE Permit Alternative				Resource Impact Minimization				Centralized Development				Reduced Hillside Development			
			A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
			Delay[1]	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1.	Folsom Blvd / Blue Ravine Road	Signalized	**35.6**	**D**	**74.7**	**E**	**40.2**	**D**	**81.2**	**F**	**40.7**	**D**	**81.7**	**F**	**43.4**	**D**	**86.3**	**F**	**39.9**	**D**	**94.6**	**F**	**39.4**	**D**	**83.1**	**F**
2.	Sibly Street / Blue Ravine Road	Signalized	**41.4**	**D**	28.5	C	**52.9**	**D**	28.6	C	**45.3**	**D**	28.5	C	**42.3**	**D**	28.2	C	**56.1**	**E**	28.5	C	**61.2**	**E**	28.5	C
3.	Oak Avenue Parkway / Blue Ravine Road	Signalized	25.2	C	28.4	C	25.3	C	28.6	C	25.4	C	28.3	C	25.3	C	28.2	C	25.5	C	28.6	C	25.3	C	28.7	C
4.	Empire Ranch Road / Natoma Street	All-way stop	9.7	A	10.3	B	19.1	C	19.3	C	18.4	C	19.4	C	17.2	C	18.0	C	18.0	C	18.8	C	19.9	C	20.1	C
5.	Oak Avenue Parkway / Riley Street	Signalized	24.8	C	26.2	C	21.8	C	25.1	C	21.6	C	24.7	C	21.7	C	24.7	C	22.0	C	24.8	C	22.4	C	25.2	C
6.	Oak Avenue Parkway / East Bidwell Street	Signalized	24.6	C	29.5	C	27.2	C	30.7	C	27.1	C	30.7	C	27.0	C	30.7	C	27.2	C	30.8	C	27.1	C	30.6	C
7.	Nesmith Court / East Bidwell Street	Signalized	12.3	B	12.6	B	12.2	B	12.6	B	12.3	B	12.6	B	12.4	B	12.5	B	12.2	B	12.6	B	12.1	B	12.6	B
8.	Scholar Way / East Bidwell Street	Signalized	14.1	B	11.1	B	11.9	B	12.8	B	11.8	B	12.9	B	11.9	B	13.0	B	11.6	B	12.9	B	11.8	B	12.7	B
9.	Power Center Drive / East Bidwell Street	Signalized	11.6	B	21.5	C	7.5	A	20.5	C	7.1	A	20.2	C	7.3	A	20.3	C	7.4	A	20.5	C	7.6	A	20.4	C
10.	Broadstone Parkway / East Bidwell Street	Signalized	19.7	B	24.1	C	22.5	C	26.9	C	21.2	C	26.6	C	21.7	C	26.3	C	22.3	C	26.7	C	23.2	C	27.4	C
11.	Empire Ranch Road / Broadstone Parkway	All-way stop	9.2	A	9.1	A	12.9	B	13.2	B	12.8	B	13.2	B	12.6	B	12.9	B	12.7	B	13.0	B	13.1	B	13.4	B
12.	Oak Avenue Parkway / Haverhill Drive	Signalized	22.8	C	16.1	B	18.4	B	9.6	A	18.3	B	9.8	A	18.8	B	9.9	A	17.9	B	9.7	A	18.2	B	9.7	A
13.	Oak Avenue Parkway / Halidon Way	Signalized	19.2	B	16.1	B	17.2	B	13.5	B	17.1	B	13.7	B	17.3	B	13.6	B	17.1	B	13.6	B	17.4	B	13.7	B
14.	Folsom Blvd / Iron Point Road	Signalized	27.6	C	19.2	B	29.8	C	22.6	C	27.1	C	22.3	C	28.5	C	19.1	B	27.8	C	21.4	C	29.1	C	21.9	C
15.	Prairie City Road / Iron Point Road	Signalized	29.1	C	33.6	C	31.4	C	30.0	C	29.4	C	29.8	C	30.2	C	29.9	C	31.0	C	30.3	C	31.4	C	30.7	C
16.	Grover Road / Iron Point Road	Signalized	20.2	C	9.0	A	19.4	B	9.7	A	20.6	C	10.0	B	19.9	B	10.1	B	19.4	B	10.1	B	18.7	B	9.8	A
17.	McAdoo Drive / Iron Point Road	Signalized	21.3	C	13.8	B	23.5	C	17.2	B	23.9	C	17.1	B	23.7	C	16.9	B	23.6	C	16.8	B	23.7	C	16.7	B
18.	Oak Avenue Parkway / Iron Point Road	Signalized	29.8	C	13.4	B	31.6	C	33.6	C	31.6	C	34.0	C	31.3	C	33.6	C	31.7	C	34.5	C	31.7	C	34.6	C
19.	Rowberry Drive / Iron Point Road	Signalized	14.5	B	14.7	B	26.4	C	25.3	C	24.2	C	20.6	C	25.3	C	20.1	C	26.1	C	21.5	C	26.5	C	21.5	C
20.	Broadstone Parkway / Iron Point Road	Signalized	22.2	C	20.2	C	20.2	C	19.3	B	20.2	C	19.2	B	20.2	C	19.1	B	19.9	B	19.1	B	20.2	C	19.1	B
21.	East Bidwell Street / Iron Point Road	Signalized	31.7	C	**45.0**	**D**	20.6	C	**38.6**	**D**	20.0	B	**37.0**	**D**	19.5	B	**37.0**	**D**	20.2	C	**37.5**	**D**	20.1	C	**40.0**	**D**
22.	Cavitt Road / Iron Point Road	Signalized	16.2	B	19.0	B	23.7	C	20.1	C	23.1	C	20.1	C	23.1	C	20.2	C	23.0	C	20.4	C	22.9	C	20.0	C
23.	Serpa Way / Iron Point Road	Signalized	19.9	A	25.2	A	25.3	C	27.0	C	25.0	C	26.8	C	25.3	C	26.8	C	26.1	C	26.7	C	26.1	C	26.7	C
24.	Empire Ranch Road / Iron Point Road	All-way stop[2]	9.3	A	10.7	B	18.4	B	18.3	B	17.4	B	17.8	B	17.9	B	17.9	B	16.7	B	15.6	B	17.0	B	18.5	B
25.	Prairie City Road / High School	Signalized	21.8	C	16.0	B	24.7	C	16.5	B	23.7	C	16.2	B	23.8	C	16.1	B	24.5	C	16.1	B	24.6	C	16.7	B
26.	East Bidwell Street / Placerville Road	Signalized	0.0	A	0.0	A	11.3	B	10.0	A	7.9	A	9.9	A	8.3	A	10.0	A	7.8	A	10.0	A	9.5	A	10.0	B
27.	Prairie City Road / White Rock Road	All-way stop[2]	**51.4**	**F**	**99.6**	**F**	19.1	B	19.2	B	18.4	B	19.1	B	19.0	B	19.4	B	18.6	B	19.9	B	18.9	B	19.4	B
28.	Scott Road (West) / White Rock Road	Side-street stop	15.0	B	18.0	C	14.0	B	**28.7**	**D**	13.5	B	**26.2**	**D**	13.5	B	**26.4**	**D**	13.7	B	**28.6**	**D**	13.5	B	**28.1**	**D**
29.	Scott Road (East) / White Rock Road	All-way stop[2]	17.1	C	23.9	C	20.1	C	22.6	C	19.8	B	22.6	C	19.4	B	22.3	C	20.2	C	23.1	C	20.3	C	23.4	C
30.	Placerville Road / White Rock Road	Side-street stop[2]	11.9	B	16.6	C	11.3	B	13.3	B	8.3	A	12.6	B	11.4	B	12.4	B	10.4	B	12.9	B	11.3	B	12.5	B
31.	Empire Ranch Road / North Road	Signalized	NA	NA	NA	NA	13.1	B	20.3	C	14.5	B	24.3	C	11.9	B	21.4	C	14.4	B	25.0	C	16.9	B	25.1	C
32.	Prairie City Road / Easton Valley Parkway	Signalized	NA	NA	NA	NA	20.3	C	19.2	B	20.2	C	17.8	B	20.2	C	18.5	B	19.5	B	18.1	B	19.9	B	18.5	B
33.	Oak Avenue Parkway / Easton Valley Parkway	Signalized	NA	NA	NA	NA	27.9	C	25.7	C	26.9	C	23.0	C	27.1	C	22.8	C	27.9	C	25.1	C	28.5	C	25.9	C
34.	Rowberry Drive / Easton Valley Parkway	Signalized	NA	NA	NA	NA	16.6	B	17.0	B	15.5	B	16.8	B	12.8	B	16.0	B	14.4	B	17.6	B	16.6	B	19.9	B
35.	1st Street / Easton Valley Parkway	Signalized	NA	NA	NA	NA	19.8	B	19.8	B	24.7	C	24.8	C	26.2	C	24.2	C	26.5	C	25.4	C	26.6	C	25.7	C
36.	2nd Street / Easton Valley Parkway	Signalized	NA	NA	NA	NA	22.9	C	25.2	C	24.8	C	25.3	C	24.6	C	25.3	C	23.7	C	24.7	C	23.1	C	24.3	C
37.	3rd Street / Easton Valley Parkway	Signalized	NA	NA	NA	NA	25.2	C	28.3	C	17.3	B	21.6	C	20.0	B	22.2	C	19.6	B	22.6	C	18.2	B	22.4	C

Table 3A.15-16
Intersection Levels of Service — Existing Plus Project Conditions – City of Folsom

Intersection	Control	No Project Alternative				Proposed Project Alternative				No USACE Permit Alternative				Resource Impact Minimization				Centralized Development				Reduced Hillside Development			
		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
		Delay[1]	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
38. Scott Road (East) / Easton Valley Parkway	Signalized	NA	NA	NA	NA	27.9	C	**37.6**	**D**	29.2	C	33.4	C	28.9	C	31.6	C	30.7	C	**36.9**	**D**	31.8	C	**38.6**	**D**
39. 4th Street / Easton Valley Parkway	Signalized	NA	NA	NA	NA	NA	NA	NA	NA	23.5	C	26.0	C	26.3	C	26.8	C	25.1	C	27.4	C	27.2	C	28.3	C
40. Placerville Road / Easton Valley Parkway	Signalized	NA	NA	NA	NA	29.3	C	29.6	C	14.9	B	13.9	B	14.6	B	12.7	B	14.8	B	12.0	B	15.8	B	12.7	B
41. Hillside Drive / Easton Valley Parkway	Side-street stop	NA	NA	NA	NA	19.4	C	23.7	C	17.7	C	19.9	C	17.2	C	18.7	C	19.2	C	21.1	C	25.0	C	**30.0**	**D**
42. Empire Ranch Road / Easton Valley Parkway	Signalized	NA	NA	NA	NA	21.1	C	25.6	C	21.9	C	24.7	C	22.7	C	25.6	C	11.5	B	14.0	B	20.9	C	25.2	C
43. Prairie City Road / Middle Road	Side-street stop	NA	NA	NA	NA	12.3	B	12.2	B	11.7	B	11.2	B	12.1	B	11.8	B	12.3	B	12.2	B	12.1	B	11.9	B
44. Oak Avenue Parkway / Middle Road	Side-street stop	NA	NA	NA	NA	24.5	C	**30.7**	**D**	16.7	C	18.1	C	16.1	C	18.3	C	22.4	C	**26.2**	**D**	**29.2**	**D**	**35.4**	**E**
45. Scott Road (East) / Street "B"	Signalized	NA	NA	NA	NA	24.7	C	29.5	C	25.8	C	27.3	C	28.2	C	30.7	C	29.3	C	31.5	C	31.1	C	31.8	C
46. East Road / Street "B"	All-way stop	NA	NA	NA	NA	17.1	C	17.2	C	10.0	A	12.4	B	11.8	B	16.6	C	11.3	B	16.1	C	14.5	B	21.1	C
47. Prairie City Road / Street "A"	Side-street stop	NA	NA	NA	NA	16.7	C	19.2	C	15.4	C	16.7	C	17.0	C	20.1	C	18.4	C	22.2	C	17.5	C	21.4	C
48. Oak Avenue Parkway / Street "A"	All-way stop	NA	NA	NA	NA	14.0	B	14.4	B	11.3	B	11.5	B	11.4	B	11.6	B	13.3	B	13.9	B	14.8	B	15.2	C
49. West Road / Street "A"	All-way stop	NA	NA	NA	NA	10.8	B	10.0	A	9.2	A	9.2	A	9.5	A	10.1	B	11.8	B	11.7	B	16.0	C	13.5	B
50. Scott Road (East) / Street "A"	Signalized	NA	NA	NA	NA	31.5	C	28.5	C	26.9	C	22.4	C	30.2	C	29.6	C	31.6	C	29.0	C	33.0	C	31.6	C
51. East Road / Street "A"	Signalized	NA	NA	NA	NA	10.1	B	9.9	A	8.2	A	8.1	A	10.1	B	9.7	A	11.1	B	10.6	B	11.4	B	11.0	B
52. Placerville Road / Street "A"	Signalized	NA	NA	NA	NA	10.7	B	11.2	B	9.4	A	9.9	A	10.2	B	10.6	B	9.2	A	9.8	A	10.0	B	10.6	B
53. Empire Ranch Road / Street "A"	Side-street stop	NA	NA	NA	NA	10.5	B	12.5	B	10.1	B	11.6	B	10.5	B	11.8	B	8.9	A	9.5	A	10.0	B	11.5	B
54. Scott Road (East) / South Road	Signalized	NA	NA	NA	NA	28.6	C	26.7	C	25.9	C	24.6	C	25.6	C	25.2	C	28.7	C	27.0	C	30.1	C	29.1	C
55. Oak Avenue Parkway / White Rock Road	Signalized	NA	NA	NA	NA	15.8	B	18.0	B	14.5	B	17.2	B	14.3	B	16.3	B	14.5	B	17.5	B	14.5	B	17.9	B
56. Empire Ranch Road / White Rock Road	Signalized	NA	NA	NA	NA	6.1	A	8.4	A	5.9	A	7.8	A	6.3	A	8.2	A	1.8	A	5.1	A	4.3	A	7.8	A

Notes: LOS = level of service; U.S. 50 = U.S. Highway 50; V/C = volume-to-capacity; Blank = intersection does not exist under this alternative
[1] Average intersection delay reported for signalized intersections, worst-case delay reported for unsignalized, side-street-stop intersections; average intersection delay reported for all-way-stop intersections. All delays are reported in seconds per vehicle.
[2] Intersection signalized as part of proposed project
Bold indicates deficiency. Shaded areas indicate impact.
Source: Data provided by DKS Associates in 2009

Table 3A.15-17
Intersection Levels of Service — Existing Plus Project Conditions – Sacramento County

Intersection	Control	No Project Alternative				Proposed Project Alternative				No USACE Permit Alternative				Resource Impact Minimization				Centralized Development				Reduced Hillside Development			
		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
		V/C[1] or Delay[2]	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS
1. Hazel Avenue / Gold Country Boulevard	Signalized	0.69	B	**1.01**	**F**	0.74	C	**1.05**	**F**	0.73	C	**1.06**	**F**	0.72	C	**1.03**	**F**	0.73	C	**1.06**	**F**	0.74	C	**1.05**	**F**
2. Hazel Avenue / Folsom Boulevard	Signalized	0.61	B	0.87	D	0.65	B	0.98	E	0.62	B	**1.01**	**F**	0.64	B	0.95	E	0.62	B	**1.00**	**F**	0.64	B	0.99	E
3. Grant Line Road / White Rock Road	Side-street stop	43.5	E	**355.5**	**F**	**68.3**	**F**	**679.0**	**F**	**57.9**	**F**	**632.5**	**F**	**78.7**	**F**	**642.9**	**F**	**62.6**	**F**	**670.5**	**F**	**61.1**	**F**	**668.8**	**F**
4. Grant Line Road / Sunrise Boulevard	Signalized	0.80	D	0.79	C	0.84	D	0.81	D	0.83	D	0.83	D	0.83	D	0.82	D	0.83	D	0.83	D	0.84	D	0.82	D

Notes: LOS = level of service; V/C = volume-to-capacity
[1] V/C ratio is shown for signalized intersections. Delay is shown for unsignalized intersections.
[2] Average intersection delay reported in seconds per vehicle.
Bold indicates deficiency. Shaded areas indicate impact.
Source: Data provided by DKS Associates in 2009

Table 3A.15-18
Roadway Segment Levels of Service—Existing Plus Project Conditions - Sacramento County

Roadway Segment	Lanes	No Project Alternative			Proposed Project Alternative			No USACE Permit Alternative			Resource Impact Minimization			Centralized Development			Reduced Hillside Development		
		Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS
1. Folsom Boulevard — Sunrise Blvd to Mercantile Drive	4	19,900	0.55	A	20,000	0.56	A	19,500	0.54	A	19,900	0.55	A	19,700	0.55	A	20,100	0.56	A
2. Folsom Boulevard — Mercantile Drive to Hazel Avenue	4	14,900	0.41	A	14,900	0.41	A	14,500	0.40	A	15,000	0.42	A	14,900	0.41	A	14,900	0.41	A
3. Folsom Boulevard — Hazel Avenue to Aerojet Road	4	13,700	0.38	A	14,900	0.41	A	15,000	0.42	A	14,900	0.41	A	14,900	0.41	A	15,000	0.42	A
4. Folsom Boulevard — Aerojet Road to U.S. 50	4	17,600	0.49	A	20,100	0.56	A	19,900	0.55	A	19,900	0.55	A	19,900	0.55	A	20,100	0.56	A
5. Grant Line Road — White Rock Road to Douglas Road	2	9,600	0.56	D	12,400	0.73	E	12,300	0.72	E	11,900	0.70	E	12,400	0.73	E	12,200	0.72	E
6. Grant Line Road — Douglas Road to Keifer Boulevard	2	8,800	0.38	D	10,100	0.44	D	10,000	0.44	D	9,600	0.42	D	10,100	0.44	D	9,900	0.43	D
7. Grant Line Road — Keifer Boulevard to Jackson Road (SR 16)	2	7,700	0.34	C	10,000	0.44	D	9,900	0.43	D	9,400	0.41	D	10,100	0.44	D	10,200	0.45	D
8. Grant Line Road — Jackson Highway (SR 16) to Sunrise Boulevard	2	6,300	0.28	C	8,500	0.37	D	8,400	0.37	D	8,100	0.35	D	8,500	0.37	D	8,600	0.38	D
9. Hazel Avenue — Greenback Lane to Madison Avenue	4	38,300	**1.06**	**F**	39,600	**1.10**	**F**	39,200	**1.09**	**F**	39,400	**1.09**	**F**	39,200	**1.09**	**F**	39,500	**1.10**	**F**
10. Hazel Avenue — Madison Avenue to Curragh Downs Drive	4	46,300	**1.29**	**F**	48,200	**1.34**	**F**	47,700	**1.33**	**F**	47,500	**1.32**	**F**	48,100	**1.34**	**F**	48,100	**1.34**	**F**
11. Hazel Avenue — Curragh Downs Drive to Gold Country Boulevard	4	49,900	**1.25**	**F**	52,900	**1.32**	**F**	52,800	**1.32**	**F**	52,300	**1.31**	**F**	53,000	**1.33**	**F**	53,000	**1.33**	**F**
12. Hazel Avenue — Gold Country Boulevard to U.S. 50 westbound ramp	6	53,900	0.90	D	57,900	0.97	E	57,700	0.96	E	57,100	0.95	E	58,000	0.97	E	58,000	0.97	E
13. Jackson Highway (SR 16) — Grant Line Road to Dillard Road	2	14,300	0.62	E	13,700	0.60	E	13,800	0.60	E	13,800	0.60	E	13,700	0.60	E	13,700	0.60	E
14. Jackson Highway (SR 16) — Dillard Road to Stone House Road	2	12,100	0.53	D	11,900	0.52	D	11,800	0.52	D	11,900	0.52	D	11,800	0.52	D	11,800	0.52	D
15. Prairie City Road — U.S. 50 eastbound ramp to Easton Valley Parkway	2 (6)	5,900	0.35	D	25,200	0.49	D	22,300	0.44	D	22,700	0.45	D	27,700	0.54	D	28,100	0.55	D
16. Prairie City Road — Easton Valley Parkway to White Rock Road	2 (4)	5,900	0.35	D	15,600	0.46	D	14,700	0.43	D	15,700	0.46	D	16,500	0.49	D	16,100	0.47	D
17. Scott Road (West) — White Rock Road to Latrobe Road	2	2,100	0.12	B	3,800	0.22	C	3,700	0.22	C	3,600	0.21	C	3,800	0.22	C	3,800	0.22	C
18. Stone House Road — Latrobe Road to Jackson Highway (SR 16)	2	1,800	0.11	B	2,600	0.15	B	2,500	0.15	B	2,400	0.14	B	2,600	0.15	B	2,500	0.15	B
19. Sunrise Boulevard — Jackson Highway (SR 16) to Grant Line Road	2	13,300	0.58	D	13,400	0.59	D	13,500	0.59	E	13,500	0.59	E	13,500	0.59	E	13,600	0.59	E
20. White Rock Road — Fitzgerald Road to Grant Line Road	2	4,100	0.24	C	4,900	0.29	C	4,700	0.28	C	4,800	0.28	C	4,900	0.29	C	5,000	0.29	C
21. White Rock Road — Grant Line Road to Prairie City Road	2	11,500	0.68	E	15,500	0.91	E	15,100	0.89	E	14,900	0.88	E	15,400	0.91	E	15,300	0.90	E
22. White Rock Road — Prairie City Road to Scott Road (West)	2 (5)	7,600	0.45	D	10,500	0.21	A	9,500	0.19	A	9,700	0.19	A	9,800	0.20	A	9,900	0.20	A
23. White Rock Road — Scott Road (West) to Oak Avenue Parkway	2 (5)	7,600	0.45	D	11,900	0.24	A	10,800	0.22	A	10,800	0.22	A	11,200	0.22	A	11,200	0.22	A
24. White Rock Road — Oak Avenue Parkway to Scott Road (East)	2 (5)	7,600	0.45	D	11,500	0.23	A	10,900	0.22	A	11,000	0.22	A	11,200	0.22	A	11,500	0.23	A
25. White Rock Road — Scott Road (East) to Placerville Road	2 (5)	5,700	0.34	C	8,900	0.18	A	8,800	0.18	A	8,600	0.17	A	8,700	0.17	A	8,900	0.18	A
26. White Rock Road — Placerville Road to Empire Ranch Road	2 (5)	6,800	0.40	D	12,200	0.24	A	11,100	0.22	A	11,800	0.24	A	12,400	0.25	A	12,700	0.25	A
27. White Rock Road — Empire Ranch Road to Carson Crossing Road	2 (5)	6,800	0.40	D	13,900	0.28	A	12,800	0.26	A	13,500	0.27	A	13,300	0.27	A	14,100	0.28	A

Notes: LOS = level of service; SR = State Route; U.S. 50 = U.S. Highway 50; V/C = volume-to-capacity
Lanes: existing (project or alternative)
Bold indicates deficiency. Shaded areas indicate impact.
Source: Data provided by DKS Associates in 2009

Table 3A.15-19
Intersection Levels of Service — Existing Plus Project Conditions – City of Rancho Cordova

Intersection	Control	No Project Alternative				Proposed Project Alternative				No USACE Permit Alternative				Resource Impact Minimization				Centralized Development				Reduced Hillside Development			
		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
		V/C[1] or Delay[2]	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS
1. Sunrise Blvd / White Rock Road	Signalized	0.65	B	0.71	C	0.66	B	0.71	C	0.65	B	0.71	C	0.67	B	0.70	C	0.65	B	0.71	C	0.65	B	0.71	C
2. Fitzgerald Road / White Rock Road	All-way stop	14.7	B	16.4	C	17.4	C	18.6	C	16.5	C	31.0	D	17.3	C	18.8	C	17.8	C	18.0	C	18.5	C	19.5	C
3. Sunrise Blvd / Douglas Road	Signalized	0.78	C	0.68	B	0.79	C	0.69	B	0.79	C	0.69	B	0.78	C	0.68	B	0.79	C	0.69	B	0.79	C	0.69	B
4. Grant Line Road / Douglas Road	Side-street stop	23.8	C	18.2	C	28.4	D	30.3	D	30.8	D	31.0	D	23.7	C	28.5	D	30.2	D	31.3	D	26.9	D	30.2	D
5. Grant Line Road / Kiefer Blvd	All-way stop	11.7	B	14.4	B	18.7	C	21.8	C	18.4	C	21.6	C	17.2	C	19.9	C	19.4	C	22.4	C	19.8	C	22.4	C

Notes: LOS = level of service; V/C = volume-to-capacity
[1] V/C ratio is shown for signalized intersections. Delay is shown for unsignalized intersections.
[2] Worst-case delay reported for unsignalized, side-street-stop intersections; average intersection delay reported for all-way-stop intersections. Both delays are reported in seconds per vehicle.
Bold indicates deficiency. Shaded areas indicate impact.
Source: Data provided by DKS Associates in 2009

Table 3A.15-20
Roadway Segment Levels of Service — Existing Plus Project Conditions - City of Rancho Cordova

Roadway Segment	Lanes	No Project Alternative			Proposed Project Alternative			No USACE Permit Alternative			Resource Impact Minimization			Centralized Development			Reduced Hillside Development		
		Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS
1. Douglas Road — Sunrise Blvd to Grant Line Road	2	2,300	0.13	A	2,700	0.15	A	2,600	0.14	A	2,600	0.14	A	2,700	0.15	A	2,700	0.15	A
2. Sunrise Blvd — U.S. 50 EB ramps to Folsom Blvd	6	61,500	**1.14**	**F**	61,700	**1.14**	**F**	61,900	**1.15**	**F**	61,500	**1.14**	**F**	61,700	**1.14**	**F**	61,500	**1.14**	**F**
3. Sunrise Blvd — Folsom Blvd to White Rock Road	6	53,700	**0.99**	**E**	53,300	**0.99**	**E**	53,300	**0.99**	**E**	53,100	**0.98**	**E**	53,300	**0.99**	**E**	53,100	**0.98**	**E**
4. Sunrise Blvd — White Rock Road to Douglas Road	4	25,100	0.70	B	24,500	0.68	B	24,700	0.69	B	24,700	0.69	B	24,500	0.68	B	24,500	0.68	B
5. Sunrise Blvd — Douglas Road to Kiefer Blvd	4	20,000	0.56	A	19,300	0.54	A	19,400	0.54	A	19,500	0.54	A	19,400	0.54	A	19,300	0.54	A
6. Sunrise Boulevard — Kiefer Blvd to Jackson Highway (SR 16)	2	20,000	**1.11**	**F**	19,500	**1.08**	**F**	19,700	**1.09**	**F**	19,700	**1.09**	**F**	19,600	**1.09**	**F**	19,600	**1.09**	**F**
7. White Rock Road — Zinfandel Drive to Sunrise Blvd	6	21,100	0.39	A	21,000	0.39	A	21,000	0.39	A	21,300	0.39	A	21,000	0.39	A	21,000	0.39	A
8. White Rock Road — Sunrise Blvd to Fitzgerald Road	2	6,000	0.33	A	6,800	0.38	A	6,600	0.37	A	6,700	0.37	A	6,800	0.38	A	7,000	0.39	A
9. White Rock Road — Fitzgerald Road to Grant Line Road	2	4,100	0.24	C	4,900	0.29	C	4,700	0.28	C	4,800	0.28	C	4,900	0.29	C	5,000	0.29	C

Notes: LOS = level of service; SR = State Route; U.S. 50 = U.S. Highway 50; V/C = volume-to-capacity
[1] Not expected to be a through roadway for baseline conditions.
[2] Assumed to have high access control.
Bold indicates deficiency. Shaded areas indicate impact.
Source: Data provided by DKS Associates in 2009

Table 3A.15-21
Intersection Levels of Service — Existing Plus Project Conditions – El Dorado County

Intersection	Control	No Project Alternative				Proposed Project Alternative				No USACE Permit Alternative				Resource Impact Minimization				Centralized Development				Reduced Hillside Development			
		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
		Delay[1]	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. White Rock Road / Carson Crossing Road	Side-street stop	13.7	B	16.5	C	28.3	D	42.3	E	25.5	D	39.6	E	26.9	D	39.8	E	26.8	D	40.6	E	29.2	D	43.5	E
2. White Rock Road / Stonebriar Drive	Signalized	20.6	C	14.8	B	18.5	B	20.3	C	18.8	B	19.5	B	18.4	B	20.0	B	18.5	B	19.9	B	18.4	B	20.7	C
3. White Rock Road / Windfield Way	Side-street stop	43.9	E	**73.1**	**F**	38.6	E	**290.5**	**F**	33.0	D	**229.6**	**F**	36.3	E	**404.5**	**F**	33.9	D	**250.1**	**F**	37.6	E	**319.0**	**F**
4. White Rock Road / Latrobe Road	Signalized	22.7	C	31.8	C	28.6	C	31.9	C	29.2	C	31.6	C	29.4	C	31.7	C	29.4	C	31.8	C	29.6	C	31.7	C
5. White Rock Road / Valley View Parkway	Signalized	16.6	B	23.5	C	17.2	B	22.5	C	16.8	B	22.4	C	16.8	B	22.4	C	16.7	B	22.4	C	16.7	B	22.4	C
6. El Dorado Hills Blvd / Serrano Parkway	Signalized	32.1	C	25.4	C	31.5	C	25.5	C	31.6	C	25.4	C	31.5	C	25.4	C	31.5	C	25.4	C	31.5	C	25.4	C
7. El Dorado Hills Blvd / Saratoga Way	Signalized	21.6	C	53.3	D	22.8	C	52.6	D	22.7	C	52.7	D	22.7	C	52.9	D	22.7	C	52.1	D	22.8	C	53.1	D
8. El Dorado Hills Blvd / Park Drive	Signalized	11.6	B	13.1	B	11.4	B	12.9	B	11.5	B	12.9	B	11.5	B	12.9	B	11.5	B	12.9	B	11.4	B	12.9	B
9. Latrobe Road / Town Center Blvd	Signalized	14.6	B	40.1	D	15.9	B	63.1	E	15.9	B	64.6	E	16.0	B	40.3	D	15.9	B	64.2	E	15.9	B	62.4	E

Notes: LOS = level of service;
[1] Worst-case delay reported for unsignalized, side-street-stop intersections; average intersection delay reported for all-way-stop intersections. Both delays are reported in seconds per vehicle.
Bold indicates deficiency. Shaded areas indicate impact.
Source: Data provided by DKS Associates in 2009

Table 3A.15-22
Intersection Levels of Service — Existing Plus Project Conditions – Caltrans

Intersection	Control	No Project Alternative				Proposed Project Alternative				No USACE Permit Alternative				Resource Impact Minimization				Centralized Development				Reduced Hillside Development			
		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Hazel Avenue / Tributary - WB U.S. 50 ramps	Signalized	**>80**[1]	**F**	**>80**	**F**	**>83.6**[2]	**F**	**>83.8**[2]	**F**	**>82.7**[2]	**F**	**>84.2**[2]	**F**	**>82.1**[2]	**F**	**>81.3**[2]	**F**	**>82.8**[2]	**F**	**>83.3**[2]	**F**	**>83.9**[2]	**F**	**>83.6**[2]	**F**
2. Hazel Avenue / EB U.S. 50 ramps	Signalized	21.6	C	**>80**	**F**	20.2	C	**>82.5**[2]	**F**	20.6	C	**>82.9**[2]	**F**	20.6	C	**>83.1**[2]	**F**	20.4	C	**>82.3**[2]	**F**	20.4	C	**>83.8**[2]	**F**
3. Folsom Blvd / WB U.S. 50 ramps	Signalized	8.8	A	9.0	A	7.9	A	10.3	B	8.0	A	10.0	B	7.9	A	10.0	A	7.6	A	10.3	B	7.8	A	10.4	B
4. Folsom Blvd / EB U.S. 50 ramps	Signalized	21.7	C	34.2	C	45.6	D	**94.4**	**F**	43.3	D	**83.1**	**F**	47.8	D	**81.1**	**F**	48.8	D	**81.4**	**F**	44.5	D	78.7	E
5. Prairie City Road / WB U.S. 50 ramps	Signalized	20.7	C	12.8	B	30.0	C	15.3	B	27.5	C	15.6	B	27.5	C	14.1	B	29.6	C	14.8	B	29.9	C	14.9	B
6. Prairie City Road / EB U.S. 50 ramps	Signalized	17.7	B	17.3	B	15.7	B	14.8	B	15.8	B	15.4	B	15.7	B	16.9	B	15.6	B	15.6	B	15.7	B	15.5	B
7. East Bidwell Street / WB U.S. 50 ramps	Signalized	19.8	B	24.2	C	20.5	C	21.1	C	19.9	B	21.1	C	19.7	B	20.8	C	20.7	C	20.5	C	21.0	C	21.5	C
8. East Bidwell Street / EB U.S. 50 ramps	Signalized	18.0	B	17.4	B	14.5	B	18.1	B	13.9	B	16.2	B	13.3	B	16.5	B	13.8	B	16.6	B	13.8	B	17.0	B
9. El Dorado Hills Blvd / WB U.S. 50 ramps	Signalized	42.9	D	25.1	C	48.9	D	28.6	C	50.6	D	28.8	C	48.3	D	27.8	C	50.2	D	28.4	C	49.4	D	28.2	C
10. El Dorado Hills Blvd / EB U.S. 50 ramps	Signalized	35.7	D	33.3	C	27.7	C	16.1	B	34.6	C	29.0	C	34.3	C	29.3	C	34.3	C	30.1	C	34.3	C	29.5	C
11. Sunrise Blvd / Jackson Highway (SR16)	Signalized	58.4	E	39.8	D	62.7	E	39.9	D	62.2	E	42.1	D	61.4	E	41.4	D	63.9	E	42.1	D	64.8	E	41.7	D
12. Grant Line Road / Jackson Highway (SR16)	Signalized	**87.1**	**F**	76.0	E	**123.6**	**F**	**103.3**	**F**	**119.8**	**F**	**101.9**	**F**	**117.2**	**F**	**99.9**	**F**	**126.4**	**F**	**105.8**	**F**	**134.0**	**F**	**108.2**	**F**
13. Oak Avenue Parkway / WB U.S. 50 ramps	Signalized	NA	NA	NA	NA	10.2	B	7.1	A	8.2	A	5.2	A	6.9	A	5.5	A	10.0	A	5.7	A	9.4	A	6.6	A
14. Oak Avenue Parkway / EB U.S. 50 ramps	Signalized	NA	NA	NA	NA	18.5	B	19.6	B	18.7	B	20.3	C	18.3	B	20.3	C	18.7	B	19.7	B	18.4	B	19.7	B
15. Empire Ranch Road / WB U.S. 50 ramps	Signalized	NA	NA	NA	NA	14.7	B	12.8	B	14.6	B	12.4	B	13.9	B	12.2	B	14.5	B	13.2	B	15.6	B	12.9	B
16. Empire Ranch Road / EB U.S. 50 ramps	Signalized	NA	NA	NA	NA	15.9	B	18.7	B	16.1	B	18.8	B	15.6	B	18.8	B	14.9	B	19.1	B	15.7	B	18.9	B

Notes: LOS = level of service; Blank = intersection does not exist under this alternative
[1] LOS F by observation, accurate delay cannot be calculated.
[2] Calculated increase in delay.
Bold indicates deficiency. Shaded areas indicate impact.
Source: Data provided by DKS Associates in 2009

Table 3A.15-23
Freeway Mainline Levels of Service — Existing Plus Project Conditions - Caltrans

Freeway Segment	No Project Alternative				Proposed Project Alternative				No USACE Permit Alternative				Resource Impact Minimization				Centralized Development				Reduced Hillside Development			
	A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
	V/C[1]	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
EASTBOUND U.S. 50																								
1. Zinfandel Drive to Sunrise Blvd	0.72	C	0.99	E	0.76	D	**1.03**	**F**	0.76	D	**1.02**	**F**	0.75	D	1.02	F	0.76	D	**1.02**	**F**	0.76	D	**1.03**	**F**
2. Sunrise Blvd to Hazel Avenue	0.64	C	0.94	E	0.69	C	1.00	E	0.69	C	0.99	E	0.68	C	0.98	E	0.70	C	0.99	E	0.69	C	0.99	E
3. Hazel Avenue to Folsom Blvd	0.72	C	0.96	E	0.82	D	**1.07**	**F**	0.81	D	**1.04**	**F**	0.79	D	1.03	F	0.83	D	**1.04**	**F**	0.82	D	**1.06**	**F**
4. Folsom Blvd to Prairie City Road	0.67	C	**1.12**	**F**	0.89	D	**1.27**	**F**	0.88	D	**1.25**	**F**	0.85	D	**1.25**	**F**	0.90	D	**1.25**	**F**	0.90	E	**1.27**	**F**
5. Prairie City Road to Oak Avenue Parkway					0.65	C	0.94	E	0.66	C	0.92	E	0.64	C	0.92	E	0.65	C	0.92	E	0.66	C	0.93	E
6. Oak Avenue Parkway to E. Bidwell Street - Scott Road	0.66	C	**1.04**	**F**	0.55	C	0.81	D	0.55	C	0.78	D	0.54	C	0.78	D	0.54	C	0.78	D	0.55	C	0.80	D
7. E. Bidwell Street - Scott Road to Empire Ranch Road					0.53	C	0.88	D	0.53	B	0.88	D	0.52	B	0.87	D	0.52	B	0.87	D	0.53	C	0.88	D
8. Empire Ranch Road to El Dorado Hills Blvd – Latrobe Rd	0.50	B	0.80	D	0.55	C	0.84	D	0.55	C	0.84	D	0.54	C	0.83	D	0.54	C	0.84	D	0.55	C	0.85	D
9. El Dorado Hills Blvd – Latrobe Road to Bass Lake Grade	0.63	C	**1.06**	**F**	0.66	C	**1.09**	**F**	0.66	C	**1.08**	**F**	0.66	C	**1.08**	**F**	0.66	C	**1.09**	**F**	0.67	C	**1.09**	**F**
10. Bass Lake Grade to Bass Lake Road	0.46	B	0.78	D	0.49	B	0.81	D	0.48	B	0.80	D	0.49	B	0.80	D	0.49	B	0.81	D	0.49	B	0.81	D
WESTBOUND U.S. 50																								
11. Bass Lake Road to El Dorado Hills Blvd – Latrobe Road	0.94	E	0.49	B	0.97	E	0.53	B	0.96	E	0.52	B	0.96	E	0.52	B	0.97	E	0.53	B	0.96	E	0.53	B
12. El Dorado Hills Blvd – Latrobe Rd to Empire Ranch Rd					0.83	D	0.51	B	0.83	D	0.50	B	0.82	D	0.50	B	0.83	D	0.50	B	0.83	D	0.51	B
13. Empire Ranch Road to E. Bidwell Street - Scott Road	**1.04**	**F**	0.61	C	0.81	D	0.52	B	0.81	D	0.51	B	0.80	D	0.50	B	0.80	D	0.50	B	0.81	D	0.52	B
14. E. Bidwell Street - Scott Road to Oak Avenue Parkway					0.71	C	0.47	B	0.70	C	0.46	B	0.70	C	0.45	B	0.70	C	0.47	B	0.70	C	0.47	B
15. Oak Avenue Parkway to Prairie City Road	0.92	E	0.57	C	0.79	D	0.60	C	0.77	D	0.61	C	0.78	D	0.59	C	0.77	D	0.61	C	0.78	D	0.61	C
16. Prairie City Road to Folsom Blvd	**1.03**	**F**	0.73	C	**1.14**	**F**	0.92	E	**1.12**	**F**	0.91	E	**1.13**	**F**	0.87	D	**1.12**	**F**	0.92	E	**1.13**	**F**	0.92	E
17. Folsom Blvd to Hazel Avenue	0.88	D	0.62	C	0.95	E	0.73	C	0.93	E	0.74	C	0.94	E	0.70	C	0.94	E	0.73	C	0.95	E	0.73	C
18. Hazel Avenue to Sunrise Blvd	**1.01**	**F**	0.84	D	**1.02**	**F**	0.92	E	**1.02**	**F**	0.92	E	**1.03**	**F**	0.90	E	**1.03**	**F**	0.92	E	**1.02**	**F**	0.93	E
19. Sunrise Blvd to Zinfandel Drive	0.95	E	0.67	C	0.97	E	0.71	C	0.96	E	0.71	C	0.97	E	0.70	C	0.95	E	0.72	C	0.96	E	0.71	C

Notes: LOS = level of service; NA = not applicable; U.S. 50 = U.S. Highway 50; V/C = volume-to-capacity
1 Capacity based on 2200 vphpl for freeway lanes, 1600 vphpl for auxiliary lanes.
Bold indicates deficiency. Shaded areas indicate impact.
Source: Data provided by DKS Associates in 2009

Table 3A.15-24
Merge/Diverge/Weave Levels of Service — Existing Plus Project Conditions - Caltrans

Freeway Ramp	Merge, Diverge, or Weave Maneuver	No Project Alternative				Proposed Project Alternative				No USACE Permit Alternative				Resource Impact Minimization				Centralized Development				Reduced Hillside Development			
		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
		Density[1]	LOS[2]	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS
EASTBOUND U.S. 50																									
1. Hazel Avenue off-ramp	Diverge	14.2	B	27.1	C	15.1	B	28.2	D	15.3	B	27.8	C	14.9	B	27.9	C	15.4	B	27.9	C	15.2	B	28.1	D
2. Hazel Avenue on-ramp – Aerojet off-ramp	Weave	22.1	C	30.0	D	27.0	C	33.8	D	26.7	C	32.7	D	25.2	C	32.5	D	26.9	C	33.5	D	26.8	C	33.8	D
3. Folsom Blvd off-ramp	Diverge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4. Folsom Blvd on-ramp	Merge	29.0	D	**45.8**	**F**	**37.6**	**E**	**51.8**	**F**	**37.2**	**E**	**50.7**	**F**	**35.8**	**E**	**50.9**	**F**	**37.7**	**E**	**50.9**	**F**	**37.8**	**E**	**51.7**	**F**
5. Prairie City Road off-ramp	Diverge	29.9	D	**48.5**	**F**	**39.4**	**E**	**54.9**	**F**	**38.9**	**E**	**53.9**	**F**	**37.4**	**E**	**54.1**	**F**	**39.5**	**E**	**54.1**	**F**	**39.6**	**E**	**54.9**	**F**
6. Prairie City Road direct on-ramp	Merge	26.6	C	39.1	F	34.1	D	**46.1**	**F**	34.2	D	**45.0**	**F**	33.2	D	**45.1**	**F**	33.9	D	**44.8**	**F**	34.1	D	**45.7**	**F**
7. Prairie City Road flyover on-ramp	Merge	22.1	C	**36.2**	**F**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
8. Prairie City Rd on-ramp to Oak Avenue Parkway off-ramp	Weave	NA	NA	NA	NA	29.1	D	**48.2**	**F**	29.7	D	**47.0**	**F**	28.3	D	**46.6**	**F**	29.3	D	**46.3**	**F**	29.4	D	**47.1**	**F**
9. Oak Avenue Parkway loop on-ramp	Merge	NA	NA	NA	NA	26.6	C	**39.1**	**F**	26.4	C	**38.1**	**F**	26.0	C	**38.1**	**F**	25.9	C	**37.7**	**F**	26.0	C	**38.4**	**F**
10. Oak Avenue Parkway direct on-ramp	Merge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
11. E. Bidwell Street - Scott Road direct off-ramp	Diverge	19.1	B	**32.9**	**F**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
12. E. Bidwell Street - Scott Road loop on-ramp	Merge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
13. E. Bidwell Street - Scott Road direct on-ramp	Merge	14.0	B	22.8	C	15.6	B	27.4	C	15.4	B	27.4	C	15.0	B	26.7	C	15.3	B	27.2	C	15.8	B	27.5	C
14. Empire Ranch Road direct off-ramp	Diverge	NA	NA	NA	NA	18.7	B	27.0	C	18.7	B	27.0	C	18.3	B	26.6	C	18.3	B	26.6	C	18.8	B	27.1	C
15. Empire Ranch Road loop on-ramp	Merge	NA	NA	NA	NA	17.7	B	24.0	C	17.7	B	24.0	C	17.6	B	23.9	C	17.8	B	24.1	C	17.7	B	23.8	C
16. Empire Ranch Road direct on-ramp	Merge	NA	NA	NA	NA	18.3	B	26.4	C	18.1	B	26.1	C	17.9	B	25.9	C	17.9	B	26.0	C	18.4	B	26.5	C
17. Latrobe Road direct off-ramp	Diverge	27.5	C	34.9	D	28.7	D	36.3	E	28.6	D	36.1	E	28.4	D	35.9	E	28.4	D	36.1	E	28.7	D	36.3	E
18. El Dorado Hills Blvd loop off-ramp	Diverge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
19. El Dorado Hills Blvd - Latrobe Road on-ramp	Merge	28.4	D	**43.3**	**F**	29.6	D	**44.5**	**F**	29.4	D	**44.4**	**F**	29.4	D	**44.2**	**F**	29.5	D	**44.5**	**F**	29.7	D	**44.5**	**F**
WESTBOUND U.S. 50																									
20. El Dorado Hills Blvd Latrobe Road off-ramp	Diverge	**41.2**	**F**	23.7	C	**42.4**	**F**	25.2	C	**42.2**	**F**	25.0	C	**42.0**	**F**	24.9	C	**42.3**	**F**	25.1	C	**42.3**	**F**	25.2	C
21. El Dorado Hills Blvd Latrobe Road on-ramp	Merge	**41.7**	**F**	25.6	C	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
22. Empire Ranch Road direct off-ramp	Diverge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
23. Empire Ranch Road loop on-ramp	Merge	NA	NA	NA	NA	**35.8**	**F**	24.4	C	**35.6**	**F**	23.9	C	**35.4**	**F**	23.7	C	**34.8**	**F**	23.2	C	**35.4**	**F**	24.3	C
24. Empire Ranch Road direct on-ramp	Merge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
25. E. Bidwell Street - Scott Road direct off-ramp	Diverge	**30.8**	**F**	16.7	B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
36. E. Bidwell Street - Scott Road loop on-ramp	Merge	30.3	D	19.6	B	36.4	E	25.0	C	35.4	E	24.5	C	35.6	E	24.1	C	35.5	E	24.9	C	36.0	E	25.0	C
27. E. Bidwell Street - Scott Road direct on-ramp	Merge	**30.1**	**F**	17.2	B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
28. Oak Avenue Parkway off-ramp	Diverge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
29. Oak Avenue Parkway loop on-ramp	Merge	NA	NA	NA	NA	**35.5**	**F**	25.2	C	**34.4**	**F**	25.3	C	**34.7**	**F**	24.3	C	**34.4**	**F**	25.4	C	**35.0**	**F**	25.4	C
30. Oak Avenue Parkway direct on-ramp to Prairie City Road direct off-ramp	Weave	NA	NA	NA	NA	38.1	E	25.9	C	40.3	E	26.2	C	37.7	E	24.7	C	40.2	E	26.0	C	37.4	E	25.8	C
31. Prairie City Road direct off-ramp	Diverge	**40.4**	**F**	26.1	C	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
32. Prairie City Road loop on-ramp	Merge	37.9	E	25.9	C	**45.3**	**F**	36.7	E	**44.6**	**F**	36.3	E	**44.9**	**F**	34.9	D	**44.7**	**F**	37.1	E	**45.1**	**F**	36.8	E
33. Prairie City Road direct on-ramp	Merge	**36.8**	**F**	25.6	C	**40.8**	**F**	32.5	D	**40.2**	**F**	32.1	D	**40.5**	**F**	30.7	D	**40.3**	**F**	32.9	F	**40.7**	**F**	32.7	D
34. Folsom Blvd off-ramp	Diverge	**43.0**	**F**	32.6	D	**47.4**	**F**	40.3	E	**46.8**	**F**	39.9	E	**47.1**	**F**	38.3	E	**46.9**	**F**	**40.6**	**F**	**47.3**	**F**	**40.4**	**F**
35. Folsom Blvd on-ramp	Merge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
36. Hazel Avenue direct off-ramp	Diverge	16.9	B	11.2	B	19.4	B	15.2	B	18.7	B	15.2	B	18.8	B	13.8	B	18.8	B	14.9	B	19.2	B	14.9	B
37. Hazel Avenue loop on-ramp	Merge	21.8	C	14.3	B	23.3	C	17.0	B	23.1	C	17.0	B	23.2	C	16.3	B	23.1	C	16.9	B	23.2	C	17.2	B
38. Hazel Avenue direct on-ramp	Merge	**35.5**	**F**	23.6	C	**35.8**	**F**	25.9	C	**35.7**	**F**	26.0	C	**36.0**	**F**	25.4	C	**35.9**	**F**	25.9	C	**35.7**	**F**	26.2	C

Notes: LOS = level of service; NA = not applicable – a lane drops at off ramp or adds at on ramp; U.S. 50 = U.S. Highway 50; Blank = ramp does not exist under this alternative
[1] Density in passenger cars per mile per lane for merge/diverge analysis only.
[2] LOS computed using Highway Capacity Software (HCS) 2000 software for the merge/diverge/weave analysis consistent with *Highway Capacity Manual* (HCM) 2000 methodologies.
[3] Where an auxiliary lane begins at an on ramp (as an add lane) or where a auxiliary lane end at an off ramp (as an add lane)
Shaded areas indicate impact where calculation indicates that demand exceeds capacity.
Source: Data provided by DKS Associates in 2009

IMPACT 3A.15-1 Increases to Peak-Hour and Daily Traffic Volumes, Resulting in Unacceptable Levels of Service. *Implementation of development of the Project or build alternatives would cause an increase in a.m. peak-hour, p.m. peak-hour, and/or daily traffic volumes on area roadways, resulting in unacceptable LOS and warranting the need for improvements such as traffic signals and additional lanes.*

NP

Under the Existing No Project Alternative, no development beyond what currently exists is assumed. No off-site water facilities would be constructed. No new trips are generated under this scenario; therefore, there are no intersection, roadway segment, freeway mainline, or ramp merge / diverge / weaving area impacts. These impacts are less than those associated with the Proposed Project.

NCP, PP, RIM, CD, RHD

The sub-impacts and mitigation measures discussed below are specific to individual locations. These locations include only those intersections, roadways, freeway segments and freeway ramps where significant, direct impacts would occur.

Project Participation in Funding Transportation Improvements

a Within the project boundaries and the eastern half of Prairie City Road, the Applicant shall construct all feasible physical improvements necessary and available to reduce the severity of the project's significant transportation-related impacts, which may be subject to fee credits and/or reimbursement, coordinated by the City, from other fee-paying development projects if available with respect to roads or other facilities that would also serve those non-project fee-paying development projects Funding of improvements on the perimeter of the project boundaries will be shared with other development/jurisdictions.

b Outside the project boundaries, the Applicant shall be responsible for the project's fair share of feasible physical improvements necessary and available to reduce the severity of the project's significant transportation-related impacts within the City of Folsom, in other jurisdictions and on State facilities, based on "cumulative plus project conditions." For purposes of this measure, "cumulative plus project conditions" refers to development authorized under the project as well as development consistent with approved general plans, specific plans, and other entitlements in the City and other jurisdictions. In cases where the project's fair share contribution is identified, the share will be based on the project's relative contribution to traffic growth under "cumulative plus project conditions." The project's contribution toward such improvements may take any, or some combination, of the following forms:

1. Construction of roads, road improvements, or other transportation facilities outside the boundaries of the project, subject in some instances to fee credit against other improvements necessitated by the project or future reimbursement, coordinated by the City, from other fee-paying development projects if available where the roads or improvements at issue would also serve those non-project fee paying development projects;

2. The payment of impact fees to the City of Folsom in amounts that constitute the project's fair share contributions to the construction of transportation facilities to be built or improved within the City, consistent with the City's Capital Improvement Program ("CIP");

3. The payment of other adopted regional impact fees that would provide improvements to roadways, intersections and/or interchanges that are affected by multiple jurisdictions, except where the project applicant's payments of other fees or construction of improvements within the City of Folsom creates credit against the payment of regional impact fees;

4. The payment of impact fees to the City of Folsom in amounts that constitute the project's fair share contributions to the construction of transportation facilities and/or improvements within affected jurisdictions outside of Folsom, which payments to the City of Folsom and transmittal of fees to other agencies would occur through one or more enforceable agreements provided that for each required improvement, there is a reasonable mitigation plan that ensures that (i) the fees collected from the project will be used for their intended purposes, and (ii) the improvements will actually be built within a reasonable period of time, and

5. The payment of impact fees to the City of Folsom in amounts that constitute the project's fair share contributions to the construction of transportation facilities and/or improvements on federal or state highways or freeways needed in part because of the project, to be made available to the California Department of Transportation ("Caltrans") if and when Caltrans and the City of Folsom enter into an enforceable agreement consistent with state law provided that, for each required improvement, Caltrans has a reasonable mitigation plan that ensures that (i) the fees collected from the project will be used for their intended purposes, and (ii) the improvements will actually be built within a reasonable period of time.

c In pursuing a single agreement or multiple agreements with any jurisdictions outside of the City of Folsom that will be affected by traffic from the project in order to effectuate proposed mitigation measures for improvements outside the City of Folsom, the City will seek to negotiate in good faith with these other jurisdictions to enter into fair and reasonable arrangements with the intention of achieving, within a reasonable time period after approval of the project's, commitments for (i) the provision of adequate "fair share" mitigation payments from the project for out-of-jurisdiction traffic impacts and impacts on federal and state freeways and highways, and (ii) reciprocal payments from regional development projects to the City of Folsom to address cumulative "fair share" mitigation payments towards federal and state freeways and highways for transportation-related facilities and/or improvements within the City of Folsom necessitated by the development within the region. It is intended that these agreements shall permit the participating agencies flexibility in providing cross-jurisdictional credits and reimbursements consistent with the general "fair share" mitigation standard, and require an updated model run incorporating the best available information in order to obtain the most accurate, up-to-date impact assessment feasible and to generate the most accurate, up-to-date estimates of regional fair share contributions. Best efforts should be made to secure funding from federal, state and regional sources. These agreements, moreover, should also include provisions that allow for periodic updates to the traffic modeling on which fair share payment calculations depend in order to account for (i) newly approved projects cumulatively contributing to transportation-related impacts and that therefore should contribute to the funding of necessary improvements (ii) additional physical improvements necessitated in whole or in part by newly approved projects, (iii) changing cost calculations for the construction of needed improvements based on changes in the costs of materials, labor, and other inputs.

d If transportation improvements required to be constructed as mitigation are constructed prior to project implementation, the project will pay its fair share portion (as defined and explained in subsection [b] above) for those improvements prior to building permit issuance.

e In considering individual projects within the project area (e.g., small-lot tentative subdivision maps or similar discretionary non-residential approvals), the City of Folsom shall identify required improvements, and shall base its calculations for such projects' fair share payments, based on the most recent traffic modeling (i.e., modeling that accounts for (i) newly approved projects cumulatively contributing to transportation-related impacts and that therefore should contribute to the funding of necessary improvements, (ii) additional physical improvements necessitated in whole or in part by newly approved projects, and (iii) changing cost calculations for the construction of needed improvements based on changes in the costs of materials, labor, and other inputs).

The requirement that the Applicant participate in funding transportation improvements outside the City of Folsom would mitigate or substantially lessen the project's significant impact on roadways outside of the City but those

impacts would remain **significant and unavoidable**. This conclusion in part reflects the fact that, even with the installation of proposed improvements, some impacts (addressed specifically below under specific impact categories) will still remain significant because acceptable levels of service will not be achieved. This conclusion also reflects the reality, however, that successful implementation of some of the proposed improvements will require the cooperation of third party agencies (Sacramento and El Dorado Counties, the City of Rancho Cordova, and Caltrans) over which the City of Folsom has no control. For this latter reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

CITY OF FOLSOM

IMPACT 3A.15-1a — Unacceptable LOS at the Folsom Boulevard/Blue Ravine Road Intersection (Intersection 1). *Project or build alternative traffic would cause signalized intersection operations at the Folsom Boulevard/Blue Ravine Road intersection to deteriorate with an increase in delay of more than 5 seconds during either or both a.m./p.m. peak hours.*

NCP, PP, RIM, CD, RHD

This intersection operates at an unacceptable LOS D or worse during the a.m. and p.m. peak hours under existing conditions. Delay would increase by more than 5 seconds and **significantly impact** intersection operations during either or both a.m./p.m. peak hours under the project and all build alternatives. The impacts of the build alternatives would be similar to that of the project.

Mitigation Measure 3A.15-1a: The Applicant Shall Pay a Fair Share to Fund the Construction of Improvements to the Folsom Boulevard/Blue Ravine Road Intersection (Intersection 1).

To ensure that the Folsom Boulevard/Blue Ravine Road intersection operates at an acceptable LOS, the eastbound approach must be reconfigured to consist of two left-turn lanes, one through lane, and one right-turn lane. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the Folsom Boulevard/Blue Ravine Road intersection (Intersection 1).

Implementation: City of Folsom Public Works Department.

Timing: A phasing analysis shall be performed prior to approval of the first subdivision map to determine when the improvement should be implemented and when fair share funding should be paid.

Enforcement: City of Folsom Public Works Department

Implementation of Mitigation Measure 3A.15-1a would reduce the significant impact at Intersection 1 under the project and all build alternatives to a **less-than-significant** level. Implementation of the mitigation measure will reduce the a.m. delay to less than five seconds above the existing condition, and reduce the p.m. delay to less than the existing condition.

IMPACT 3A.15-1b Unacceptable LOS at the Sibley Street/ Blue Ravine Road Intersection (Intersection 2). *Project or build alternative traffic would cause signalized intersection operations at the Sibley Street/Blue Ravine Road intersection to deteriorate with an increase in delay of more than 5 seconds during the a.m. peak hour.*

NCP, RIM

The impact at this intersection under the No USACE Permit and Resource Impact Minimization alternatives **is less than significant.** This impact is less than that associated with the project.

Mitigation Measure: No mitigation measures are required.

PP, CD, RHD

This intersection operates at an unacceptable LOS D during the a.m. peak hour and at an acceptable LOS C during the p.m. peak hour under existing conditions. Delay would increase by more than 5 seconds and **significantly impact** intersection operations during the a.m. peak hour under the Proposed Project, Centralized Development and Reduced Hillside Development alternatives. The impacts of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-1b: The Applicant Shall Pay a Fair Share to Fund the Construction of Improvements at the Sibley Street/Blue Ravine Road Intersection (Intersection 2).

To ensure that the Sibley Street/Blue Ravine Road intersection operates at an acceptable LOS, the northbound approach must be reconfigured to consist of two left-turn lanes, two through lanes, and one right-turn lane. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the Sibley Street/Blue Ravine Road intersection (Intersection 2).

Implementation: City of Folsom Public Works Department.

Timing: A phasing analysis shall be performed prior to approval of the first subdivision map to determine when the improvement should be implemented and when fair share funding should be paid.

Enforcement: City of Folsom Public Works Department

Implementation of Mitigation Measure 3A.15-1b would reduce the significant impact on Intersection 2 under the Proposed Project, Centralized Development, Reduced Hillside Development alternatives to a **less-than-significant** level.

IMPACT 3A.15-1c Unacceptable LOS at the Scott Road (West)/White Rock Road Intersection (Intersection 28). *Unsignalized intersection operations at Scott Road (West)/White Rock Road would degrade to LOS D during the p.m. peak hour.*

NCP, PP, RIM, CD, RHD

This intersection operates at an acceptable LOS C during the a.m. and p.m. peak hours under existing conditions. Unsignalized intersection operations at Scott Road (West)/White Rock Road would degrade to LOS D during the p.m. peak hour under the project and all build alternatives. This is a **significant impact.** The impacts of these alternatives would be similar to that of the project.

Mitigation Measure 3A.15-1c: The Applicant Shall Fund and Construct Improvements to the Scott Road (West)/White Rock Road Intersection (Intersection 28).

To ensure that the Scott Road (West)/White Rock Road intersection operates at an acceptable LOS, a traffic signal must be installed. The applicant shall fund and construct these improvements.

Implementation: City of Folsom Public Works Department.

Timing: A phasing analysis shall be performed prior to approval of the first subdivision map to determine when the improvement should be implemented.

Enforcement: City of Folsom Public Works Department

Implementation of Mitigation Measure 3A.15-1c would reduce the significant impact on Intersection 28 under the project and all build alternatives to a **less-than-significant** level. Implementation of the mitigation measure will restore the LOS to the existing LOS C condition.

IMPACT 3A.15-1d LOS D at the Scott Road (East)/Easton Valley Parkway Intersection (Intersection 38). *Signalized intersection operations at Scott Road (East)/Easton Valley Parkway would operate at LOS D during the p.m. peak hour.*

NCP, RIM

This intersection would operate at LOS C conditions under the No USACE Permit and Resource Impact Minimization alternatives is **less than significant**. The impacts of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure: No mitigation measures are required.

PP, CD, RHD

This intersection does not currently exist; however, signalized intersection operations at Scott Road (East)/Easton Valley Parkway would operate at LOS D during the p.m. peak hour under the Proposed Project, Centralized Development, and Reduced Hillside Development alternatives.

The Specific Plan proposes an amended Level of Service policy within the project area (south of U.S. 50) as follows

> The City should strive to achieve at least a traffic Level of Service "C" within the Folsom South of U.S. 50 Specific Plan. For roadways and intersections within the Specific Plan, LOS "D" conditions may be considered on a case by case basis if improvements required to meet LOS "C" exceeds the "normally accepted maximum" improvements established by the City. Complete Streets principles require that streets and intersections be designed with all transportation modes in mind, and that the road widths, delays, and safety impacts to pedestrians and bicycles make larger roadways and intersections incompatible with this philosophy. Coupled with the limited reduction in vehicular delay that such improvements would provide, the City has determined that the benefits of excessively wide roadways and intersections do not outweigh the impacts to the community. Therefore, "normally accepted maximum" improvements on arterial roadways include three through-lanes in each direction; and at intersections includes two left-turn lanes, three through-lanes and one right-turn lane on an approach.

The number of travel lanes on the Scott Road (East)/Easton Valley Parkway intersection approaches would be at the "normally accepted maximum" levels with the project. Thus LOS "D" conditions would be acceptable at this intersection

The impact at this intersection is **less than significant.** The impacts of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.15-1e Unacceptable LOS at the Hillside Drive/Easton Valley Parkway Intersection (Intersection 41). *Unsignalized intersection operations at Hillside Drive/Easton Valley Parkway would be at LOS D during both a.m. and p.m. peak hours.*

NCP, PP, RIM, CD

The impact at this intersection under the No USACE Permit, Proposed Project, Resource Impact Minimization, and Centralized Development alternatives is **less than significant**. The impact of these alternatives is similar to that associated with the Proposed Project.

Mitigation Measure: No mitigation measures are required.

RHD

This intersection does not exist currently exist; however, unsignalized intersection operations at Hillside Drive/Easton Valley Parkway would operate at unacceptable LOS D during both a.m. and p.m. peak hours under the Reduced Hillside Development alternative. This impact is greater than the impact of the Proposed Project.

Mitigation Measure 3A.15-1e: Fund and Construct Improvements to the Hillside Drive/Easton Valley Parkway Intersection (Intersection 41).

To ensure that the Hillside Drive/Easton Valley Parkway intersection operates at an acceptable LOS, the eastbound approach must be reconfigured to consist of one dedicated left turn lane and two through lanes, and the westbound approach must be reconfigured to consist of two through lanes and one dedicated right-turn lane. The applicant shall fund and construct these improvements.

Implementation: City of Folsom Public Works Department.

Timing: A phasing analysis shall be performed prior to approval of the first subdivision map to determine when the improvement should be implemented.

Enforcement: City of Folsom Public Works Department

Implementation of Mitigation Measure 3A.15-1e would reduce the significant impact on Intersection 41 under the Reduced Hillside Development alternative to a **less-than-significant** level. Implementation of the mitigation measure will improve operations to a LOS C or better condition.

IMPACT 3A.15-1f Unacceptable LOS at the Oak Avenue Parkway/Middle Road Intersection (Intersection 44). *Unsignalized intersection operations at Oak Avenue Parkway/Middle Road would operate at unacceptable LOS D during either or both a.m./p.m. peak hours.*

NCP, RIM

There is no impact at this intersection under the No USACE Permit and Resource Impact Minimization alternatives. This impact is less than that associated with the Proposed Project.

Mitigation Measure: No mitigation measures are required.

PP, CD, RHD

This intersection does not exist currently exist; however, unsignalized intersection operations at Oak Avenue Parkway/Middle Road would operate at unacceptable LOS D during either or both a.m./p.m. peak hours under the Proposed Project, Centralized Development, and Reduced Hillside Development alternatives. This is a **significant impact.** The impacts of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-1f: Fund and Construct Improvements to the Oak Avenue Parkway/Middle Road Intersection (Intersection 44).

To ensure that the Oak Avenue Parkway/Middle Road intersection operates at an acceptable LOS, control all movements with a stop sign. The applicant shall fund and construct these improvements.

Implementation: City of Folsom Public Works Department.

Timing: A phasing analysis shall be performed prior to approval of the first subdivision map to determine when the improvement should be implemented.

Enforcement: City of Folsom Public Works Department

Implementation of Mitigation Measure 3A.15-1f would reduce the significant impact on Intersection 44 under the Reduced Hillside Development alternative to a **less-than-significant** level. Implementation of the mitigation measure will improve operations to a LOS C or better condition.

SACRAMENTO COUNTY INTERSECTIONS

Off-Site Elements

IMPACT 3A.15-1g Unacceptable LOS at the Hazel Avenue/Gold Country Blvd Intersection (Sacramento County Intersection 1). *Signalized intersection operations at Hazel Avenue/Gold Country Boulevard would deteriorate, with the volume-to-capacity ratio increasing by more than 0.05 during the p.m. peak hour.*

NCP, PP, RIM, RHD

The impact at this intersection under the No USACE Permit, Proposed Project, Resource Impact Minimization, and Reduced Hillside Development alternatives would be **less than significant**. The impact of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure: No mitigation measures are required.

CD

This intersection operates at an acceptable LOS B during the a.m. peak hour and at an unacceptable LOS F during the p.m. peak hour under existing conditions. Signalized intersection operations at Hazel Avenue/Gold Country Boulevard would deteriorate, with the v/c ration increasing by more than 0.05 during the p.m. peak hour under the Centralized Development alternative. To ensure that the Hazel Boulevard/Gold Country Boulevard intersection operates at an acceptable LOS, the planned widening of Hazel Avenue to six lanes from the Curragh Downs Drive intersection to the Gold Country Boulevard intersection is required. This will create a third receiving lane northbound and improve the northbound lane utilization; therefore, increasing the intersection capacity. Construction of the Hazel Avenue widening project, from Highway 50 to Curragh Downs Drive, has begun and is expected to be completed before the first phase of the project alternative is built. Thus this impact would be **less than significant.** The impact of this alternative would be greater than that of the Proposed Project.

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.15-1h Unacceptable LOS at the Hazel Avenue/Folsom Blvd Intersection (Sacramento County Intersection 2). *Signalized intersection operations at Hazel Avenue/Folsom Boulevard would deteriorate, with the volume-to-capacity ratio increasing by more than 0.05 during the p.m. peak hour.*

NCP, CD

This intersection operates at an acceptable LOS D or better during the a.m. and p.m. peak hours under existing conditions. Signalized intersection operations at Hazel Avenue/Folsom Boulevard would deteriorate under the No USACE Permit and Centralized Development alternatives to LOS F during the p.m. peak hour. This is a **significant impact**. The impact of these alternatives is greater than the impact of the Proposed Project.

Mitigation Measure 3A.15-1h: Participate in Fair Share Funding of Improvements to Reduce Impacts to the Hazel Avenue/Folsom Boulevard Intersection (Sacramento County Intersection 2).

To ensure that the Hazel Avenue/Folsom Boulevard intersection operates at an acceptable LOS, this intersection must be grade separated including "jug handle" ramps. No at grade improvement is feasible. Grade separating and extended (south) Hazel Avenue with improvements to the U.S. 50 / Hazel Avenue interchange is a mitigation measure for the approved Easton-Glenbrough Specific Plan development project. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to the Hazel Avenue/Folsom Boulevard intersection (Sacramento County Intersection 2).

Implementation: Sacramento County Public Works Department and Caltrans.

Timing: A phasing analysis shall be performed prior to approval of the first subdivision map to determine when the improvement should be implemented.

Enforcement: Sacramento County Public Works Department and Caltrans

Implementation of Mitigation Measure 3A.15-1h would reduce the significant impact at the Hazel Avenue/Folsom Boulevard Intersection under development of the No USACE Permit and Centralized Development alternatives to a less-than-significant level.

Until Sacramento County and Caltrans implements the improvements, the impact would be classified as significant but eventually would be reduced to a less-than-significant level once those improvements are constructed. Implementation of the mitigation measure will improve p.m. operations to a LOS D condition.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom would mitigate or substantially lessen the project's significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Sacramento County and Caltrans, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

PP, RIM, RHD

The impact at this intersection under the Proposed Project, Resource Impact Minimization and Reduced Hillside Development alternatives is **less than significant**. The impact of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.15-1i Unacceptable LOS at the Grant Line Road/White Rock Road Intersection (Sacramento County Intersection 3). *Delay at the unsignalized Grant Line Road/White Rock Road intersection would increase delay by more than 5 seconds during the a.m. and p.m. peak hours.*

NCP, PP, RIM, CD, RHD

This intersection operates at an acceptable LOS E during the a.m. peak hour and at an unacceptable LOS F during the p.m. peak hour under existing conditions. With the Proposed Project and build alternatives, the intersection would operate at LOS F during the a.m. peak hour, and delay would increase by more than 5 seconds during the p.m. peak hour. This would be a **significant impact**. The impact of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-1i: Participate in Fair Share Funding of Improvements to Reduce Impacts on the Grant Line Road/White Rock Road Intersection and to White Rock Road widening between the Rancho Cordova City limit to Prairie City Road (Sacramento County Intersection 3).

Improvements must be made to ensure that the Grant Line Road/White Rock Road intersection operates at an acceptable LOS. The currently County proposed White Rock Road widening project will widen and realign White Rock Road from the Rancho Cordova City limit to the El Dorado County line (this analysis assumes that the Proposed Project and build alternatives will widen White Rock Road to five lanes from Prairie City road to the El Dorado County Line). This widening includes improvements to the Grant Line Road intersection and realigning White Rock Road to be the through movement. The improvements include two eastbound through lanes, one eastbound right turn lane, two northbound left turn lanes, two northbound right turn lanes, two westbound left turn lanes and two westbound through lanes. This improvement also includes the signalization of the White Rock Road and Grant Line Road intersection. With implementation of this improvement, the intersection would operate at an acceptable LOS A. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to the Grant Line Road/White Rock Road intersection (Sacramento County Intersection 3).

Implementation: Sacramento County Public Works Department.

Timing: Before project build out. Design of the White Rock Road widening to four lanes, from Grant Line Road to Prairie City Road, with intersection improvements has begun, and because this widening project is environmentally cleared and fully funded, it's construction is expected to be complete before the first phase of the Proposed Project or alternative is built.

Enforcement: Sacramento County Public Works Department

Implementation of Mitigation Measure 3A.15-1i would reduce the significant impact on the Grant Line Road/White Rock Road Intersection under development of the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives to a less-than-significant level.

Until Sacramento County implements the improvements, the impact would be classified as significant but eventually would be reduced to a less-than-significant level once those improvements are constructed. Implementation of the mitigation measure will improve operations to a LOS A condition.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom would mitigate or substantially lessen the project's significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Sacramento County, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

SACRAMENTO COUNTY ROADWAY SEGMENTS

Off-Site Elements

IMPACT 3A.15-1j: Unacceptable LOS on Hazel Avenue between Madison Avenue and Curragh Downs Drive (Sacramento County Roadway Segment 10). *The volume-to-capacity ratio on this LOS F segment would increase by more than 0.05 with project-related traffic.*

NCP, RIM

The impact on this roadway segment under the No USACE Permit and Resource Impact Minimization alternatives is less than significant. The impact of these alternatives is less than that of the Proposed Project.

Mitigation Measure: No mitigation measures are required.

PP, CD, RHD

The volume-to-capacity ratio on this LOS F segment would increase by more than 0.05 under the Proposed Project, Centralized Development, and Reduced Hillside alternatives. This is a **significant impact**. The impact of these alternatives is similar to that of the Proposed Project.

Mitigation Measure 3A.15-1j: Participate in Fair Share Funding of Improvements to Reduce Impacts on Hazel Avenue between Madison Avenue and Curragh Downs Drive (Roadway Segment 10).

To ensure that Hazel Avenue operates at an acceptable LOS between Curragh Downs Drive and Gold Country Boulevard, Hazel Avenue must be widened to six lanes. This improvement is part of the County adopted Hazel Avenue widening project. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to Hazel Avenue between Madison Avenue and Curragh Downs Drive (Sacramento County Roadway Segment 10).

Implementation: Sacramento County Public Works Department.

Timing: Before project build out. Construction of phase two of the Hazel Avenue widening, from Madison Avenue to Curragh Downs Drive, is expected to be completed by year 2013, before the first phase of the Proposed Project or alternative is complete.

Enforcement: Sacramento County Public Works Department

Implementation of Mitigation Measure 3A.15-1j would reduce the significant impact on Hazel Avenue between Madison Avenue and Curragh Downs Drive under development of the Proposed Project, Centralized Development, and Reduced Hillside Development Alternatives to a less-than-significant level.

Until Sacramento County implements the improvement, the impact would be classified as significant but eventually would be reduced to a less-than-significant level once those improvements are constructed. Implementation of the mitigation measure will improve operations to a LOS D condition.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom would mitigate or substantially lessen the project's significant impact on this roadway segment but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Sacramento County, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

IMPACT 3A.15-1k Unacceptable LOS on Hazel Avenue between Curragh Downs Drive and Gold Country Boulevard (Sacramento County Roadway Segment 11). *Operations on this roadway segment would deteriorate, with an increase in the volume-to-capacity ratio of this LOS F segment by more than 0.05 under the project and all build alternatives.*

NCP, PP, RIM, CD, RHD

Operations on this roadway segment would deteriorate, with an increase in the volume-to-capacity ratio on this LOS F segment by more than 0.05 under the Proposed Project and all build alternatives. To ensure that Hazel Avenue operates at an acceptable LOS between Curragh Downs Drive and Gold Country Boulevard, Hazel Avenue must be widened to six lanes. Construction of phase one of the Hazel Avenue widening, from Highway 50 to Curragh Downs Drive, has begun and is expected to be completed before the first phase of the Proposed Project or alternative is built. Thus this impact is **less than significant**. The impact of these alternatives is similar to that of the Proposed Project.

Mitigation Measure: No mitigation measures are required.

CITY OF RANCHO CORDOVA INTERSECTIONS

All of the study intersections located in the City of Rancho Cordova operate at an acceptable LOS D or better during the a.m. and p.m. peak hours under the Proposed Project and all build alternatives. As there are no significantly impacted intersections when evaluated with the City of Rancho Cordova standards, no mitigation is necessary.

CITY OF RANCHO CORDOVA ROADWAY SEGMENTS

Three of the nine study roadway segments located in the City of Rancho Cordova currently and would continue to operate deficiently at an unacceptable LOS E or F during the a.m. and p.m. peak hours under all development alternatives; however, the volume-to-capacity increases under the Proposed Project and all build alternatives are less than 0.05, which is considered to be a less-than significant impact. As there are no significantly impacted roadway segments under all development alternatives when evaluated with the City of Rancho Cordova standards, no mitigation is necessary.

EL DORADO COUNTY INTERSECTIONS

Off-Site Elements

IMPACT 3A.15-1l — Unacceptable LOS at the White Rock Road/Windfield Way Intersection (El Dorado County Intersection 3). *Unsignalized intersection operations at White Rock Road/Windfield Way would degrade as the delay would increase by more than 5 seconds under unacceptable LOS F conditions during the p.m. peak traffic hour.*

NCP, PP, RIM, CD, RHD

Unsignalized intersection operations at the White Rock Road/Windfield Way intersection would degrade as the delay would increase by more than 5 seconds under unacceptable LOS F conditions during the p.m. peak traffic hour with project-related traffic under the Proposed Project and all build alternatives. This is a **significant impact.** The impact of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-1l: Participate in Fair Share Funding of Improvements to Reduce Impacts on the White Rock Road/Windfield Way Intersection (El Dorado County Intersection 3).

To ensure that the White Rock Road/Windfield Way intersection operates at an acceptable LOS, the intersection must be signalized and separate northbound left and right turn lanes must be striped. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to the White Rock Road/Windfield Way intersection (El Dorado County Intersection 3).

Implementation: El Dorado County Department of Transportation.

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: El Dorado County Department of Transportation

Implementation of Mitigation Measure 3A.15-1l would reduce the significant impact on the White Rock Road/Windfield Way Intersection to a less-than-significant level by improving intersection LOS under

development of the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives to a less-than-significant level.

Until El Dorado County implements the improvement, the impact would be classified as significant but eventually would be reduced to a less-than-significant level once those improvements are constructed. Implementation of the mitigation measure will improve operations to a LOS C condition.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom would mitigate or substantially lessen the project's significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of El Dorado County, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

CALTRANS INTERSECTIONS

Off-Site Elements

IMPACT 3A.15-1m — Unacceptable LOS at the Hazel Avenue/U.S. 50 Westbound Ramps Intersection (Caltrans Intersection 1). *Signalized intersection operations at Hazel Avenue/U.S. 50 westbound ramps would degrade as the delay increases with the addition of project or alternative traffic.*

NCP, PP, RIM, CD, RHD

Signalized intersection operations at Hazel Avenue/U.S. 50 westbound ramps operates at LOS F during the a.m. and p.m. peak traffic hour. With the addition of Proposed Project or alternative traffic, the delay would increase under the Proposed Project and all build alternatives. To ensure that the Hazel Avenue/U.S. 50 westbound ramps intersection operates at an acceptable LOS, the planned widening of Hazel Avenue to six lanes from the Curragh Downs Drive intersection to the Gold Country Boulevard intersection is required. Currently northbound p.m. peak hour traffic backs up into the Hazel Avenue/U.S. 50 westbound ramps intersection from the lane drop north of the Gold Country Boulevard intersection. The planned widening of Hazel Avenue to six lanes from the Madison Avenue intersection to the Gold Country Boulevard intersection would remove this downstream bottleneck and improve operations at this intersection to LOS C conditions. Construction of the Hazel Avenue widening project, from U.S. 50 to Curragh Downs Drive, has begun and is expected to be completed before the first phase of the project is built. Thus this impact is **less-than-significant.** The impact of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.15-1n — Unacceptable LOS at the Hazel Avenue/U.S. 50 Eastbound Ramps Intersection (Caltrans Intersection 2). *Signalized intersection operations at Hazel Avenue/U.S. 50 eastbound ramps would degrade as the delay would increase during the p.m. peak hour.*

NCP, PP, RIM, CD, RHD

Signalized intersection operations at Hazel Avenue/U.S. 50 eastbound ramps would operate at LOS F during the p.m. peak traffic hour, and the addition of Proposed Project or alternative traffic would increase the delay at the

intersection (by 2% or more) in the p.m. peak hour, which would increase the likelihood that vehicles on the eastbound off-ramp may backup on to the U.S. 50 mainline. To ensure that the Hazel Avenue/U.S. 50 eastbound ramps intersection operates at an acceptable LOS, the planned widening of Hazel Avenue to six lanes from the Curragh Downs Drive intersection to the Gold Country Boulevard intersection is required. Currently northbound p.m. peak hour traffic backs up into the Hazel Avenue/U.S. 50 eastbound ramps intersection from the lane drop north of the Gold Country Boulevard intersection. The planed widening of Hazel Avenue to six lanes from the Madison Avenue intersection to the Gold Country Boulevard intersection would remove this downstream bottleneck and improve operations at this intersection to LOS C conditions. Construction of the Hazel Avenue widening project, from U.S. 50 to Curragh Downs Drive, has begun and is expected to be completed before the first phase of the project is built. Thus this impact is **less than significant.** The impact of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.15-1o — Unacceptable LOS at the Folsom Boulevard/U.S. 50 Eastbound Ramps Intersection (Caltrans Intersection 4). *The signalized intersection of Folsom Boulevard/U.S. 50 eastbound ramps would degrade from an acceptable LOS C to an unacceptable LOS F during the p.m. peak traffic hour with project-related traffic.*

NCP, PP, RIM, CD, RHD

The signalized intersection of Folsom Boulevard/U.S. 50 eastbound ramps would degrade from an acceptable LOS C to an unacceptable LOS F during the p.m. peak traffic hour under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives. This is a **significant** impact**.** The impact of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-1o: Participate in Fair Share Funding of Improvements to Reduce Impacts on Eastbound U.S. 50 as an alternative to improvements at the Folsom Boulevard/U.S. 50 Eastbound Ramps Intersection (Caltrans Intersection 4).

- Congestion on eastbound U.S. 50 is causing vehicles to use Folsom Boulevard as an alternate parallel route until they reach U.S. 50, where they must get back on the freeway due to the lack of a parallel route. It is preferred to alleviate the congestion on U.S. 50 than to upgrade the intersection at the end of this reliever route.

- To ensure that the Folsom Boulevard/U.S. 50 eastbound ramps intersection operates at an acceptable LOS, auxiliary lanes should be added to eastbound U.S. 50 from Hazel Avenue to east of Folsom Boulevard. This was recommended in the Traffic Operations Analysis Report for the U.S. 50 Auxiliary Lane Project. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to the Folsom Boulevard/U.S. 50 Eastbound Ramps intersection (Caltrans Intersection 4).

Implementation: Caltrans

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: Caltrans

Implementation of Mitigation Measure 3A.15-1o would reduce the significant impact on the Folsom Boulevard/U.S. 50 eastbound ramp intersection to a less-than-significant level by improving intersection LOS under development of the No USACE Permit, Proposed Project, Centralized Development, and Reduced Hillside Development alternatives.

Until Caltrans implements the improvements, the impact would be classified as significant but eventually would be reduced to a less-than-significant level once those improvements are constructed. Implementation of the mitigation measure will improve operations to a LOS C condition.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom's control would mitigate or substantially lessen the project's significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Caltrans, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

IMPACT 3A.15-1p — Unacceptable LOS at the Grant Line Road/ State Route 16 Intersection (Caltrans Intersection 12). *The signalized intersection of Grant Line Road/State Route 16 would experience an increase in delay during the a.m. peak traffic hour and degrade to an unacceptable LOS F during the p.m. peak traffic hour.*

NCP, PP, RIM, CD, RHD

The signalized intersection of Grant Line Road/State Route 16 would experience an increase in delay under unacceptable LOS F conditions during the a.m. peak traffic hour, and degrade from an acceptable LOS E to an unacceptable LOS F during the p.m. peak traffic hour under the Proposed Project and all build alternatives. This is a **significant** impact**.** The impact of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-1p: Participate in Fair Share Funding of Improvements to Reduce Impacts on the Grant Line Road/ State Route 16 Intersection (Caltrans Intersection 12).

To ensure that the Grant Line Road/State Route 16 intersection operates at an acceptable LOS, the northbound and southbound approaches must be reconfigured to consist of one left-turn lane and one shared through/right-turn lane. Protected left-turn signal phasing must be provided on the northbound and southbound approaches. Improvements to the Grant Line Road/State Route 16 intersection are contained within the County Development Fee Program, and are scheduled for Measure A funding.

- Improvements to this intersection must be implemented by Caltrans, Sacramento County, and the City of Rancho Cordova.

The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to the Grant Line Road/SR 16 intersection (Caltrans Intersection 12).

Implementation: Caltrans, Sacramento County Department of Transportation and the City of Rancho Cordova Department of Public Works

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: Caltrans, Sacramento County Department of Transportation and the City of Rancho Cordova Department of Public Works

Implementation of Mitigation Measure 3A.15-1p would reduce the significant impact on Grant Line Road/State Route 16 intersection to a less-than-significant level by improving intersection LOS under development of the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives.

Until Caltrans, Rancho Cordova, and Sacramento County implement the improvements, the impact would be classified as significant but would be reduced to a less-than-significant level once those improvements are constructed. Implementation of the mitigation measure will improve operations to a LOS C condition.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom's control would mitigate or substantially lessen the project's significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Caltrans, Sacramento County and the City of Rancho Cordova, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

CALTRANS FREEWAY SEGMENTS

Off-Site Elements

IMPACT 3A.15-1q: Unacceptable LOS on Eastbound U.S. 50 between Zinfandel Drive and Sunrise Boulevard (Freeway Segment 1). *This freeway segment would degrade to an unacceptable LOS F during the p.m. peak hour.*

NCP, PP, RIM, CD, RHD

This freeway segment would degrade from an acceptable LOS E to an unacceptable LOS F during the p.m. peak hour under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives. This is a **significant** impact**.** The impact of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-1q: Participate in Fair Share Funding of Improvements to Reduce Impacts on Eastbound U.S. 50 between Zinfandel Drive and Sunrise Boulevard (Freeway Segment 1).

To ensure that Eastbound U.S. 50 operates at an acceptable LOS between Zinfandel Drive and Sunrise Boulevard, a bus-carpool (HOV) lane must be constructed. This improvement is currently planned as part of the Sacramento 50 Bus-Carpool Lane and Community Enhancements Project. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to Eastbound U.S. 50 between Zinfandel Drive and Sunrise Boulevard (Freeway Segment 1).

Implementation: Caltrans

Timing: Before project build out. Construction of the Sacramento 50 Bus-Carpool Lane and Community Enhancements Project is expected to be completed by year 2013, before the first phase of the Proposed Project or alternative is complete.

Enforcement: Caltrans

Implementation of Mitigation Measure 3A.15-1q would reduce the significant impact on Eastbound U.S. 50 between Zinfandel Drive and Sunrise Boulevard to a less-than-significant level by improving freeway segment LOS under development of the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives.

Until Caltrans implements the improvements, the impact would be classified as significant but would be reduced to a less-than-significant level once those improvements are constructed.. Implementation of the mitigation measure will improve operations to a LOS E condition.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom's control would mitigate or substantially lessen the project's significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Caltrans, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

IMPACT 3A.15-1r Unacceptable LOS on Eastbound U.S. 50 between Hazel Avenue and Folsom Boulevard (Freeway Segment 3). *This freeway segment would degrade to an unacceptable LOS F during the p.m. peak hour with project-related traffic.*

NCP, PP, RIM, CD, RHD

This freeway segment would degrade from an acceptable LOS E to an unacceptable LOS F during the p.m. peak hour under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives. This is a **significant** impact**.** The impact of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-1r: Participate in Fair Share Funding of Improvements to Reduce Impacts on Eastbound U.S. 50 between Hazel Avenue and Folsom Boulevard (Freeway Segment 3).

To ensure that Eastbound U.S. 50 operates at an acceptable LOS between Hazel Avenue and Folsom Boulevard, an auxiliary lane must be constructed. This improvement was recommended in the Traffic Operations Analysis Report for the U.S. 50 Auxiliary Lane Project. This improvement is included in the proposed 50 Corridor Mobility Fee Program. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to Eastbound U.S. 50 between Hazel Avenue and Folsom Boulevard (Freeway Segment 3).

Implementation: Caltrans

Timing: Before project build out. A phasing analysis should be performed to determine during which project phase the improvement should be built.

Enforcement: Caltrans

Implementation of Mitigation Measure 3A.15-1r would reduce the significant impact on Eastbound U.S. 50 between Hazel Avenue and Folsom Boulevard to a less-than-significant level by improving freeway segment LOS

under development of the No USACE Permit, Proposed Project, Centralized Development, and Reduced Hillside Development alternatives.

Until Caltrans implements the improvement, the impact would be classified as significant but would be reduced to a less-than-significant level once those improvements are constructed. Implementation of the mitigation measure will improve operations to a LOS D condition.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom's control would mitigate or substantially lessen the project's significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Caltrans, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

IMPACT 3A.15-1s: Unacceptable LOS on Eastbound U.S. 50 between Folsom Boulevard and Prairie City Road (Freeway Segment 4). *This freeway segment would degrade to an unacceptable LOS F during the p.m. peak hour and would experience an increase in the volume to capacity ratio under unacceptable LOS F conditions during the p.m. peak hour.*

NCP, PP, RIM, CD, RHD

This freeway segment would experience an increase in the volume-to-capacity ratio under unacceptable LOS F conditions during the p.m. peak hour with project-related traffic under the Proposed Project and all build alternatives. This is a **significant** impact**.** The impact of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-1s: Participate in Fair Share Funding of Improvements to Reduce Impacts on Eastbound U.S. 50 between Folsom Boulevard and Prairie City Road (Freeway Segment 4).

To ensure that Eastbound U.S. 50 operates at an acceptable LOS between Folsom Boulevard and Prairie City Road, an auxiliary lane must be constructed. This improvement was recommended in the Traffic Operations Analysis Report for the U.S. 50 Auxiliary Lane Project. This improvement is included in the proposed 50 Corridor Mobility Fee Program. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to Eastbound U.S. 50 between Folsom Boulevard and Prairie City Road (Freeway Segment 4).

Implementation: Caltrans

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: Caltrans

Implementation of Mitigation Measure 3A.15-1s would reduce the significant impact on Eastbound U.S. 50 between Folsom Boulevard and Prairie City Road to a less-than-significant level by improving freeway segment LOS under development of the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives.

Until Caltrans implements the improvement, the impact would be classified as significant but eventually would be reduced to a less-than-significant level once those improvements are constructed. Implementation of the mitigation measure will improve operations to a LOS E condition.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom's control would mitigate or substantially lessen the project's significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Caltrans, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

IMPACT 3A.15-1t — Unacceptable LOS on Eastbound U.S. 50 between El Dorado Hills Boulevard – Latrobe Road and Bass Lake Grade (Freeway Segment 9). *This freeway segment would experience an increase in the volume to capacity ratio under unacceptable LOS F conditions during the p.m. peak.*

NCP, PP, RIM, CD, RHD

This freeway segment would experience an increase in the volume to capacity ratio under unacceptable LOS F conditions during the p.m. peak hour under the project and all build alternatives. To ensure that Eastbound U.S. 50 operates at an acceptable LOS between El Dorado Hills Boulevard – Latrobe Road and Bass Lake Grade, the truck climbing lane and the bus-carpool (HOV) lane must be extended. Construction on this improvement has begun and is expected to be complete by the end of 2010, before the first phase of the Proposed Project or alternative is built. Thus this impact is **less than significant.** The impact of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.15-1u — Unacceptable LOS on Westbound U.S. 50 between Prairie City Road and Folsom Boulevard (Freeway Segment 16). *This freeway segment would experience an increase in the volume to capacity ratio under unacceptable LOS F conditions during the a.m. peak hour.*

NCP, PP, RIM, CD, RHD

This freeway segment would experience an increase in the volume-to-capacity ratio under unacceptable LOS F conditions during the a.m. peak hour with project-related traffic under the Proposed Project and all build alternatives. This is a **significant** impact**.** The impact of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-1u: Participate in Fair Share Funding of Improvements to Reduce Impacts on Westbound U.S. 50 between Prairie City Road and Folsom Boulevard (Freeway Segment 16).

To ensure that Westbound U.S. 50 operates at an acceptable LOS between Prairie City Road and Folsom Boulevard, an auxiliary lane must be constructed. This improvement was recommended in the Traffic Operations Analysis Report for the U.S. 50 Auxiliary Lane Project. This improvement is included in the proposed 50 Corridor Mobility Fee Program. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid

for by applicant, to reduce the impacts to Westbound U.S. 50 between Prairie City Road and Folsom Boulevard (Freeway Segment 16).

Implementation: Caltrans

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: Caltrans

Implementation of Mitigation Measure 3A.15-1u would reduce the significant impact on Westbound U.S. 50 between Prairie City Road and Folsom Boulevard to a less-than-significant level by improving freeway segment LOS under development of the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives.

Until Caltrans implements the improvement, the impact would be classified as significant but eventually would be reduced to a less-than-significant level once those improvements are constructed. Implementation of the mitigation measure will improve operations to LOS D.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom's control would mitigate or substantially lessen the project's significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Caltrans, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

IMPACT 3A.15-1v: Unacceptable LOS on Westbound U.S. 50 between Hazel Avenue and Sunrise Boulevard (Freeway Segment 18). *This freeway segment would experience an increase in the volume to capacity ratio under unacceptable LOS F conditions during the a.m. peak hour.*

NCP, PP, RIM, CD, RHD

This freeway segment would experience an increase in the volume-to-capacity ratio under unacceptable LOS F conditions during the a.m. peak hour with project-related traffic under the Proposed Project and all build alternatives. This is a **significant** impact**.** The impact of this alternative would be greater than that of the Proposed Project.

Mitigation Measure 3A.15-1v: Participate in Fair Share Funding of Improvements to Reduce Impacts on Westbound U.S. 50 between Hazel Avenue and Sunrise Boulevard (Freeway Segment 18).

To ensure that Westbound U.S. 50 operates at an acceptable LOS between Hazel Avenue and Sunrise Boulevard, an auxiliary lane must be constructed. This improvement was recommended in the Traffic Operations Analysis Report for the U.S. 50 Auxiliary Lane Project, and included in the proposed Rancho Cordova Parkway interchange project. Improvements to this freeway segment must be implemented by Caltrans. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to Westbound U.S. 50 between Hazel Avenue and Sunrise Boulevard (Freeway Segment 18).

Implementation: Caltrans

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement

Enforcement: Caltrans

Implementation of Mitigation Measure 3A.15-1v would reduce the significant impact on Eastbound U.S. 50 between Hazel Avenue and Sunrise Boulevard to a less-than-significant level by improving freeway segment LOS under development of the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives.

Until Caltrans implements the improvement, the impact would be classified as significant, but would be reduced to a less-than-significant level once those improvements are constructed. Implementation of the mitigation measure will improve operations to LOS D.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom's control would mitigate or substantially lessen the project's significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Caltrans, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

CALTRANS FREEWAY RAMP MERGE, DIVERGE AND WEAVING SECTIONS

Off-Site Elements

IMPACT 3A.15-1w: Unacceptable LOS at the U.S. 50 Eastbound / Folsom Boulevard Ramp Merge (Freeway Merge 4). *This freeway merge would experience an increase in density under unacceptable LOS F conditions during the p.m. peak hour.*

NCP, PP, RIM, CD, RHD

This freeway merge would experience an increase in density under unacceptable LOS F conditions during the p.m. peak hour under the Proposed Project and all build alternatives. This is a **significant** impact**.** The impact of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-1w: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Eastbound / Folsom Boulevard Ramp Merge (Freeway Merge 4).

To ensure that Eastbound U.S. 50 operates at an acceptable LOS at the Folsom Boulevard merge, an auxiliary lane from the Folsom Boulevard merge to the Prairie City Road diverge must be constructed. This improvement was recommended in the Traffic Operations Analysis Report for the U.S. 50 Auxiliary Lane Project. This improvement is included in the proposed 50 Corridor Mobility Fee Program. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to the U.S. 50 Eastbound/Folsom Boulevard Ramp Merge (Freeway Merge 4).

Implementation: Caltrans

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: Caltrans

Implementation of Mitigation Measure 3A.15-1w would reduce the significant impact on the U.S. 50 Eastbound / Folsom Boulevard Ramp Merge to a less-than-significant level by improving freeway merge LOS under development of the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives.

Until Caltrans implements the improvement, the impact would be classified as significant, but would be reduced to a less-than-significant level once those improvements are constructed. Implementation of the mitigation measure will improve operations to a LOS D condition.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom's control would mitigate or substantially lessen the project's significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Caltrans, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

IMPACT 3A.15-1x Unacceptable LOS at the U.S. 50 Eastbound / Prairie City Road Diverge (Freeway Diverge 5). *This freeway diverge would experience an increase in density under unacceptable LOS F conditions during the p.m. peak hour.*

NCP, PP, RIM, CD, RHD

This freeway diverge would experience an increase in density under unacceptable LOS F conditions during the p.m. peak hour under the Proposed Project and all build alternatives. This is a **significant** impact**.** The impact of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-1x: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Eastbound / Prairie City Road Diverge (Freeway Diverge 5).

To ensure that Eastbound U.S. 50 operates at an acceptable LOS at the Prairie City Road off-ramp diverge, an auxiliary lane from the Folsom Boulevard merge must be constructed. This improvement was recommended in the Traffic Operations Analysis Report for the U.S. 50 Auxiliary Lane Project. This auxiliary lane improvement is included in the proposed 50 Corridor Mobility Fee Program. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Eastbound/Prairie City Road diverge (Freeway Diverge 5).

Implementation: Caltrans

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: Caltrans

Implementation of Mitigation Measure 3A.15-1x would reduce the significant impact on the U.S. 50 Eastbound / Prairie City Road Diverge to a less-than-significant level by eliminating the diverge movement from the freeway mainline under development of the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives.

Until Caltrans implements the improvement, the impact would be classified as significant but eventually would be reduced to a less-than-significant level once those improvements are constructed. Implementation of the mitigation measure will improve operations to an acceptable condition. With the elimination of the diverge movement there is no specific LOS for the mitigated condition.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom's control would mitigate or substantially lessen the project's significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Caltrans, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

IMPACT 3A.15-1y — Unacceptable LOS at the U.S. 50 Eastbound / Prairie City Road Merge (Freeway Merge 6). *This freeway merge would degrade to an unacceptable LOS F during the p.m. peak hour.*

NCP, PP, RIM, CD, RHD

This freeway merge would degrade from an acceptable LOS E to an unacceptable LOS F during the p.m. peak hour under the Proposed Project and all build alternatives. This is a **significant** impact**.** The impact of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-1y: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Eastbound / Prairie City Road Direct Merge (Freeway Merge 6).

To ensure that Eastbound U.S. 50 operates at an acceptable LOS at the Prairie City Road on-ramp direct merge, an auxiliary lane to the East Bidwell Street – Scott Road diverge must be constructed. This auxiliary lane improvement is included in the proposed 50 Corridor Mobility Fee Program. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Eastbound/Prairie City Road direct merge (Freeway Merge 6).

Implementation: Caltrans

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: Caltrans

Implementation of Mitigation Measure 3A.15-1y would reduce the significant impact on the U.S. 50 Eastbound / Prairie City Road Direct Merge to a less-than-significant level by eliminating the merge movement from the

freeway mainline under development of the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives.

Until Caltrans implements the improvement, the impact would be classified as significant but would be reduced to a less-than-significant level once those improvements are constructed. Implementation of the mitigation measure will improve operations to an acceptable condition. With the elimination of the direct merge movement there is no specific LOS for the mitigated condition.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom's control would mitigate or substantially lessen the project's significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Caltrans, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

IMPACT 3A.15-1z: Unacceptable LOS at the U.S. 50 Eastbound / Prairie City Road Flyover On-Ramp to Oak Avenue Parkway Off-Ramp Weave (Freeway Weave 8). *This new freeway weave would operate an unacceptable LOS F during the p.m. peak hour.*

NCP, PP, RIM, CD, RHD

This new freeway weave would operate an unacceptable LOS F during the p.m. peak hour under the Proposed Project and all build alternatives. This is a **significant** impact**.** The impact of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-1z: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Eastbound / Prairie City Road Flyover On-Ramp to Oak Avenue Parkway Off-Ramp Weave (Freeway Weave 8).

To ensure that Eastbound U.S. 50 operates at an acceptable LOS at the Prairie City Road flyover on-ramp to Oak Avenue Parkway off-ramp weave, an improvement acceptable to Caltrans should be implemented to eliminate the unacceptable weaving conditions. Such an improvement may involve a "braided ramp". The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Eastbound/Prairie City Road flyover on-ramp to Oak Avenue Parkway off-ramp weave (Freeway Weave 8).

Implementation: Caltrans

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: Caltrans

Implementation of Mitigation Measure 3A.15-1z would reduce the significant impact on the U.S. 50 Eastbound / Prairie City Road Flyover On-Ramp to Oak Avenue Parkway Off-Ramp Weave to a less-than-significant level by improving intersection LOS under development of the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives.

Until Caltrans implements the improvement, the impact would be classified as significant but would be reduced to a less-than-significant level once those improvements are constructed. Implementation of the mitigation measure will improve operations to a LOS D condition.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom's control would mitigate or substantially lessen the project's significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Caltrans, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

IMPACT 3A.15-1aa — Unacceptable LOS at the U.S. 50 Eastbound / Oak Avenue Parkway Loop Merge (Freeway Merge 9).
This new freeway merge would operate an unacceptable LOS F during the p.m. peak.

NCP, PP, RIM, CD, RHD

This new freeway merge would operate an unacceptable LOS F during the p.m. peak hour under the Proposed Project and all build alternatives. This is a **significant** impact**.** The impact of these alternatives would be similar to that of the Proposed Project.

> Mitigation Measure 3A.15-1aa: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Eastbound / Oak Avenue Parkway Loop Merge (Freeway Merge 9).
>
> To ensure that Eastbound U.S. 50 operates at an acceptable LOS at the Oak Avenue Parkway loop merge, an auxiliary lane to the East Bidwell Street – Scott Road diverge must be constructed. This auxiliary lane improvement is included in the proposed 50 Corridor Mobility Fee Program. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Eastbound/ Oak Avenue Parkway loop merge (Freeway Merge 9).
>
> **Implementation:** Caltrans
>
> **Timing:** Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.
>
> **Enforcement:** Caltrans

Implementation of Mitigation Measure 3A.15-1aa would reduce the significant impact on the U.S. 50 Eastbound / Oak Avenue Parkway Loop Merge to a less-than-significant level by improving intersection LOS under development of the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives.

Until Caltrans implements the improvement, the impact would be classified as significant but eventually would be reduced to a less-than-significant level once those improvements are constructed. Implementation of the mitigation measure will improve operations to a LOS C condition.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom's control would mitigate or substantially lessen the project's

significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Caltrans, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

IMPACT 3A.15-1bb — Unacceptable LOS at the U.S. 50 Eastbound / El Dorado Hills Boulevard – Latrobe Road Merge (Freeway Merge 19). *This freeway merge would experience an increase in density under unacceptable LOS F conditions during the p.m. peak hour.*

NCP, PP, RIM, CD, RHD

This freeway merge would experience an increase in density under unacceptable LOS F conditions during the p.m. peak hour under the Proposed Project and all build alternatives. To ensure that Eastbound U.S. 50 operates at an acceptable LOS at the El Dorado Hills Boulevard – Latrobe Road Merge, a truck climbing lane and a bus-carpool (HOV) lane must be constructed to the Bass Lake Grade truck climbing lane. Construction on this improvement has begun and is expected to be complete by the end of 2010, before the first phase of the Proposed Project or alternative is built. Thus this impact is **less-than-significant** impact**.** The impact of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.15-1cc — Unacceptable LOS at the U.S. 50 Westbound / El Dorado Hills Boulevard Diverge (Freeway Diverge 20). *This freeway diverge would experience an increase in density under unacceptable LOS F conditions during the a.m. peak hour.*

NCP, PP, RIM, CD, RHD

This freeway diverge would experience an increase in density under unacceptable LOS F conditions during the a.m. peak hour with under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives. To ensure that Westbound U.S. 50 operates at an acceptable LOS at the El Dorado Hills Boulevard Diverge, a bus-carpool (HOV) lane from the Bass Lake Road merge must be constructed. This improvement is currently under construction. Construction on this improvement has begun and is expected to be complete before the first phase of the Proposed Project or alternative is built. Thus this impact is **less-than-significant** impact**.** The impact of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.15-1dd — Unacceptable LOS at the U.S. 50 Westbound / Empire Ranch Road Loop Ramp Merge (Freeway Merge 23). *This freeway merge would operate at an unacceptable LOS F during the a.m. peak hour.*

NCP, PP, RIM, CD, RHD

This new freeway merge would operate at an unacceptable LOS F during the a.m. peak hour under the Proposed Project and all build alternatives. This is a **significant** impact**.** The impact of this alternative would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-1dd: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Westbound / Empire Ranch Road Loop Ramp Merge (Freeway Merge 23).

To ensure that Westbound U.S. 50 operates at an acceptable LOS, the northbound Empire Ranch Road loop on ramp should start the westbound auxiliary lane that ends at the East Bidwell Street – Scott Road off ramp. The slip on ramp from southbound Empire Ranch Road would merge into this extended auxiliary lane. Improvements to this freeway segment must be implemented by Caltrans. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Westbound/Empire Ranch Road loop ramp merge (Freeway Merge 23).

Implementation: Caltrans

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: Caltrans

Implementation of Mitigation Measure 3A.15-1dd would reduce the significant impact on the U.S. 50 Westbound / Empire Ranch Road Loop Ramp Merge to a less-than-significant level by eliminating the merge movement from the freeway mainline under development of the Proposed Project and all the build alternatives.

Until Caltrans implements the improvement, the impact would be classified as significant but would be reduced to a less-than-significant level once those improvements are constructed. Implementation of the mitigation measure will improve operations to an acceptable condition. With the elimination of the direct merge movement there is no specific LOS for the mitigated condition.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom's control would mitigate or substantially lessen the project's significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Caltrans, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

IMPACT 3A.15-1ee — Unacceptable LOS at the U.S. 50 Westbound / Oak Avenue Parkway Loop Ramp Merge (Freeway Merge 29). *This freeway merge would operate at an unacceptable LOS F during the a.m. peak hour.*

NCP, PP, RIM, CD, RHD

This new freeway merge would operate at an unacceptable LOS F during the a.m. peak hour under the Proposed Project and all build alternatives. This is a **significant** impact**.** The impact of this alternative would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-1ee: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Westbound / Oak Avenue Parkway Loop Ramp Merge (Freeway Merge 29).

To ensure that Westbound U.S. 50 operates at an acceptable LOS, the northbound Oak Avenue Parkway loop on ramp should start the westbound auxiliary lane that ends at the Prairie City Road off ramp. The

slip on ramp from southbound Oak Avenue Parkway would merge into this extended auxiliary lane. Improvements to this freeway segment must be implemented by Caltrans. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Westbound/Oak Avenue Parkway loop ramp merge (Freeway Merge 29).

Implementation: Caltrans

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: Caltrans

Implementation of Mitigation Measure 3A.15-1ee would reduce the significant impact on the U.S. 50 Westbound / Oak Avenue Parkway Loop Ramp Merge to a less-than-significant level by eliminating the merge movement from the freeway mainline under development of the Proposed Project and all the build alternatives.

Until Caltrans implements the improvement, the impact would be classified as significant but would be reduced to a less-than-significant level once those improvements are constructed. Implementation of the mitigation measure will improve operations to an acceptable condition. With the elimination of the direct merge movement there is no specific LOS for the mitigated condition. As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom's control would mitigate or substantially lessen the project's significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Caltrans, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

IMPACT 3A.15-1ff: Unacceptable LOS at the U.S. 50 Westbound / Prairie City Road Loop Ramp Merge (Freeway Merge 32). *This freeway merge would degrade to an unacceptable LOS F during the a.m. peak hour.*

NCP, PP, RIM, CD, RHD

This freeway merge would degrade from an acceptable LOS E to an unacceptable LOS F during the a.m. peak hour under the Proposed Project and all of the build alternatives. This is a **significant** impact**.** The impact of this alternative would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-1ff: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Westbound / Prairie City Road Loop Ramp Merge (Freeway Merge 32).

To ensure that Westbound U.S. 50 operates at an acceptable LOS at the Prairie City Road loop ramp merge, an auxiliary lane to the Folsom Boulevard off ramp diverge must be constructed. This auxiliary lane improvement is included in the proposed 50 Corridor Mobility Fee Program. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Westbound/Prairie City Road Loop Ramp Merge (Freeway Merge 32).

Implementation: Caltrans

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: Caltrans

Implementation of Mitigation Measure 3A.15-1ff would reduce the significant impact on the U.S. 50 Westbound / Prairie City Road Loop Ramp Merge to a less-than-significant level by eliminating the merge movement from the freeway mainline under development of the Proposed Project and all of the build alternatives.

Until Caltrans implements the improvement, the impact would be classified as significant but would be reduced to a less-than-significant level once those improvements are constructed. Implementation of the mitigation measure will improve operations to an acceptable condition. With the elimination of the direct merge movement there is no specific LOS for the mitigated condition.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom's control would mitigate or substantially lessen the project's significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Caltrans, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

IMPACT 3A.15-1gg — Unacceptable LOS at the U.S. 50 Westbound / Prairie City Road Ramp Merge (Freeway Merge 33). *This freeway merge would experience an increase in density under unacceptable LOS F conditions during the a.m. peak hour.*

NCP, PP, RIM, CD, RHD

This freeway merge would experience an increase in density under unacceptable LOS F conditions during the a.m. peak hour under the Proposed Project and all of the build alternatives. This is a **significant** impact**.** The impact of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-1gg: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Westbound / Prairie City Road Direct Ramp Merge (Freeway Merge 33).

To ensure that Westbound U.S. 50 operates at an acceptable LOS at the Prairie City Road direct ramp merge, an auxiliary lane to the Folsom Boulevard off ramp diverge must be constructed. This auxiliary lane improvement is included in the proposed 50 Corridor Mobility Fee Program. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Westbound/Prairie City Road direct ramp merge (Freeway Merge 33).

Implementation: Caltrans

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: Caltrans

Implementation of Mitigation Measure 3A.15-1gg would reduce the significant impact the U.S. 50 Westbound / Prairie City Road Direct Ramp Merge to a less-than-significant level by improving freeway merge LOS under development of the Proposed Project and all build alternatives.

Until Caltrans implements the improvement, the impact would be classified as significant but would be reduced to a less-than-significant level once those improvements are constructed. Implementation of the mitigation measure will improve operations to a LOS C.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom's control would mitigate or substantially lessen the project's significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Caltrans, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

IMPACT 3A.15-1hh — Unacceptable LOS at the U.S. 50 Westbound / Folsom Boulevard Diverge (Freeway Diverge 34). *This freeway diverge would experience an increase in density under unacceptable LOS F conditions during the a.m. peak hour, and degrade from an acceptable LOS D to an unacceptable LOS F during the p.m. peak hour.*

NCP, PP, RIM, CD, RHD

This freeway diverge would experience an increase in density under unacceptable LOS F conditions during the a.m. peak hour under the Proposed Project and all build alternatives, and degrade from an acceptable LOS D to an unacceptable LOS F during the p.m. peak hour under the Centralized Development, Reduced Hillside Development alternatives. This is a **significant** impact**.** The impact of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-1hh: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Eastbound / Folsom Boulevard Diverge (Freeway Diverge 34).

To ensure that Westbound U.S. 50 operates at an acceptable LOS at the Folsom Boulevard Diverge, an auxiliary lane from the Prairie City Road loop ramp merge must be constructed. Improvements to this freeway segment must be implemented by Caltrans. This auxiliary lane improvement is included in the proposed 50 Corridor Mobility Fee Program. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Eastbound / Folsom Boulevard diverge (Freeway Diverge 34).

Implementation: Caltrans

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: Caltrans

Implementation of Mitigation Measure 3A.15-1hh would reduce the significant impact on the U.S. 50 Eastbound / Folsom Boulevard Diverge to a less-than-significant level by improving intersection LOS under development of

the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives.

Until Caltrans implements the improvement, the impact would be classified as significant but would be reduced to a less-than-significant level once those improvements are constructed. Implementation of the mitigation measure will improve operations to a LOS B.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom's control would mitigate or substantially lessen the project's significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Caltrans, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

IMPACT 3A.15-1ii Unacceptable LOS at the U.S. 50 Westbound / Hazel Avenue Ramp Merge (Freeway Merge 38). *This freeway merge would experience an increase in density under unacceptable LOS F conditions during the a.m. peak hour.*

NCP, PP, RIM, CD, RHD

This freeway merge would experience an increase in density under unacceptable LOS F conditions during the a.m. peak hour under the Proposed Project and all of the build alternatives. This is a **significant** impact**.** The impact of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-1ii: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Westbound / Hazel Avenue Direct Ramp Merge (Freeway Merge 38).

To ensure that Westbound U.S. 50 operates at an acceptable LOS at the Hazel Avenue direct ramp merge, an auxiliary lane to the Sunrise Boulevard off ramp diverge must be constructed. This auxiliary lane improvement is included in the proposed 50 Corridor Mobility Fee Program. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to the U.S. 50 Westbound/Hazel Avenue direct ramp merge (Freeway Merge 38).

Implementation: Caltrans

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: Caltrans

Implementation of Mitigation Measure 3A.15-1ii would reduce the significant impact the U.S. 50 Westbound / Hazel Avenue Direct Ramp Merge to a less-than-significant level by eliminating the merge movement from the freeway mainline under development of the Proposed Project and all build alternatives.

Until Caltrans implements the improvement, the impact would be classified as significant but would be reduced to a less-than-significant level once those improvements are constructed. Implementation of the mitigation measure

will improve operations to an acceptable condition. With the elimination of the direct merge movement there is no specific LOS for the mitigated condition.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom's control would mitigate or substantially lessen the project's significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Caltrans, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

IMPACT 3A.15-2 *Increased Demand for Single-Occupant Automobile Travel in the Project Area. Project implementation would increase demand for single-occupant automobile travel on area roadways and intersections causing roadway and intersection impacts.*

On-Site and Off-Site Elements

NCP, PP, RIM, CD, RHD

The project would add significant traffic to area roadways and intersections, increasing the demand for single-occupant automobile travel on area roadways and intersections, causing roadway and intersection impacts under all five development alternatives. This increase is considered a **significant** impact. The impacts of the alternatives are similar to that of the Proposed Project.

Mitigation Measure 3A.15-2a: Develop Commercial Support Services and Mixed-use Development Concurrent with Housing Development, and Develop and Provide Options for Alternative Transportation Modes.

The project applicant(s) for all project phases shall develop commercial and mixed-use development concurrent with housing development, to the extent feasible in light of market realities and other considerations, to internalize vehicle trips. Pedestrian and bicycle facilities shall be implemented to the satisfaction of the City Public Works Department. To further minimize impacts from the increased demand on area roadways and intersections, the project applicant(s) for all project phases shall develop and implement safe and secure bicycle parking at schools and commercial centers to promote alternative transportation uses and reduce the volume of single-occupancy vehicles using area roadways and intersections.

Implementation: City of Folsom and Applicant(s)

Timing: Before approval of improvement plans for all project phases.

Enforcement: City of Folsom Public Works Department.

The project applicant(s) for all project phases shall participate in capital improvements and operating funds for transit service to increase the percent of travel by transit. The project's fair-share participation and the associated timing of the improvements and service shall be identified in the project conditions of approval and/or the project's development agreement. Improvements and service shall be coordinated, as necessary, with Folsom Stage Lines and Sacramento RT.

Implementation: City of Folsom, Regional Transit, and Applicant(s)

Timing: As a condition of project approval and/or as a condition of the development agreement for all project phases.

Enforcement: City of Folsom Public Works Department.

Mitigation Measure 3A.15-2b: Participate in the City's Transportation System Management Fee Program.

The project applicant(s) for all project phases shall pay an appropriate amount into the City's existing Transportation System Management Fee Program to reduce the number of single-occupant automobile travel on area roadways and intersections.

Implementation: City of Folsom and Applicant(s)

Timing: Concurrent with construction for all project phases.

Enforcement: City of Folsom Public Works Department.

Mitigation Measure 3A.15-2c: Participate with the 50 Corridor Transportation Management Association.

The project applicant(s) for all project phases shall join and participate with the 50 Corridor Transportation Management Association to reduce the number of single-occupant automobile travel on area roadways and intersections.

Implementation: 50 Corridor Transportation Management Association and Applicant(s)

Timing: Concurrent with construction for all project phases.

Enforcement: City of Folsom Public Works Department.

Implementation of Mitigation Measure 3A.15-2a would reduce the demand of the single-occupant vehicle on area roadways and intersections. Implementation of Mitigation Measures 3A.15-2b and 3A.15-2c would promote usage of alternative transportation modes and increase the supply of these modes. Although the mitigation measures have the potential to substantially reduce the number of single-occupant vehicles, the project would continue to add single-occupant vehicles in the area and the impact would remain **significant and unavoidable**.

CUMULATIVE SCENARIOS

This section addresses impacts of the project under cumulative (2030) conditions. Impacts are identified when the project's incremental contribution is "cumulatively considerable" and thus is considered significant. Tables 3A.15-25 through 3A.15-33 summarize the results of the analyses.

Exhibits 3A.15-61 through 66, 3A.15-69 through 74, 3A.15-77 through 82, 3A.15-85 through 90, and 3A.15-93 through 98 present peak-hour traffic volumes, lane configurations, and traffic control under the Proposed Project, Resource Impact Minimization, Centralized Development, Reduced Hillside Development, and No USACE Permit alternatives, respectively. Exhibits 3A.15-67, 3A.15-75, 3A.15-83, 3A.15-91 and 3A.15-99 compare ADT volumes under Baseline No Project conditions with those under the Proposed Project, Resource Impact Minimization, Centralized Development, Reduced Hillside Development, and No USACE Permit alternatives, respectively. Exhibits 3A.15-68, 3A.15-76, 3A.15-84, 3A.15-92, and 3A.15-100 compare present freeway peak-hour traffic volumes and lane configurations under the Proposed Project, Resource Impact Minimization, Centralized Development, Reduced Hillside Development, and USACE Permit alternatives, respectively.

IMPACT 3A.15-3 **Potential Impacts Associated with the City's Transportation Impact Fee Program.** *The City of Folsom has a transportation impact fee program to implement roadway facilities (those identified in the City General Plan for implementation before Year 2030) within the city limits. However, this fee program does not cover the new roadway facilities that will be needed due to the Proposed Project or alternative.*

On-Site and Off-Site Elements

NCP, PP, RIM, CD, RHD

The City's fee transportation impact fee program does not cover the South of U.S. 50 area, or improvements within the existing City that will only be needed because of the Proposed Project or alternative. Measure W, passed by the City of Folsom voters, requires that all improvements required by the South of U.S. 50 Specific Plan be fully funded by the development in the SPA. Therefore, cumulative impacts identified require additional funding (beyond the current fee program) to mitigate the impacts. This is considered a **significant** impact. The impacts of the alternatives are similar to that of the Proposed Project.

Mitigation Measure 3A.15-3: Pay Full Cost of Identified Improvements that Are Not Funded by the City's Fee Program.

In accordance with Measure W, the project applicant(s) for all project phases shall fully fund improvements only required because of the Specific Plan.

Implementation: City of Folsom and Applicant(s)

Timing: As a condition of project approval and/or as a condition of the development agreement for all project phases.

Enforcement: City of Folsom Public Works Department.

Implementation of Mitigation Measure 3A.15-3 requires project applicants to fully fund all improvements only required by the Proposed Project or alternative. However, because ultimate funding of the improvements cannot be guaranteed and the City cannot guarantee implementation of the identified measures, the impact would remain **significant and unavoidable.** If the City is able to ultimately fully fund the fee program through fair-share contributions or external funding sources, the impact would be classified as significant in the short term but would be reduced to a less-than-significant level in the long term.

IMPACT 3A.15-4 **Increases to Peak-Hour and Daily Traffic Volumes, Resulting in Unacceptable Levels of Service, under Cumulative (2030) Conditions.** *Implementation of the Proposed Project (or alternatives) and other reasonably foreseeable development would cause an increase in a.m. peak traffic hour, p.m. peak traffic hour, and/or daily traffic volumes on area roadways, resulting in unacceptable LOS and warranting the need for improvements such as traffic signals and additional lanes under cumulative (2030) conditions.*

NP

Under the Cumulative No Project Alternative, no development beyond what currently exists is assumed. No off-site water facilities would be constructed under this scenario. No new trips are generated in the SPA under this scenario; therefore, there are no intersection, roadway segment, freeway mainline, or ramp merge / diverge / weaving area impacts by definition. These impacts are less than those associated with the Proposed Project.

The following sub-impacts and mitigation measures are specific to individual locations. These locations include only those intersections, roadways, freeway segments and freeway ramps where significant, direct impacts would occur.

Table 3A.15-25
Intersection Levels of Service — Cumulative (2030) Conditions – City of Folsom

Intersection	Control	No Project				Proposed Project				No USACE Permit Alternative				Resource Impact Minimization				Centralized Development				Reduced Hillside Development			
		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
		Delay[1]	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Folsom Blvd / Blue Ravine Road	Signalized	**49.4**	**D**	**64.0**	**E**	**49.5**	**D**	**64.4**	**E**	**50.2**	**D**	**63.7**	**E**	**49.9**	**D**	**63.8**	**E**	**50.3**	**D**	**64.1**	**E**	**49.5**	**D**	**64.0**	**E**
2. Sibley Street / Blue Ravine Road	Signalized	**48.0**	**D**	30.3	C	**55.0**	**D**	30.1	C	**52.4**	**D**	30.4	C	**52.5**	**D**	30.0	C	**54.8**	**D**	30.3	C	**55.1**	**E**	30.0	C
3. Oak Avenue Parkway / Blue Ravine Road	Signalized	**35.1**	**D**	**37.2**	**D**	**35.9**	**D**	**37.7**	**D**	**35.6**	**D**	**37.6**	**D**	**35.7**	**D**	**37.4**	**D**	**35.9**	**D**	**37.7**	**D**	**35.9**	**D**	**37.6**	**D**
4. Empire Ranch Road / Natoma Street	Signalized	10.2	B	8.8	A	24.9	C	9.3	A	25.7	C	9.3	A	24.6	C	9.1	A	25.2	C	9.1	A	25.3	C	9.3	A
5. Oak Avenue Parkway / Riley Street	Signalized	19.7	B	24.7	C	19.6	B	24.8	C	19.5	B	24.2	C	19.6	B	24.4	C	19.7	B	24.4	C	19.7	B	24.6	C
6. Oak Avenue Parkway / East Bidwell Street	Signalized	30.4	C	**40.8**	**D**	32.2	C	**48.6**	**D**	31.9	C	**48.1**	**D**	32.0	C	**47.4**	**D**	32.1	C	**48.8**	**D**	32.1	C	**49.2**	**D**
7. Nesmith Court / East Bidwell Street	Signalized	23.5	C	**54.8**	**D**	24.7	C	**62.6**	**E**	24.2	C	**62.2**	**E**	24.3	C	**60.9**	**E**	24.4	C	**62.8**	**E**	24.7	C	**61.6**	**E**
8. Scholar Way / East Bidwell Street	Signalized	12.6	B	14.3	B	12.4	B	16.2	B	12.6	B	15.0	B	12.5	B	14.6	B	12.6	B	15.6	B	12.6	B	16.8	B
9. Power Center Drive / East Bidwell Street	Signalized	8.1	A	18.8	B	7.0	A	17.7	B	7.1	A	18.1	B	7.0	A	18.0	B	7.1	A	18.2	B	7.2	A	17.8	B
10. Broadstone Parkway / East Bidwell Street	Signalized	27.1	C	31.5	C	28.2	C	33.1	C	27.7	C	32.9	C	27.6	C	32.9	C	28.0	C	33.0	C	28.2	C	33.1	C
11. Empire Ranch Road / Broadstone Parkway	Signalized	20.1	C	21.7	C	19.9	B	24.4	C	20.5	C	24.0	C	20.2	C	24.0	C	20.1	C	24.1	C	20.7	C	25.3	C
12. Oak Avenue Parkway / Haverhill Drive	Signalized	16.7	B	9.7	A	15.0	B	8.8	A	15.2	B	8.8	A	15.2	B	8.8	A	14.9	B	8.7	A	14.9	B	8.7	A
13. Oak Avenue Parkway / Halidon Way	Signalized	13.9	B	11.5	B	14.6	B	12.9	B	14.3	B	12.7	B	14.3	B	12.6	B	14.6	B	12.9	B	14.8	B	13.1	B
14. Folsom Blvd / Iron Point Road	Signalized	21.1	C	26.3	C	20.3	C	30.3	C	20.3	C	30.6	C	20.4	C	29.7	C	20.4	C	30.1	C	20.7	C	29.6	C
15. Prairie City Road / Iron Point Road	Signalized	24.8	C	32.3	C	24.9	C	30.6	C	24.7	C	30.1	C	24.7	C	30.3	C	25.1	C	30.4	C	25.2	C	30.6	C
16. Grover Road / Iron Point Road	Signalized	19.6	B	11.5	B	18.8	B	11.2	B	19.1	B	11.3	B	19.1	B	11.3	B	18.5	B	11.3	B	17.5	B	11.0	B
17. McAdoo Drive / Iron Point Road	Signalized	22.3	C	15.1	B	20.8	C	16.7	B	21.1	C	16.7	B	21.0	C	16.7	B	20.9	C	16.7	B	20.7	C	16.7	B
18. Oak Avenue Parkway / Iron Point Road	Signalized	31.4	C	**44.0**	**D**	32.6	C	**40.4**	**D**	32.7	C	**39.6**	**D**	32.2	C	**39.4**	**D**	33.1	C	**41.1**	**D**	33.3	C	**41.0**	**D**
19. Rowberry Drive / Iron Point Road	Signalized	10.0	A	9.7	A	27.1	C	32.0	C	25.0	C	28.1	C	25.2	C	27.7	C	25.8	C	29.1	C	26.2	C	29.2	C
20. Broadstone Parkway / Iron Point Road	Signalized	18.1	B	20.4	C	18.2	B	20.2	C	18.2	B	20.3	C	18.3	B	20.3	C	18.6	B	20.5	C	18.7	B	20.7	C
21. East Bidwell Street / Iron Point Road	Signalized	26.6	C	**60.6**	**E**	29.7	C	**77.0**	**E**	29.6	C	**76.2**	**E**	29.3	C	**75.4**	**E**	30.0	C	**81.4**	**F**	30.2	C	**83.0**	**F**
22. Cavitt Road / Iron Point Road	Signalized	14.8	B	21.5	C	12.9	B	21.6	C	13.3	B	21.6	C	13.4	B	21.6	C	12.8	B	21.5	C	12.8	B	21.5	C
23. Serpa Way / Iron Point Road	Signalized	24.2	C	**39.2**	**D**	24.3	C	**43.7**	**D**	24.1	C	**43.6**	**D**	24.2	C	**43.5**	**D**	24.3	C	**44.3**	**D**	24.4	C	**45.6**	**D**
24. Empire Ranch Road / Iron Point Road	Signalized	**80.5**	**F**	**60.7**	**E**	**82.2**	**F**	**79.9**	**E**	**73.2**	**E**	**76.1**	**E**	**68.3**	**E**	**71.3**	**E**	**72.7**	**E**	**71.4**	**E**	**84.2**	**F**	**84.2**	**F**
25. Prairie City Road / High School	Signalized	34.8	C	24.3	C	34.8	C	25.8	C	34.7	C	25.8	C	34.8	C	25.7	C	34.6	C	25.6	C	34.9	C	25.7	C
26. East Bidwell Street / Placerville Road	Signalized	446.2	F	1328.8	F	145.3	F	965.6	F	194.2	F	1053.7	F	213.9	F	1025.8	F	233.3	F	1179.4	F	**306.0**	**F**	**1209.8**	**F**
27. Prairie City Road / White Rock Road	Signalized	**61.8**	**E**	26.4	C	40.6	D	24.8	C	37.2	D	23.8	C	39.2	D	24.1	C	40.8	D	24.4	C	**41.8**	**D**	24.1	C
28. Scott Road (West) / White Rock Road	Signalized	37.2	D	9.8	A	36.0	D	10.2	B	34.4	C	10.2	B	34.1	C	9.9	A	34.6	C	10.3	B	**35.1**	**D**	10.4	B
29. Scott Road (East) / White Rock Road	Signalized	**63.9**	**E**	27.2	C	35.6	D	22.1	C	35.1	D	21.4	C	35.4	D	21.6	C	35.4	D	22.3	C	**36.5**	**D**	22.9	C
30. Placerville Road / White Rock Road	Side-street stop[2]	0.0	A	21.4	**C**	11.7	B	9.7	A	10.5	B	9.1	A	11.8	B	9.4	A	11.0	B	9.5	A	11.6	B	9.2	A
31. Empire Ranch Road / North Road	Signalized					10.6	B	18.3	B	13.6	B	23.3	C	11.4	B	19.5	B	14.5	B	25.4	C	15.2	B	24.6	C
32. Prairie City Road / Easton Valley Parkway	Signalized	14.2	B	18.5	B	32.1	C	32.6	C	29.6	C	31.5	C	29.0	C	31.0	C	32.3	C	32.7	C	32.6	C	32.6	C
33. Oak Avenue Parkway / Easton Valley Parkway	Signalized					37.3	D	30.3	C	33.1	C	29.7	C	32.1	C	30.0	C	37.5	D	30.2	C	**37.1**	**D**	30.6	C
34. Rowberry Drive / Easton Valley Parkway	Signalized					21.2	C	24.7	C	21.3	C	22.7	C	19.9	B	21.7	C	20.6	C	22.9	C	22.9	C	24.8	C
35. 1st Street / Easton Valley Parkway	Signalized					18.9	B	19.2	B	24.6	C	25.6	C	25.9	C	25.2	C	27.1	C	26.6	C	27.3	C	27.1	C
36. 2nd Street / Easton Valley Parkway	Signalized					25.0	C	28.6	C	23.8	C	26.5	C	22.2	C	24.1	C	22.3	C	24.1	C	22.5	C	24.0	C
37. 3rd Street / Easton Valley Parkway	Signalized					24.6	C	26.2	C	21.0	C	20.7	C	23.2	C	22.6	C	23.0	C	21.9	C	22.5	C	22.8	C
38. Scott Road (East) / Easton Valley Parkway	Signalized					31.2	C	41.2	D	31.0	C	34.4	C	29.0	C	32.5	C	32.4	C	37.6	D	33.3	C	**39.1**	**D**
39. Placerville Road / Easton Valley Parkway	Signalized					31.4	C	31.0	C	23.6	C	23.1	C	23.5	C	22.5	C	23.7	C	22.7	C	24.9	C	22.0	C
40. 4th Street / Easton Valley Parkway	Signalized					na	na	na	na	24.4	C	24.6	C	28.7	C	21.6	C	26.5	C	25.3	C	28.8	C	25.9	C

Table 3A.15-25
Intersection Levels of Service — Cumulative (2030) Conditions – City of Folsom

Intersection	Control	No Project				Proposed Project				No USACE Permit Alternative				Resource Impact Minimization				Centralized Development				Reduced Hillside Development			
		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
		Delay[1]	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
41. Hillside Drive / Easton Valley Parkway	Signalized					16.1	B	16.4	B	13.7	B	14.5	B	13.9	B	14.9	B	16.6	B	17.1	B	15.2	B	16.4	B
42. Empire Ranch Road / Easton Valley Parkway	Signalized					23.5	C	27.9	C	20.3	C	25.2	C	19.9	B	24.7	C	7.1	A	16.1	B	19.7	B	25.7	C
43. Prairie City Road / Middle Road	Signalized					8.1	A	11.0	B	5.5	A	10.0	A	6.2	A	9.7	A	7.2	A	10.6	B	10.2	B	11.2	B
44. Oak Avenue Parkway / Middle Road	Signalized					16.6	B	22.3	C	11.9	B	19.9	B	10.9	B	19.9	B	14.6	B	20.8	C	17.8	B	22.0	C
45. Scott Road (East) / Street “B”	Signalized					22.0	C	26.0	C	25.4	C	27.0	C	29.8	C	29.7	C	30.1	C	32.0	C	31.3	C	31.8	C
46. East Road / Street “B”	Signalized					24.6	C	24.3	C	14.0	B	15.1	B	21.1	C	21.3	C	24.1	C	22.3	C	25.4	C	23.8	C
47. Prairie City Road / Street “A”	Signalized					8.9	A	9.6	A	8.2	A	8.8	A	9.2	A	9.7	A	11.4	B	12.2	B	11.0	B	12.0	B
48. Oak Avenue Parkway / Street “A”	Signalized					24.6	C	27.6	C	21.3	C	27.1	C	22.0	C	26.9	C	25.8	C	28.8	C	26.9	C	29.0	C
49. 2nd Street / Street “A”	Signalized					18.0	B	18.4	B	19.2	B	19.1	B	20.9	C	22.2	C	21.3	C	22.2	C	22.7	C	23.4	C
50. Scott Road (East) / Street “A”	Signalized					22.9	C	22.2	C	19.2	B	19.2	B	26.9	C	26.2	C	27.6	C	26.0	C	30.4	C	29.5	C
51. East Road / Street “A”	Signalized					9.7	A	9.8	A	8.3	A	8.3	A	9.8	A	9.8	A	10.9	B	10.6	B	11.6	B	11.3	B
52. Placerville Road / Street “A”	Signalized					25.7	C	26.5	C	20.1	C	20.2	C	23.2	C	24.1	C	19.2	B	18.1	B	24.4	C	24.7	C
53. Empire Ranch Road / Street “A”	Signalized					14.9	B	14.1	B	13.5	B	12.7	B	15.4	B	13.7	B	4.4	A	4.6	A	12.1	B	11.3	B
54. Scott Road (East) / South Road	Signalized					18.8	B	20.7	C	14.7	B	18.8	B	16.1	B	19.0	B	19.1	B	21.1	C	22.7	C	23.8	C
55. Oak Avenue Parkway / White Rock Road	Signalized					27.3	C	27.1	C	24.6	C	27.4	C	24.2	C	27.0	C	26.0	C	29.6	C	26.3	C	28.3	C
56. Empire Ranch Road / White Rock Road	Signalized					28.9	C	17.7	B	24.3	C	18.0	B	24.9	C	19.0	B	23.5	C	17.7	B	25.1	C	19.1	B

Notes: LOS = level of service; U.S. 50 = U.S. Highway 50; V/C = volume-to-capacity; Blank = intersection does not exist under this alternative
[1] Average intersection delay reported for all-way-stop intersections; worst-case delay reported for unsignalized, side-street-stop intersections; average intersection delay reported for all-way-stop intersections. All delays are reported in seconds per vehicle.
[2] Intersection signalized with the proposed project.
Bold indicates deficiency. Shaded areas indicate impact.
Source: Data provided by DKS Associates in 2009

Table 3A.15-26
Intersection Levels of Service — Cumulative (2030) Conditions – Sacramento County

Intersection	Control	No Project				Proposed Project				No USACE Permit Alternative				Resource Impact Minimization				Centralized Development				Reduced Hillside Development			
		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
		V/C[1] or Delay[2]	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS
1. Hazel Avenue / Gold Country Blvd	Signalized	0.98	E	**1.25**	**F**	0.99	E	**1.27**	**F**	0.99	E	**1.27**	**F**	0.99	E	**1.26**	**F**	1.00	**F**	**1.27**	**F**	1.00	E	**1.27**	**F**
2. Hazel Avenue / Folsom Blvd	Signalized	0.78	C	0.81	D	0.76	C	0.83	D	0.77	C	0.84	D	0.77	C	0.83	D	0.76	C	0.84	D	0.76	C	0.84	D
3. Grant Line Road / White Rock Road	Signalized	0.96	E	0.90	D	**1.03**	**F**	0.97	E	**1.03**	**F**	0.97	E	**1.02**	**F**	0.97	E	**1.04**	**F**	0.97	E	**1.04**	**F**	0.97	E
4. Grant Line Road / Sunrise Blvd	Signalized	0.82	D	0.69	B	0.82	D	0.70	C	0.82	D	0.71	C	0.82	D	0.70	C	0.82	D	0.71	C	0.82	D	0.70	C
5. Hazel Avenue / Easton Valley Parkway	Signalized	0.41	A	0.68	B	0.45	A	0.71	C	0.44	A	0.71	C	0.45	A	0.70	C	0.45	A	0.72	C	0.45	A	0.73	C
6. Aerojet Road / Easton Valley Parkway	Signalized	0.32	A	0.59	A	0.40	A	0.76	C	0.39	A	0.74	C	0.38	A	0.74	C	0.40	A	0.75	C	0.41	A	0.76	C
7. Alabama Avenue / Easton Valley Parkway	Signalized	0.33	A	0.31	A	0.40	A	0.37	A	0.38	A	0.38	A	0.39	A	0.38	A	0.39	A	0.39	A	0.40	A	0.40	A
8. Glenborough Road / Easton Valley Parkway	Signalized	0.29	A	0.35	A	0.40	A	0.50	A	0.38	A	0.48	A	0.38	A	0.48	A	0.39	A	0.49	A	0.40	A	0.50	A

Notes: LOS = level of service; V/C = volume-to-capacity
[1] V/C ratio is shown for signalized intersections. Delay is shown for unsignalized intersections.
[2] Average intersection delay reported in seconds per vehicle.
Bold indicates deficiency. Shaded areas indicate impact.
Source: Data provided by DKS Associates in 2009

Table 3A.15-27
Roadway Segment Levels of Service — Cumulative (2030) Conditions - Sacramento County

Roadway Segment	Lanes	No Project			Proposed Project			No USACE Permit Alternative			Resource Impact Minimization			Centralized Development			Reduced Hillside Development		
		Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS
1. Folsom Blvd — Sunrise Blvd to Mercantile Drive	4	31,900	0.89	D	32,000	0.89	D	32,100	0.89	D	31,900	0.89	D	32,100	0.89	D	32,000	0.89	D
2. Folsom Blvd — Mercantile Drive to Hazel Avenue	4	22,700	0.63	B	23,200	0.64	B	23,000	0.64	B	23,100	0.64	B	23,200	0.64	B	23,200	0.64	B
3. Folsom Blvd — Hazel Avenue to Aerojet Road	4	8,000	0.22	A	8,900	0.25	A	8,700	0.24	A	8,600	0.24	A	8,800	0.24	A	8,800	0.24	A
4. Folsom Blvd — Aerojet Road to U.S. 50	4	26,300	0.73	C	25,400	0.71	C	25,300	0.70	C	25,300	0.70	C	25,400	0.71	C	25,500	0.71	C
5. Grant Line Road — White Rock Road to Centennial Road	4	57,600	**1.44**	**F**	65,100	**1.63**	**F**	64,800	**1.62**	**F**	64,100	**1.60**	**F**	65,000	**1.63**	**F**	65,000	**1.63**	**F**
6. Grant Line Road — Centennial Road to Douglas Road	4	55,500	**1.39**	**F**	62,000	**1.55**	**F**	61,800	**1.55**	**F**	61,100	**1.53**	**F**	62,000	**1.55**	**F**	62,000	**1.55**	**F**
7. Grant Line Road — Douglas Road to Keifer Blvd	4	57,000	**1.58**	**F**	60,800	**1.69**	**F**	60,700	**1.69**	**F**	60,400	**1.68**	**F**	60,800	**1.69**	**F**	60,800	**1.69**	**F**
8. Grant Line Road — Keifer Boulevard to Jackson Highway (SR 16)	4	37,600	**1.04**	**F**	39,500	**1.10**	**F**	39,400	**1.09**	**F**	39,100	**1.09**	**F**	39,400	**1.09**	**F**	39,400	**1.09**	**F**
9. Grant Line Road — Jackson Highway (SR 16) to Sunrise Boulevard	4	37,000	**1.03**	**F**	38,600	**1.07**	**F**	38,600	**1.07**	**F**	38,400	**1.07**	**F**	38,600	**1.07**	**F**	38,600	**1.07**	**F**
10. Hazel Avenue — Greenback Lane to Madison Avenue	6	56,300	**1.04**	**F**	56,800	**1.05**	**F**	56,900	**1.05**	**F**	57,000	**1.06**	**F**	57,000	**1.06**	**F**	57,000	**1.06**	**F**
11. Hazel Avenue — Madison Avenue to Curragh Downs Drive	6	76,700	**1.42**	**F**	78,900	**1.46**	**F**	78,700	**1.46**	**F**	78,200	**1.45**	**F**	78,900	**1.46**	**F**	78,800	**1.46**	**F**
12. Hazel Avenue — Curragh Downs Drive to Gold Country Blvd	6	88,000	**1.47**	**F**	91,300	**1.52**	**F**	91,000	**1.52**	**F**	90,600	**1.51**	**F**	91,300	**1.52**	**F**	91,200	**1.52**	**F**
13. Hazel Avenue — Gold Country Blvd to U.S. 50 westbound ramp	6	91,100	**1.52**	**F**	94,800	**1.58**	**F**	94,400	**1.57**	**F**	94,100	**1.57**	**F**	95,000	**1.58**	**F**	94,800	**1.58**	**F**
14. Jackson Highway (SR 16) — Grant Line Road to Dillard Road	2	13,200	0.58	D	12,900	0.56	D	12,900	0.56	D	12,900	0.56	D	12,800	0.56	D	12,900	0.56	D
15. Jackson Hgihway (SR 16) — Dillard Road to Stone House Road	2	16,400	0.72	E	16,500	0.72	E	16,500	0.72	E	16,500	0.72	E	16,500	0.72	E	16,500	0.72	E
16. Prairie City Road — U.S. 50 eastbound ramp to Easton Valley Parkway	4 - 6	35,700	0.99	E	39,500	0.73	C	37,000	0.69	B	36,900	0.68	B	41,000	0.76	C	41,100	0.76	C
17. Prairie City Road — Easton Valley Parkway to White Rock Road	2 - 4	25,100	**1.39**	**F**	37,200	**1.03**	**F**	37,100	**1.03**	**F**	37,700	**1.05**	**F**	38,400	**1.07**	**F**	38,100	**1.06**	**F**
18. Scott Road (West) — White Rock Road to Latrobe Road	2	3,900	0.23	C	5,700	0.34	C	5,700	0.34	C	5,600	0.33	C	5,800	0.34	C	5,800	0.34	C
19. Stonehouse Road — Latrobe Road to Jackson Highway (SR 16)	2	5,700	0.34	C	7,400	0.44	D	7,300	0.43	D	7,200	0.42	D	7,400	0.44	D	7,400	0.44	D
20. Sunrise Boulevard —Jackson Highway (SR 16) to Grant Line Road	6	22,300	0.62	B	22,500	0.63	B	22,500	0.63	B	22,500	0.63	B	22,500	0.63	B	22,500	0.63	B
21. White Rock Road — Villagio Parkway to Grant Line Road	4	15,800	0.44	A	19,900	0.55	A	19,400	0.54	A	19,600	0.54	A	19,800	0.55	A	20,000	0.56	A
22. White Rock Road — Grant Line Road to Prairie City Road	**4**	74,300	**1.86**	**F**	85,800	**2.15**	**F**	85,000	**2.13**	**F**	84,500	**2.11**	**F**	85,700	**2.14**	**F**	85,900	**2.15**	**F**
23. White Rock Road — Prairie City Road to Scott Road (West)	4 - 5	67,100	**1.68**	**F**	69,800	**1.40**	**F**	67,900	**1.36**	**F**	67,800	**1.36**	**F**	68,500	**1.37**	**F**	68,900	**1.38**	**F**
24. White Rock Road — Scott Road (West) to Oak Avenue Parkway	4 - 5	52,400	**1.31**	**F**	56,500	**1.13**	**F**	54,600	**1.09**	**F**	54,200	**1.08**	**F**	55,200	**1.10**	**F**	55,500	**1.11**	**F**
25. White Rock Road — Oak Avenue Parkway to Scott Road (East)	4 - 5	52,400	**1.31**	**F**	59,800	**1.20**	**F**	59,000	**1.18**	**F**	59,000	**1.18**	**F**	59,400	**1.19**	**F**	59,600	**1.19**	**F**
26. White Rock Road — Scott Road (East) to Placerville Road	4 - 5	29,500	0.74	C	30,300	0.61	B	29,400	0.59	A	29,300	0.59	A	29,900	0.60	A	30,600	0.61	B
27. White Rock Road — Placerville Road to Empire Ranch Road	4 - 5	34,500	0.86	D	38,000	0.76	C	38,000	0.76	C	38,300	0.77	C	39,800	0.80	C	40,300	0.81	D
28. White Rock Road — Empire Ranch Road to Carson Crossing Road	6	34,500	0.86	D	49,300	**0.99**	**E**	48,900	**0.98**	**E**	49,500	**0.99**	**E**	50,300	**1.01**	**F**	51,300	**1.03**	**F**
29. Hazel Avenue — Folsom Blvd connector to Easton Valley Parkway	6	17,600	0.33	A	19,000	0.35	A	18,500	0.34	A	18,600	0.34	A	18,800	0.35	A	19,000	0.35	A
30. Easton Valley Parkway — Hazel Avenue to Aerojet Road	6	31,300	0.58	A	34,200	0.63	B	33,700	0.62	B	33,600	0.62	B	34,200	0.63	B	34,300	0.64	B
31. Easton Valley Parkway — Aerojet Road to Alabama Avenue	6	19,600	0.36	A	27,300	0.51	A	26,100	0.48	A	26,100	0.48	A	27,100	0.50	A	27,500	0.51	A
32. Easton Valley Parkway — Alabama Avenue to Glenborough Road	6	15,400	0.29	A	23,700	0.44	A	22,400	0.41	A	22,400	0.41	A	23,400	0.43	A	23,900	0.44	A
33. Easton Valley Parkway — Glenborough Road to Prairie City Road	0 - 4	16,700	0.31	A	28,000	0.52	A	26,500	0.49	A	26,500	0.49	A	27,800	0.51	A	28,300	0.52	A

Notes: LOS = level of service; SR = State Route; U.S. 50 = U.S. Highway 50; V/C = volume-to-capacity
Lanes: Cumulative No Project – Cumulative Plus Project (or alternative)
Bold indicates deficiency. Shaded areas indicate impact.
Source: Data provided by DKS Associates in 2009

Table 3A.15-28
Intersection Levels of Service — Cumulative (2030) Conditions – City of Rancho Cordova

Intersection	Control	No Project				Proposed Project				No USACE Permit Alternative				Resource Impact Minimization				Centralized Development				Reduced Hillside Development			
		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
		V/C[1] or Delay[2]	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS
1. Sunrise Blvd / White Rock Road	Signalized	0.63	B	0.68	B	0.67	B	0.67	B	0.64	B	0.65	B	0.64	B	0.66	B	0.63	B	0.67	B	0.63	B	0.67	B
2. Fitzgerald Road / White Rock Road	Signalized	0.32	A	0.34	A	0.31	A	0.33	A	0.31	A	0.33	A	0.31	A	0.33	A	0.31	A	0.33	A	0.31	A	0.33	A
3. Sunrise Blvd / Douglas Road	Signalized	0.65	B	0.81	D	0.71	C	0.80	C	0.71	C	0.80	D	0.69	B	0.81	D	0.69	B	0.81	D	0.70	B	0.79	C
4. Grant Line Road / Douglas Road	Signalized	0.72	C	0.61	B	0.76	C	0.64	B	0.76	C	0.64	B	0.75	C	0.63	B	0.76	C	0.64	B	0.76	C	0.64	B
5. Grant Line Road / Kiefer Road	Signalized	0.85	D	0.63	B	0.86	D	0.65	B	0.86	D	0.65	B	0.86	D	0.64	B	0.86	D	0.65	B	0.86	D	0.64	B
6. Rancho Cordova Parkway / Easton Valley Parkway	Signalized	0.72	C	**0.99**	**E**	0.70	C	**0.96**	**E**	0.71	C	**0.96**	**E**	0.70	B	**0.97**	**E**	0.70	C	**0.96**	**E**	0.70	B	**0.96**	**E**
7. Rancho Cordova Parkway / White Rock Road	Signalized	**1.01**	**F**	0.87	D	**1.02**	**F**	0.87	D	**1.01**	**F**	0.86	D	**1.01**	**F**	0.87	D	**1.00**	**F**	0.87	D	**1.02**	**F**	0.87	D
8. International Drive / White Rock Road	Signalized	0.45	A	0.66	B	0.44	A	0.70	B	0.44	A	0.69	B	0.44	A	0.69	B	0.44	A	0.69	B	0.44	A	0.69	B
9. Rio Del Oro Parkway / White Rock Road	Signalized	0.52	A	0.36	A	0.54	A	0.37	A	0.54	A	0.36	A	0.54	A	0.37	A	0.54	A	0.37	A	0.55	A	0.37	A
10. Villagio Parkway / White Rock Road	Signalized	0.35	A	0.44	A	0.41	A	0.53	A	0.40	A	0.52	A	0.40	A	0.52	A	0.41	A	0.52	A	0.41	A	0.53	A
11. Sunrise Blvd /International Drive	Signalized	0.74	C	0.72	C	0.75	C	0.69	B	0.74	C	0.70	C	0.75	C	0.71	C	0.76	C	0.70	B	0.74	C	0.69	B
12. Villagio Parkway / Americanos Road	Signalized	0.58	A	0.56	A	0.58	A	0.63	B	0.57	A	0.63	B	0.57	A	0.61	B	0.57	A	0.62	B	0.57	A	0.63	B
13. Grant Line Road / Centennial Road	Signalized	0.84	D	0.67	B	0.89	D	0.74	C	0.89	D	0.74	C	0.88	D	0.73	C	0.89	D	0.74	C	0.89	D	0.74	C
14. Villagio Parkway / Rancho Cordova Parkway	Signalized	0.65	C	0.54	C	0.68	C	0.53	C	0.68	C	0.52	C	0.67	C	0.53	C	0.67	C	0.52	C	0.68	C	0.53	C
15. Rancho Cordova Parkway / Douglas Road	Signalized	0.49	A	0.77	C	0.50	A	0.76	C	0.50	A	0.76	C	0.50	A	0.76	C	0.50	A	0.76	C	0.50	A	0.77	C
16. Americanos Blvd / Douglas Road	Signalized	0.59	A	0.78	C	0.49	C	0.68	C	0.49	C	0.68	C	0.49	C	0.68	C	0.49	C	0.68	C	0.49	C	0.68	C
17. Grant Line Road / Chrysanthy Blvd	Signalized	0.87	D	0.64	B	0.90	D	0.65	B	0.90	D	0.65	B	0.89	D	0.65	B	0.90	D	0.65	B	0.90	D	0.65	B
18. Grant Line Road / Rancho Cordova Parkway	Signalized	0.53	A	0.39	A	0.55	A	0.41	A	0.55	A	0.41	A	0.54	A	0.40	A	0.55	A	0.41	A	0.55	A	0.41	A

Notes:
LOS = level of service; V/C = volume-to-capacity
[1] V/C ratio is shown for signalized intersections. Delay is shown for unsignalized intersections.
[2] Worst-case delay reported for unsignalized, side-street-stop intersections; average intersection delay reported for all-way-stop intersections. Both delays are reported in seconds per vehicle.
Bold indicates deficiency. Shaded areas indicate impact.
Source: Data provided by DKS Associates in 2009

Table 3A.15-29
Roadway Segment Levels of Service — Cumulative (2030) Conditions - City of Rancho Cordova

Roadway Segment	Lanes	No Project			Proposed Project			No USACE Permit Alternative			Resource Impact Minimization			Centralized Development			Reduced Hillside Development		
		Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS
1. Douglas Road — Sunrise Blvd to Villagio Parkway	6	30,100	0.56	A	29,700	0.55	A	30,000	0.56	A	29,800	0.55	A	29,800	0.55	A	29,900	0.55	A
2. Douglas Road — Villagio Parkway to Rancho Cordova Parkway	6	25,200	0.47	A	24,400	0.45	A	24,500	0.45	A	24,600	0.46	A	24,500	0.45	A	24,500	0.45	A
3. Douglas Road — Rancho Cordova Parkway to Americanos Road	6	13,900	0.26	A	13,300	0.25	A	13,300	0.25	A	13,500	0.25	A	13,400	0.25	A	13,400	0.25	A
4. Douglas Road — Americanos Road to Grant Line Road	6	15,300	0.28	A	15,200	0.28	A	15,200	0.28	A	15,400	0.29	A	15,200	0.28	A	15,300	0.28	A
5. Sunrise Blvd — U.S. 50 eastbound ramps to Folsom Blvd	8	79,300	**1.10**	**F**	79,200	**1.10**	**F**	79,100	**1.10**	**F**	79,200	**1.10**	**F**	78,900	**1.10**	**F**	78,900	**1.10**	**F**
6. Sunrise Blvd — Folsom Blvd to White Rock Road	6	49,900	**0.92**	**E**	49,400	**0.91**	**E**	49,400	**0.91**	**E**	49,400	**0.91**	**E**	49,400	**0.91**	**E**	49,400	**0.91**	**E**
7. Sunrise Blvd — White Rock Road to Douglas Road	6	34,200	0.63	B	33,500	0.62	B	33,700	0.62	B	33,600	0.62	B	33,600	0.62	B	33,600	0.62	B
8. Sunrise Blvd — Douglas Road to Keifer Blvd	6	35,500	0.66	B	35,600	0.66	B	35,700	0.66	B	35,500	0.66	B	35,700	0.66	B	35,600	0.66	B
9. Sunrise Boulevard — Keifer Boulevard to Jackson Highway (SR 16)	6	23,100	0.43	A	23,200	0.43	A	23,200	0.43	A	23,100	0.43	A	23,100	0.43	A	23,100	0.43	A
10. White Rock Road — Zinfandel Drive to Sunrise Boulevard	4	9,400	0.17	A	9,300	0.17	A	9,400	0.17	A	9,100	0.17	A	9,000	0.17	A	9,200	0.17	A
11. White Rock Road — Sunrise Blvd to Rancho Cordova Parkway	6	36,800	0.68	B	36,200	0.67	B	35,900	0.66	B	36,200	0.67	B	36,100	0.67	B	36,000	0.67	B
12. White Rock Road — Rancho Cordova Parkway to International Drive	6	13,900	0.39	A	13,500	0.38	A	13,300	0.37	A	13,400	0.37	A	13,500	0.38	A	13,500	0.38	A
13. White Rock Road — International Drive to Rio Del Oro Parkway	6	12,400	0.34	A	13,700	0.38	A	13,400	0.37	A	13,600	0.38	A	13,600	0.38	A	13,700	0.38	A
14. White Rock Road — Rio Del Oro Parkway to Villagio Parkway	4	10,200	0.28	A	12,200	0.34	A	11,700	0.33	A	12,000	0.33	A	12,100	0.34	A	12,300	0.34	A
15. White Rock Road — Villagio Parkway to Grant Line Road	4	15,800	0.44	A	19,900	0.55	A	19,400	0.54	A	19,600	0.54	A	19,800	0.55	A	20,000	0.56	A
16. Easton Valley Parkway — Rancho Cordova Parkway to Hazel Avenue	6	39,000	0.72	C	38,800	0.72	C	54,000	0.72	C	38,700	0.72	C	38,800	0.72	C	38,800	0.72	C
17. Rancho Cordova Parkway — Easton Valley Parkway to International Drive	6	51,100	**0.95**	**E**	49,600	**0.92**	**E**	54,000	**0.92**	**E**	49,500	**0.92**	**E**	49,600	**0.92**	**E**	49,700	**0.92**	**E**
18. Rancho Cordova Parkway — International Drive to White Rock Road	6	41,400	0.77	C	40,800	0.76	C	54,000	0.75	C	40,700	0.75	C	40,700	0.75	C	40,800	0.76	C
19. International Drive — White Rock Road to Americanos Parkway	6	17,900	0.33	A	18,900	0.35	A	54,000	0.35	A	18,800	0.35	A	18,900	0.35	A	18,900	0.35	A
20. International Drive — Americanos Parkway to Rancho Cordova Parkway	6	33,600	0.62	B	34,000	0.63	B	54,000	0.63	B	34,100	0.63	B	33,900	0.63	B	34,000	0.63	B
21. International Drive — Rancho Cordova Parkway to Sunrise Blvd	6	31,700	0.59	A	31,700	0.59	A	54,000	0.59	A	31,900	0.59	A	31,800	0.59	A	31,900	0.59	A
22. Villagio Parkway — White Rock Road to Americanos Parkway	2	5,700	0.32	A	7,800	0.43	A	18,000	0.43	A	7,600	0.42	A	7,700	0.43	A	7,800	0.43	A
23. Villagio Parkway — Americanos Parkway to Rancho Cordova Parkway	2	10,700	0.59	A	11,900	0.66	B	18,000	0.66	B	11,800	0.66	B	11,800	0.66	B	11,800	0.66	B
24. Villagio Parkway — Rancho Cordova Parkway to Douglas Road	2	12,200	0.68	B	13,000	0.72	C	18,000	0.73	C	12,900	0.72	C	12,900	0.72	C	13,000	0.72	C

Notes: LOS = level of service; SR = State Route; U.S. 50 = U.S. Highway 50; V/C = volume-to-capacity
[1] Not expected to be a through roadway for baseline conditions.
[2] Assumed to have high access control.
Bold indicates deficiency. Shaded areas indicate impact.
Source: Data provided by DKS Associates in 2009

Table 3A.15-30
Intersection Levels of Service — Cumulative (2030) Conditions – El Dorado County

Intersection	Control	No Project				Proposed Project				No USACE Permit Alternative				Resource Impact Minimization				Centralized Development				Reduced Hillside Development			
		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
		Delay[1]	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. White Rock Road / Carson Crossing Road	Signalized	27.7	C	22.6	C	**100.8**	**F**	35.1	D	**90.5**	**F**	42.9	D	**96.3**	**F**	46.8	D	**95.2**	**F**	48.0	D	**97.2**	**F**	48.3	D
2. White Rock Road / Stonebriar Drive	Signalized	15.4	B	11.2	B	15.1	B	10.4	B	15.8	B	10.5	B	15.5	B	10.5	B	15.4	B	10.4	B	15.0	B	10.3	B
3. White Rock Road / Windfield Way	Signalized	23.9	C	29.6	C	24.5	C	31.3	C	24.5	C	33.4	C	24.4	C	31.6	C	23.5	C	32.3	C	23.8	C	34.0	C
4. White Rock Road / Latrobe Road	Signalized	40.1	D	32.0	C	37.4	D	29.9	C	38.0	D	30.0	C	37.2	D	30.1	C	37.1	D	30.2	C	37.4	D	30.3	C
5. White Rock Road / Valley View Parkway	Signalized	35.3	D	**81.1**	**F**	42.6	D	65.5	E	43.1	D	66.0	E	45.0	D	62.5	E	42.7	D	64.8	E	46.6	D	63.5	E
6. El Dorado Hills Blvd / Serrano Parkway	Signalized	48.2	D	25.6	C	35.9	D	26.2	C	36.7	D	26.2	C	36.0	D	26.1	C	36.6	D	26.2	C	36.5	D	26.0	C
7. El Dorado Hills Blvd / Saratoga Way	Signalized	42.5	D	40.2	D	30.5	C	43.5	D	31.0	C	42.8	D	30.6	C	42.4	D	31.4	C	42.1	D	32.7	C	42.3	D
8. El Dorado Hills Blvd / Park Drive	Signalized	30.7	C	29.5	C	24.7	C	27.2	C	24.8	C	26.9	C	24.4	C	26.6	C	24.3	C	27.1	C	24.9	C	27.1	C
9. Latrobe Road / Town Center Blvd	Signalized	35.0	D	**95.5**	**F**	34.0	C	77.5	E	34.4	C	77.1	E	34.1	C	74.3	E	34.3	C	76.6	E	34.1	C	76.6	E

Notes: LOS = level of service;
Bold indicates deficiency. Shaded areas indicate impact.
Source: Data provided by DKS Associates in 2009

Table 3A.15-31
Intersection Levels of Service — Cumulative (2030) Conditions – Caltrans

Intersection	Control	No Project				Proposed Project				No USACE Permit Alternative				Resource Impact Minimization				Centralized Development				Reduced Hillside Development			
		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Hazel Avenue / Tributary - WB U.S. 50 ramps	Signalized	28.7	C	**94.1**	**F**	44.0	D	**102.3**	**F**	41.9	D	**102.1**	**F**	42.9	D	**100.1**	**F**	46.1	D	**105.8**	**F**	46.0	D	**102.8**	**F**
2. Hazel Avenue / EB U.S. 50 ramps	Signalized	43.8	D	**152.4**	**F**	36.5	D	**147.3**	**F**	37.0	D	**146.6**	**F**	37.5	D	**150.6**	**F**	36.0	D	**148.2**	**F**	35.6	D	**145.5**	**F**
3. Folsom Blvd / WB U.S. 50 ramps	Signalized	8.4	A	13.3	B	6.3	A	10.7	B	6.2	A	10.8	B	6.2	A	10.8	B	6.3	A	10.8	B	6.2	A	10.7	B
4. Folsom Blvd / EB U.S. 50 ramps	Signalized	30.5	C	39.1	D	26.8	C	29.8	C	25.0	C	26.3	C	25.0	C	26.4	C	25.1	C	26.3	C	25.1	C	26.2	C
5. Prairie City Road / WB U.S. 50 ramps	Signalized	30.0	C	30.2	C	37.2	D	12.9	B	38.8	D	12.8	B	38.6	D	12.6	B	36.9	D	12.1	B	35.8	D	12.1	B
6. Prairie City Road / EB U.S. 50 ramps	Signalized	22.2	C	15.9	B	21.2	C	13.3	B	21.3	C	13.2	B	21.6	C	13.6	B	21.5	C	13.9	B	21.9	C	13.5	B
7. East Bidwell Street / WB U.S. 50 ramps	Signalized	19.9	B	22.7	C	28.1	C	22.5	C	27.3	C	21.3	C	26.9	C	21.7	C	29.0	C	21.4	C	31.3	C	21.7	C
8. East Bidwell Street / EB U.S. 50 ramps	Signalized	20.3	C	23.6	C	17.1	B	20.7	C	17.5	B	20.7	C	17.0	B	20.4	C	17.7	B	21.4	C	17.7	B	21.4	C
9. El Dorado Hills Blvd / WB U.S. 50 ramps	Signalized	30.7	C	29.5	C	24.7	C	27.2	C	24.8	C	26.9	C	24.4	C	26.6	C	24.3	C	27.1	C	24.3	C	27.1	C
10. El Dorado Hills Blvd / EB U.S. 50 ramps	Signalized	4.4	A	5.0	A	3.8	A	4.2	A	3.8	A	4.1	A	3.8	A	4.1	A	3.7	A	4.2	A	3.7	A	4.0	A
11. Sunrise Boulevard / Jackson Highway (SR 16)	Signalized	29.4	C	29.9	C	29.2	C	30.3	C	29.4	C	30.3	C	29.3	C	30.2	C	29.2	C	30.2	C	29.3	C	30.2	C
12. Grant Line Road / Jackson Highway (SR 16)	Signalized	25.7	C	26.3	C	24.2	C	26.2	C	24.2	C	26.2	C	24.2	C	26.2	C	24.2	C	26.2	C	24.1	C	26.2	C
13. Oak Avenue Parkway / WB U.S. 50 ramps	Signalized	NA	NA	NA	NA	17.9	B	11.7	B	16.5	B	10.9	B	16.0	B	10.8	B	18.6	B	12.3	B	18.9	B	12.5	B
14. Oak Avenue Parkway / EB U.S. 50 ramps	Signalized	NA	NA	NA	NA	27.3	C	27.4	C	27.6	C	27.4	C	26.9	C	27.3	C	28.0	C	28.4	C	27.7	C	28.1	C
15. Empire Ranch Road / WB U.S. 50 ramps	Signalized	NA	NA	NA	NA	14.7	B	15.8	B	14.7	B	15.8	B	14.7	B	15.7	B	15.6	B	16.7	B	15.4	B	15.9	B
16. Empire Ranch Road / EB U.S. 50 ramps	Signalized	NA	NA	NA	NA	15.8	B	19.2	B	15.2	B	18.8	B	15.5	B	18.9	B	14.8	B	19.3	B	16.2	B	18.5	B
17. Silva Valley Road / WB U.S. 50 ramps	Signalized	39.4	D	25.5	C	39.5	D	25.3	C	35.3	D	22.9	C	34.9	C	23.6	C	36.7	D	24.7	C	38.4	D	25.1	C
18. Silva Valley Road / EB U.S. 50 ramps	Signalized	4.9	A	19.3	B	8.1	A	23.3	C	8.0	A	22.8	C	7.9	A	22.7	C	8.2	A	23.4	C	8.5	A	23.6	C

Notes: LOS = level of service; Blank = intersection does not exist under this alternative
Bold indicates deficiency. Shaded areas indicate impact.
Source: Data provided by DKS Associates in 2009

Table 3A.15-32
Freeway Mainline Levels of Service — Cumulative (2030) Conditions - Caltrans

Freeway Segment	No Project				Proposed Project				No USACE Permit Alternative				Resource Impact Minimization				Centralized Development				Reduced Hillside Development			
	A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
	V/C	LOS[2]	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
EASTBOUND U.S. 50																								
Zinfandel Drive to Sunrise Blvd	**1.04**	**F**	**1.15**	**F**	**1.07**	**F**	**1.17**	**F**	**1.07**	**F**	**1.17**	**F**	**1.06**	**F**	**1.17**	**F**	**1.07**	**F**	**1.17**	**F**	**1.07**	**F**	**1.17**	**F**
Sunrise Blvd to Rancho Cordova Parkway	0.87	D	1.02	F	0.91	E	**1.05**	**F**	0.91	E	1.05	F	0.90	D	1.05	F	0.92	E	1.05	F	0.91	E	1.05	F
Rancho Cordova Parkway to Hazel Avenue	**1.03**	**F**	**1.15**	**F**	**1.08**	**F**	**1.18**	**F**	**1.08**	**F**	**1.18**	**F**	**1.06**	**F**	**1.18**	**F**	**1.08**	**F**	**1.19**	**F**	**1.08**	**F**	**1.19**	**F**
Hazel Avenue to Folsom Blvd	0.90	D	0.88	D	0.95	E	1.00	E	0.95	E	0.99	E	0.93	E	0.99	E	0.96	E	1.00	E	0.96	E	1.00	E
Folsom Blvd to Prairie City Road	0.92	E	1.10	F	**1.01**	**F**	**1.15**	**F**	**1.01**	**F**	**1.14**	**F**	**0.98**	**E**	**1.14**	**F**	**1.02**	**F**	**1.15**	**F**	**1.02**	**F**	**1.15**	**F**
Prairie City Road to Oak Avenue Parkway	**1.11**	**F**	**1.17**	**F**	**1.22**	**F**	**1.19**	**F**	**1.23**	**F**	**1.17**	**F**	**1.20**	**F**	**1.17**	**F**	**1.23**	**F**	**1.17**	**F**	**1.23**	**F**	1.19	F
Oak Avenue Parkway to E. Bidwell Street - Scott Road	0.80	D	0.96	E	0.83	D	0.98	E	0.83	D	0.97	E	0.81	D	0.96	E	0.83	D	0.98	E	0.83	D	1.00	E
E. Bidwell Street - Scott Road to Empire Ranch Road	0.77	D	1.00	E	0.86	D	**1.05**	**F**	0.86	D	1.04	F	0.85	D	1.03	F	0.86	D	1.04	F	0.87	D	1.04	F
Empire Ranch Road to El Dorado Hills Blvd – Latrobe Road	0.71	C	0.87	D	0.72	C	0.89	D	0.72	C	0.88	D	0.72	C	0.88	D	0.73	C	0.89	D	0.73	C	0.89	D
El Dorado Hills Blvd – Latrobe Road to Silva Valley Road	0.61	C	0.79	D	0.64	C	0.82	D	0.63	C	0.81	D	0.63	C	0.81	D	0.64	C	0.82	D	0.64	C	0.82	D
Silva Valley Road to Bass Lake Road	0.81	D	0.95	E	0.84	D	0.97	E	0.83	D	0.96	E	0.84	D	0.96	E	0.84	D	0.97	E	0.85	D	0.97	E
WESTBOUND U.S. 50																								
Bass Lake Road to Silva Valley Road	0.95	E	0.70	C	0.96	E	0.70	C	0.96	E	0.69	C	0.96	E	0.69	C	0.97	E	0.69	C	0.97	E	0.70	C
Silva Valley Road to El Dorado Hills Blvd – Latrobe Road	0.92	E	0.63	C	0.89	D	0.61	C	0.89	D	0.62	C	0.89	D	0.62	C	0.89	D	0.61	C	0.90	D	0.62	C
El Dorado Hills Blvd – Latrobe Road to Empire Ranch Road	**1.08**	**F**	0.84	D	**1.06**	**F**	0.82	D	**1.06**	**F**	0.81	D	**1.05**	**F**	0.80	D	**1.05**	**F**	0.81	D	**1.07**	**F**	0.82	D
Empire Ranch Road to E. Bidwell Street - Scott Road	0.86	D	0.65	C	0.98	E	0.80	D	0.98	E	0.80	D	0.98	E	0.80	D	0.97	E	0.79	D	0.99	E	0.80	D
E. Bidwell Street - Scott Road to Oak Avenue Parkway	0.74	C	0.58	C	0.79	D	0.75	D	0.77	D	0.75	D	0.77	D	0.74	D	0.78	D	0.76	D	0.78	D	0.77	D
Oak Avenue Parkway to Prairie City Road	**1.17**	**F**	**102**	**F**	**1.13**	**F**	**1.02**	**F**	**1.11**	**F**	**1.01**	**F**	**1.11**	**F**	1.00	E	**1.11**	**F**	**1.03**	**F**	**1.11**	**F**	**1.02**	**F**
Prairie City Road to Folsom Blvd	0.94	E	0.88	D	0.98	E	0.95	E	0.96	E	0.95	E	0.97	E	0.93	E	0.97	E	0.96	E	0.98	E	0.95	E
Folsom Blvd to Hazel Avenue	0.92	E	0.82	D	0.97	E	0.89	D	0.95	E	0.89	D	0.96	E	0.87	D	0.96	E	0.90	E	0.97	E	0.89	D
Hazel Avenue to Rancho Cordova Parkway	**1.05**	**F**	**1.08**	**F**	**1.07**	**F**	**1.11**	**F**	**1.06**	**F**	**1.11**	**F**	**1.07**	**F**	**1.10**	**F**	**1.06**	**F**	**1.11**	**F**	**1.06**	**F**	**1.11**	**F**
Rancho Cordova Parkway to Sunrise Blvd	**1.01**	**F**	**1.04**	**F**	**1.03**	**F**	**1.08**	**F**	**1.02**	**F**	**1.08**	**F**	**1.03**	**F**	**1.07**	**F**	**1.02**	**F**	**1.09**	**F**	**1.02**	**F**	**1.08**	**F**
Sunrise Blvd to Zinfandel Drive	**1.03**	**F**	0.93	E	**1.04**	**F**	0.95	E	**1.03**	**F**	0.95	E	**1.04**	**F**	0.94	E	**1.04**	**F**	0.95	E	**1.04**	**F**	0.95	E

Notes:
LOS = level of service; NA = not applicable; U.S. 50 = U.S. Highway 50; V/C = volume-to-capacity
[1] Capacity based on 2200 vphpl for freeway lanes, 1600 vphpl for auxiliary lanes.
Bold indicates deficiency where calculation indicates that demand exceeds capacity. Shaded areas indicate impact.
Source: Data provided by DKS Associates in 2009

Table 3A.15-33
Merge/Diverge/Weave Levels of Service — Cumulative (2030) Conditions - Caltrans

Freeway Ramp	Merge, Diverge, or Weave Maneuver	No Project				Proposed Project				No USACE Permit Alternative				Resource Impact Minimization				Centralized Development				Reduced Hillside Development			
		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
		Density[1]	LOS[2]	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS
EASTBOUND U.S. 50																									
Hazel Avenue off-ramp	Diverge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hazel Avenue on-ramp – Aerojet off-ramp	Weave	32.4	D	29.9	D	36.2	E	36.1	E	36.2	E	35.5	E	35.1	E	35.6	E	36.8	E	36.2	E	36.6	E	36.1	E
Folsom Blvd off-ramp	Diverge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Folsom Blvd on-ramp	Merge	27.1	C	30.6	D	30.3	D	32.0	D	30.3	D	31.7	D	29.4	D	31.8	D	30.5	D	32.0	D	30.4	D	32.1	D
Prairie City Road off-ramp	Diverge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Prairie City Road direct on-ramp	Merge	**45.7**	**F**	**44.9**	**F**	**49.4**	**F**	**52.3**	**F**	**49.6**	**F**	**52.0**	**F**	**48.7**	**F**	**51.6**	**F**	**49.9**	**F**	**51.6**	**F**	**49.8**	**F**	**52.6**	**F**
Prairie City Road flyover on-ramp Oak Avenue Parkway off-ramp	Weave	**42.9**	**E**	**44.9**	**F**	**50.9**	**F**	**52.3**	**F**	**51.9**	**F**	**52.0**	**F**	**50.3**	**F**	**51.6**	**F**	**52.0**	**F**	**51.6**	**F**	**51.9**	**F**	**52.6**	**F**
Oak Avenue Parkway loop on-ramp	Merge	**36.1**	**F**	**43.5**	**F**	**37.4**	**F**	**41.9**	**F**	**37.2**	**F**	**41.0**	**F**	**36.5**	**F**	**40.9**	**F**	**36.5**	**F**	**40.9**	**F**	**37.2**	**F**	**41.2**	**F**
Oak Avenue Parkway direct on-ramp	Merge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E. Bidwell Street - Scott Road direct off-ramp	Diverge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E. Bidwell Street - Scott Road loop on-ramp	Merge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E. Bidwell Street - Scott Road direct on-ramp	Merge	20.5	C	26.6	C	24.1	C	29.7	D	23.9	C	29.1	D	23.8	C	28.9	D	24.1	C	29.3	D	24.5	C	29.3	D
Empire Ranch Road direct off-ramp	Diverge	23.1	C	26.9	C	26.1	C	28.7	D	26.0	C	28.4	D	25.9	C	28.3	D	26.0	C	28.3	D	26.5	C	28.5	D
Empire Ranch Road loop on-ramp	Merge	26.8	C	31.2	D	26.2	C	30.1	D	26.3	C	29.7	D	26.3	C	29.7	D	26.5	C	30.1	D	26.4	C	30.0	D
Empire Ranch Road direct on-ramp	Merge	24.8	C	28.8	D	25.9	C	30.3	D	25.8	C	29.9	D	25.8	C	29.8	D	25.8	C	30.1	D	26.2	C	30.6	D
El Dorado Hills Blvd - Latrobe Road off-ramp	Diverge	35.5	E	38.2	E	35.5	E	38.3	E	35.6	E	37.9	E	35.6	E	37.9	E	35.7	E	38.2	E	35.8	E	38.4	E
El Dorado Hills Blvd Latrobe Road on-ramp	Merge	21.7	C	27.3	C	22.1	C	27.9	C	21.9	C	28.0	C	21.9	C	27.8	C	22.1	C	28.0	D	22.3	C	28.1	D
Silva Valley Road direct off-ramp	Diverge	20.3	C	26.6	C	21.0	C	27.5	C	20.8	C	27.4	C	20.9	C	27.4	C	21.0	C	27.6	C	21.3	C	27.7	C
Silva Valley Road loop on-ramp	Merge	21.3	C	23.7	C	22.4	C	24.0	C	21.8	C	24.2	C	21.6	C	24.2	C	21.6	C	24.5	C	22.0	C	24.7	C
Silva Valley Road direct on-ramp	Merge	23.4	C	28.2	D	23.8	C	28.7	D	23.8	C	28.5	D	24.0	C	28.4	D	24.0	C	28.6	D	24.2	C	28.6	D
WESTBOUND U.S. 50																									
Silva Valley Road direct off-ramp	Diverge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silva Valley Road loop on-ramp	Merge	31.6	D	26.6	C	32.9	D	27.3	C	32.9	D	27.7	C	32.8	D	27.5	C	32.9	D	27.4	C	33.1	D	27.7	C
Silva Valley Road direct on-ramp	Merge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
El Dorado Hills Blvd - Latrobe Road off-ramp	Diverge	15.5	B	10.7	B	15.7	B	10.8	B	15.8	B	10.9	B	15.6	B	10.9	B	15.7	B	10.9	B	15.8	B	10.9	B
El Dorado Hills Blvd - Latrobe Road on-ramp	Merge	30.0	D	25.8	C	31.1	D	26.7	C	31.0	D	26.6	C	30.9	D	26.2	C	31.0	D	26.6	C	31.4	D	26.8	C
Empire Ranch Road direct off-ramp	Diverge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Empire Ranch Road loop on-ramp	Merge	**NA**	**NA**	NA	NA	**38.9**	**F**	32.3	D	**38.8**	**F**	32.5	D	**38.9**	**F**	32.2	D	**38.3**	**F**	31.9	D	**38.7**	**F**	32.4	D
Empire Ranch Road direct on-ramp	Merge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E. Bidwell Street - Scott Road direct off-ramp	Diverge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E. Bidwell Street - Scott Road loop on-ramp	Merge	38.0	F	29.4	D	37.3	E	33.7	D	36.4	E	33.3	D	36.6	E	32.9	D	36.8	E	33.9	D	37.1	E	34.1	D
E. Bidwell Street - Scott Road direct on-ramp	Merge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oak Avenue Parkway direct off-ramp	Diverge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oak Avenue Parkway loop on-ramp	Merge	**NA**	**NA**	NA	NA	**36.3**	**F**	32.4	D	**35.5**	**F**	31.9	D	**35.6**	**F**	31.5	D	**35.7**	**F**	32.5	D	**35.8**	**F**	32.4	D
Oak Avenue Parkway direct on-ramp Prairie City Road direct off-ramp	Weave	**52.8**	**F**	**47.7**	**F**	42.3	E	38.7	E	41.3	E	38.3	E	41.5	E	37.5	E	41.4	E	39.1	E	41.5	E	38.7	E
Prairie City Road loop on-ramp	Merge	**47.6**	**F**	**41.6**	**F**	**51.1**	**F**	**47.3**	**F**	**50.1**	**F**	**46.8**	**F**	**50.6**	**F**	**46.0**	**F**	**50.8**	**F**	**47.3**	**F**	**51.0**	**F**	**47.3**	**F**
Prairie City Road direct on-ramp	Merge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Folsom Blvd off-ramp	Diverge	15.2	B	15.1	B	16.0	B	16.4	B	15.4	B	16.5	B	15.7	B	15.9	B	15.7	B	16.8	B	15.9	B	16.5	B
Folsom Blvd on-ramp	Merge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hazel Avenue direct off-ramp	Diverge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hazel Avenue loop on-ramp	Merge	29.6	D	24.8	C	30.4	D	26.7	C	29.8	D	26.7	C	30.1	D	26.0	C	30.0	D	26.7	C	30.1	D	26.6	C
Hazel Avenue direct on-ramp	Merge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes: LOS = level of service; NA = not applicable – a lane drops at off ramp or adds at on ramp; U.S. 50 = U.S. Highway 50; Blank = ramp does not exist under this alternative
[1] Density in passenger cars per mile per lane for merge/diverge analysis only.
[2] LOS computed for the merge/diverge/weave analysis consistent with *Highway Capacity Manual* (HCM) 2000 methodologies.
[3] Where an auxiliary lane begins at an on ramp (as an add lane) or where an auxiliary lane end at an off ramp (as an add lane)
Bold indicates deficiency where calculation indicates that demand exceeds capacity. Shaded areas indicate impact.
Source: Data provided by DKS Associates in 2009

City of Folsom

On-Site and Off-Site Elements

IMPACT 3A.15-4a **Unacceptable LOS at the Sibley Street/Blue Ravine Road Intersection (Folsom Intersection 2) under Cumulative (2030) Conditions.** *This signalized intersection would degrade to an unacceptable level of service D or E with an increase of five or more seconds of delay during the a.m. peak traffic hour under cumulative (2030) conditions.*

NCP, RIM

The impact at this intersection is **less than significant** under the No USACE Permit and Resource Impact Minimization alternatives. The impacts of these alternatives are less than that of the Proposed Project.

Mitigation Measure: No mitigation measures are required.

PP, CD, RHD

This signalized intersection would degrade from an unacceptable level of service D to an unacceptable level of service D or E with an increase of five or more seconds of delay during the a.m. peak traffic hour with traffic from the Proposed Project, Centralized Development, and Reduced Hillside Development alternatives under cumulative (2030) conditions. This would be a **significant** impact. The impacts of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-4a: The Applicant Shall Pay a Fair Share to Fund the Construction of Improvements to the Sibley Street/Blue Ravine Road Intersection (Folsom Intersection 2).

To ensure that the Sibley Street/Blue Ravine Road intersection operates at a LOS D with less than the Cumulative No Project delay, the northbound approach must be reconfigured to consist of two left-turn lane, two through lanes, and one dedicated right-turn lane. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the Sibley Street/Blue Ravine Road intersection (Folsom Intersection 2).

Implementation: City of Folsom Public Works Department.

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: City of Folsom Public Works Department

Implementation of Mitigation Measure 3A.15-4a would reduce the significant impact on Folsom Intersection 2 under cumulative (2030) conditions to a **less-than-significant** level, by enabling the intersection to operate at a LOS D with less than the Cumulative No Project delay.

IMPACT 3A.15-4b **Unacceptable LOS at the Oak Avenue Parkway/East Bidwell Street Intersection (Folsom Intersection 6) under Cumulative (2030) Conditions.** *This signalized intersection would degrade to an unacceptable level of service D with an increase of five or more seconds of delay during the p.m. peak traffic hours under cumulative (2030) conditions.*

NCP, PP, RIM, CD, RHD

This signalized intersection would degrade from an unacceptable level of service D to an unacceptable level of service D with an increase of five or more seconds of delay during the p.m. peak traffic hours with traffic associated with the Proposed Project and all build alternatives under cumulative (2030) conditions. The impacts of these alternatives would be similar to that of the Proposed Project.

> Mitigation Measure 3A.15-4b: The Applicant Shall Pay a Fair Share to Fund the Construction of Improvements to the Oak Avenue Parkway/East Bidwell Street Intersection (Folsom Intersection 6).
>
> To ensure that the Oak Avenue Parkway/East Bidwell Street intersection operates at an acceptable LOS, the eastbound (East Bidwell Street) approach must be reconfigured to consist of two left-turn lanes, four through lanes and a right-turn lane, and the westbound (East Bidwell Street) approach must be reconfigured to consist of two left-turn lanes, four through lanes, and a right-turn lane. It is against the City of Folsom policy to have eight lane roads because of the impacts to non motorized traffic and adjacent development; therefore, this improvement is infeasible.

Implementation of Mitigation Measure 3A.15-4b would reduce the significant impact on Folsom Intersection 6 under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives under cumulative (2030) conditions to a less-than-significant level; however, identified improvement is against the City of Folsom policy because of the impacts to non motorized traffic; therefore, the improvement would not be implemented. Given these conditions the impact is **significant-and-unavoidable**.

IMPACT 3A.15-4c **Unacceptable LOS at the East Bidwell Street/Nesmith Court Intersection (Folsom Intersection 7) under Cumulative (2030) Conditions.** *Project or build alternative traffic would increase delay at this deficient intersection by more than 5 seconds during the p.m. peak traffic hour under cumulative (2030) conditions.*

NCP, PP, RIM, CD, RHD

This signalized intersection would operate at an unacceptable LOS E during the p.m. peak traffic hours with or without project traffic under cumulative (2030) conditions. Project traffic would increase delay at this intersection by more than 5 seconds during the p.m. peak traffic hours under all the Proposed Project and all of the build alternatives. The impacts of these alternatives would be similar to that of the Proposed Project.

> Mitigation Measure 3A.15-7c: The Applicant Shall Pay a Fair Share to Fund the Construction of Improvements to the East Bidwell Street/Nesmith Court Intersection (Folsom Intersection 7).
>
> To ensure that the East Bidwell Street/College Street intersection operates at acceptable LOS C or better, the westbound approach must be reconfigured to consist of one left-turn lane, one left-through lane, and two dedicated right-turn lanes. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the East Bidwell Street/Nesmith Court intersection (Folsom Intersection 7).

Implementation: City of Folsom Public Works Department.

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: City of Folsom Public Works Department

Implementation of Mitigation Measure 3A.15-4c would reduce the significant impact on Folsom Intersection 7 under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives under cumulative (2030) conditions to a **less-than-significant** level, by enabling this intersection to operate at an acceptable LOS C.

IMPACT 3A.15-4d Unacceptable LOS at the East Bidwell Street /Iron Point Road Intersection (Folsom Intersection 21) under Cumulative (2030) Conditions. *This signalized intersection would degrade to an unacceptable LOS F during the p.m. peak traffic hours under the proposed project and all of the build alternatives under cumulative (2030) conditions.*

NCP, PP, RIM, CD, RHD

This signalized intersection would degrade from an unacceptable LOS E to an unacceptable LOS F during the p.m. peak traffic hours under the Proposed Project and all of the build alternatives under cumulative (2030) conditions. The impacts of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-4d: The Applicant Shall Pay a Fair Share to Fund the Construction of Improvements to the East Bidwell Street/Iron Point Road Intersection (Folsom Intersection 21).

To ensure that the East Bidwell Street /Iron Point Road intersection operates at an acceptable LOS, the northbound approach must be reconfigured to consist of two left-turn lanes, four through lanes and a right-turn lane, and the southbound approach must be reconfigured to consist of two left-turn lanes, four through lanes and a right-turn lane. It is against the City of Folsom policy to have eight lane roads because of the impacts to non motorized traffic and adjacent development; therefore, this improvement is infeasible.

Implementation of Mitigation Measure 3A.15-4d would reduce the significant impact on Folsom Intersection 21 from the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives under cumulative (2030) conditions to a less-than-significant level; however, identified improvement is against the City of Folsom policy because of the impacts to non motorized traffic; therefore, the improvement would not be implemented. Given these conditions the impact is **significant-and-unavoidable**.

IMPACT 3A.15-4e Unacceptable LOS at the Serpa Way/ Iron Point Road Intersection (Folsom Intersection 23) under Cumulative (2030) Conditions. *Traffic increases would increase the delay at this deficient intersection by more than 5 seconds under cumulative (2030) conditions.*

NCP, PP, RIM

The impact at this intersection under the No USACE Permit, Proposed Project, and Resource Impact Minimization alternative would be **less than significant**. The impacts of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure: No mitigation measures are required.

CD, RHD

This signalized intersection would operate at an unacceptable LOS D during the p.m. peak traffic hour without project traffic under cumulative (2030) conditions. Project traffic would increase the delay at this intersection by more than 5 seconds under the Centralized Development and Reduced Hillside Development Alternatives. The impacts of these alternatives would be greater than that of the Proposed Project.

Mitigation Measure 3A.15-4e: The Applicant Shall Pay a Fair Share to Fund the Construction of Improvements to the Serpa Way/ Iron Point Road Intersection (Folsom Intersection 23).

To improve LOS at the Serpa Way/ Iron Point Road intersection, the northbound approaches must be restriped to consist of one left-turn lane, one shared left-through lanes, and one right-turn lane. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the Serpa Way/Iron Point Road Intersection (Folsom Intersection 23).

Implementation: City of Folsom Public Works Department.

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be build.

Enforcement: City of Folsom Public Works Department

Implementation of Mitigation Measure 3A.15-4e would reduce the significant impact on Folsom Intersection 23 from the Centralized Development and Reduced Hillside Development Alternatives under cumulative (2030) conditions to a **less-than-significant** level, by enabling this intersection to operate at an acceptable LOS C.

IMPACT 3A.15-4f Unacceptable LOS at the Empire Ranch Road / Iron Point Road Intersection (Folsom Intersection 24) under Cumulative (2030) Conditions. *During the p.m. peak traffic hour, this intersection would operate at LOS E or F with an increase in delay of 5 or more seconds under cumulative (2030) conditions.*

NCP, PP, RIM, CD, RHD

Addition of traffic associated with the Proposed Project and build alternatives would cause this intersection to operate at LOS E or F during the p.m. peak hour with an increase in delay of 5 seconds or greater. This is a **significant impact**. The impacts of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-4f: The Applicant Shall Pay a Fair Share to Fund the Construction of Improvements to the Empire Ranch Road / Iron Point Road Intersection (Folsom Intersection 24).

To ensure that the Empire Ranch Road / Iron Point Road intersection operates at a LOS D or better, all of the following improvements are required:

- The eastbound approach must be reconfigured to consist of one left-turn lane, two through lanes, and a right-turn lane.
- The westbound approach must be reconfigured to consist of two left-turn lanes, one through lane, and a through-right lane.

- The northbound approach must be reconfigured to consist of two left-turn lanes, three through lanes, and a right-turn lane.

- The southbound approach must be reconfigured to consist of two left-turn lanes, three through lanes, and a right-turn lane.

The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the Empire Ranch Road/Iron Point Road Intersection (Folsom Intersection 24).

Implementation: City of Folsom Public Works Department.

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: City of Folsom Public Works Department

Implementation of Mitigation Measure 3A.15-4f would reduce the significant impact on Folsom Intersection 24 from the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives under cumulative (2030) conditions to a **less-than-significant** level, by allowing this intersection to operate at a LOS D or better.

IMPACT 3A.15-4g Unacceptable LOS at the Oak Avenue Parkway / Easton Valley Parkway Intersection (Folsom Intersection 33) under Cumulative (2030) Conditions. *This new signalized intersection would operate at an unacceptable LOS D during the a.m. peak traffic hour with the addition of proposed project and alternative traffic under cumulative (2030) conditions.*

NCP, RIM

Under the No USACE Permit and Resource Impact Minimization alternatives, the impact at this intersection is **less than significant**. The impacts of these alternatives would be less than that of the Proposed Project.

Mitigation Measure: No mitigation measures are required.

PP, CD, RHD

This new signalized intersection would operate at an unacceptable LOS D during the a.m. peak traffic hour with the addition of Proposed Project, Centralized Development and Reduced Hillside Development alternative traffic under cumulative (2030) conditions. This is a **significant impact**. The impacts of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-4g: The Applicant Shall Fund and Construct Improvements to the Oak Avenue Parkway / Easton Valley Parkway Intersection (Folsom Intersection 33).

To ensure that the Oak Avenue Parkway / Easton Valley Parkway intersection operates at an acceptable LOS the southbound approach must be reconfigured to consist of two left-turn lanes, two through lanes, and two right-turn lanes. The applicant shall fund and construct these improvements.

Implementation: City of Folsom Public Works Department.

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: City of Folsom Public Works Department

Implementation of Mitigation Measure 3A.15-4g would reduce the significant impact on Folsom Intersection 33 from the Proposed Project, Centralized Development and Reduced Hillside Development Alternatives under cumulative (2030) conditions to a **less-than-significant** level, by allowing this intersection to operate at an acceptable LOS C.

IMPACT 3A.15-4h LOS D at the Scott Road (East)/Easton Valley Parkway Intersection (Intersection 38) under Cumulative (2030) Conditions. *This new signalized intersection would operate at LOS D during the p.m. peak traffic hour with project traffic under cumulative (2030) conditions.*

NCP, RIM

This intersection would operate at LOS C conditions under the No USACE Permit and Resource Impact Minimization alternatives. This impact is **less than significant**. The impacts of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure: No mitigation measures are required.

PP, CD, RHD

This new signalized intersection would operate at LOS D during the p.m. peak traffic hour with the Proposed Project, Centralized Development, and Reduced Hillside Development alternatives cumulative (2030) conditions.

The Specific Plan proposes an amended Level of Service policy within the project area (south of U.S. 50) as follows

> The City should strive to achieve at least a traffic Level of Service "C" within the Folsom South of U.S. 50 Specific Plan. For roadways and intersections within the Specific Plan, LOS "D" conditions may be considered on a case by case basis if improvements required to meet LOS "C" exceeds the "normally accepted maximum" improvements established by the City. Complete Streets principles require that streets and intersections be designed with all transportation modes in mind, and that the road widths, delays, and safety impacts to pedestrians and bicycles make larger roadways and intersections incompatible with this philosophy. Coupled with the limited reduction in vehicular delay that such improvements would provide, the City has determined that the benefits of excessively wide roadways and intersections do not outweigh the impacts to the community. Therefore, "normally accepted maximum" improvements on arterial roadways include three through-lanes in each direction; and at intersections includes two left-turn lanes, three through-lanes and one right-turn lane on an approach.

The number of travel lanes on the Scott Road (East)/Easton Valley Parkway intersection approaches would be at the "normally accepted maximum" levels. Thus LOS "D" conditions would be acceptable at this intersection

This impact is **less than significant**. The impacts of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure: No mitigation measures are required.

SACRAMENTO COUNTY INTERSECTIONS

Off-Site Elements

IMPACT 3A.15-4i — Unacceptable LOS at the Grant Line Road/White Rock Road Intersection (Sacramento County Intersection 3) under Cumulative (2030) Conditions. *This signalized intersection would degrade to an unacceptable LOS F during the a.m. peak traffic hours under cumulative (2030) conditions.*

NCP, PP, RIM, CD, RHD

This signalized intersection would degrade from an acceptable LOS E to an unacceptable LOS F during the a.m. peak traffic hours under the Proposed Project and all of the build alternatives under cumulative (2030) conditions. This is a **significant** impact. The impacts of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-4i: Participate in Fair Share Funding of Improvements to Reduce Impacts on the Grant Line Road/White Rock Road Intersection (Sacramento County Intersection 3).

To ensure that the Grant Line Road/White Rock Road intersection operates at an acceptable LOS E or better this intersection should be replaced by some type of grade separated intersection or interchange.

Improvements to this intersection are identified in the Sacramento County's Proposed General Plan. Implementation of these improvements would assist in reducing traffic impacts on this intersection by providing acceptable operation. Intersection improvements must be implemented by Sacramento County. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to the Grant Line Road/White Rock Road Intersection (Sacramento County Intersection 3).

Implementation: Sacramento County Department of Transportation.

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: Sacramento County Department of Transportation.

Implementation of Mitigation Measure 3A.15-4i would reduce the significant impact on the Grant Line Road/White Rock Road intersection from the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development and Reduced Hillside Development alternatives under cumulative (2030) conditions to a less-than-significant level, by allowing this intersection to operate at an acceptable LOS E or better.

If Sacramento County implements the improvements, the impact would be reduced to a less-than-significant level.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom would mitigate or substantially lessen the project's significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Sacramento County, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision

(a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

SACRAMENTO COUNTY ROADWAYS

Off-Site Elements

IMPACT 3A.15-4j **Unacceptable LOS on Grant Line Road between White Rock Road and Kiefer Boulevard (Sacramento County Roadway Segments 5-7) under Cumulative (2030) Conditions.** *Operating conditions of these deficient roadway segments would deteriorate and the V/C ratio would increase by more than 0.05 with project traffic under cumulative (2030) conditions.*

NCP, PP, NFA, RIM, CD

Operation of these roadway segments would operate at an unacceptable LOS F with or without the Proposed Project or alternative, and the V/C ratio would increase by more than 0.05 with project and build alternative traffic under cumulative (2030) conditions. This is a **significant** impact. The impacts of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-4j: Participate in Fair Share Funding of Improvements to Reduce Impacts on Grant Line Road between White Rock Road and Kiefer Boulevard (Sacramento County Roadway Segments 5-7).

To improve operation on Grant Line Road between White Rock Road and Kiefer Boulevard, this roadway segment must be widened to six lanes. This improvement is proposed in the Sacramento County and the City of Rancho Cordova General Plans; however, it is not in the 2035 MTP. Improvements to this roadway segment must be implemented by Sacramento County and the City of Rancho Cordova.

The identified improvement would more than offset the impacts specifically related to the Folsom South of U.S. 50 project on this roadway segment. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to Grant Line Road between White Rock Road and Kiefer Boulevard (Sacramento County Roadway Segments 5-7).

Implementation: Sacramento County Department of Transportation.

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: Sacramento County Department of Transportation.

Implementation of Mitigation Measure 3A.15-4j would reduce the significant impact on Grant Line Road between White Rock Road and Kiefer Boulevard from the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives under cumulative (2030) conditions, by offsetting impacts of project traffic. The resulting mitigated LOS is F but the V/C ratio is less than the No Project condition.

If Sacramento County and the City of Rancho Cordova implement the improvement, the impact would be reduced to a less-than-significant level.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom would mitigate or substantially lessen the project's significant impact

on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Sacramento County and the City of Rancho Cordova, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

IMPACT 3A.15-4k — Unacceptable LOS on Grant Line Road between Kiefer Boulevard and Jackson Highway (Sacramento County Roadway Segment 8) under Cumulative (2030) Conditions. *Operating conditions of this deficient roadway segment would degrade by increasing the V/C by 0.05 with increased traffic under cumulative (2030) conditions.*

NCP, PP, CD, RHD

This roadway segment would operate at an unacceptable LOS F with an increase of V/C ratio of 0.05 or greater under the No USACE Permit, Proposed Project, Centralized Development, and Reduced Hillside Development alternatives under cumulative (2030) conditions. This is a **significant** impact. The impacts of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-4k: Participate in Fair Share Funding of Improvements to Reduce Impacts on Grant Line Road between Kiefer Boulevard and Jackson Highway (Sacramento County Roadway Segment 8).

To improve operation on Grant Line Road between Kiefer Boulevard Jackson Highway, this roadway segment could be widened to six lanes. This improvement is proposed in the Sacramento County and the City of Rancho Cordova General Plans; however, it is not in the 2035 MTP. Improvements to this roadway segment must be implemented by Sacramento County and the City of Rancho Cordova.

The identified improvement would more than offset the impacts specifically related to the Folsom South of U.S. 50 project on this roadway segment. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to Grant Line Road between Kiefer Boulevard and Jackson Highway (SR 16) (Sacramento County Roadway Segment 8).

Implementation: Sacramento County Department of Transportation.

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: Sacramento County Department of Transportation.

Implementation of Mitigation Measure 3A.15-4k would reduce the significant impact on Grant Line Road between Kiefer Boulevard and Jackson Highway from the No USACE Permit, Proposed Project, Centralized Development, and Reduced Hillside Development alternatives under cumulative (2030) conditions, by improving operations to LOS C.

If Sacramento County and the City of Rancho Cordova implement the improvement, the impact would be reduced to a less-than-significant level.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom would mitigate or substantially lessen the project's significant impact

on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Sacramento County and the City of Rancho Cordova, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

RIM

There is a **less-than-significant** impact on this roadway segment under the Resource Impact Minimization alternative. This impact is less than that associated with the Proposed Project.

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.15-4l Unacceptable LOS on Hazel Avenue between Curragh Downs Drive and U.S. 50 Westbound Ramps (Sacramento County Roadway Segment s 12-13) under Cumulative (2030) Conditions. *Operation of these deficient roadway segments degrade with the V/C ratio increasing by more than 0.05 with project and alternative traffic under cumulative (2030) conditions.*

NCP, PP, RIM, CD, RHD

Operation of these roadway segments would operate at an unacceptable LOS F with or without the project or alternative, and the V/C ratio would increase by more than 0.05 with project and build alternative traffic under cumulative (2030) conditions. This is a **significant impact**. The impacts of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-4l: Participate in Fair Share Funding of Improvements to Reduce Impacts on Hazel Avenue between Curragh Downs Drive and U.S. 50 Westbound Ramps (Sacramento County Roadway Segment s 12-13).

To improve operation on Hazel Avenue between Curragh Downs Drive and the U.S. 50 westbound ramps, this roadway segment could be widened to eight lanes. This improvement is inconsistent with Sacramento County's general plan because the county's policy requires a maximum roadway cross section of six lanes.

Analysis shown later indicates that improvements at the impacted intersection in this segment can be mitigated (see Mitigation Measure 3A.15-4p). Improvements to impacted intersections on this segment will improve operations on this roadway segment and, therefore; mitigate this segment impact. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to Hazel Avenue between Curragh Downs Drive and U.S. 50 Westbound Ramps (Sacramento County Roadway Segments 12-13).

Implementation: Sacramento County Department of Transportation.

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: Sacramento County Department of Transportation.

Implementation of Mitigation Measure 3A.15-4l would reduce the significant impact on Hazel Avenue between Curragh Downs Drive and U.S. 50 Westbound Ramps from the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives under cumulative (2030) conditions, by offsetting impacts of project traffic. The mitigated intersection LOS is shown later in this section.

If Sacramento County and Caltrans implements the intersection improvement, the impact would be reduced to a less than significant.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom would mitigate or substantially lessen the project's significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Sacramento County and Caltrans, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

IMPACT 3A.15-4m — Unacceptable LOS on White Rock Road between Grant Line Road and Prairie City Road (Sacramento County Roadway Segment 22) under Cumulative (2030) Conditions. *Operation of this roadway segment would degrade this LOS F segment by increasing the V/C ratio by more than 0.05 with project and alternative traffic under cumulative (2030) conditions.*

NCP, PP, RIM, CD, RHD

The addition of traffic on this roadway segment already operating at an unacceptable LOS F would increase the V/C ratio by more than 0.05 with project and build alternative traffic under cumulative (2030) conditions. This is a **significant** impact. The impacts of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-4m: Participate in Fair Share Funding of Improvements to Reduce Impacts on White Rock Road between Grant Line Road and Prairie City Road (Sacramento County Roadway Segment 22).

To improve operation on White Rock Road between Grant Line Road and Prairie City Road, this roadway segment must be widened to six lanes. This improvement is included in the 2035 MTP but is not included in the Sacramento County General Plan. Improvements to this roadway segment must be implemented by Sacramento County.

The identified improvement would more than offset the impacts specifically related to the Folsom South of U.S. 50 project on this roadway segment. However, because of other development in the region that would substantially increase traffic levels, this roadway segment would continue to operate at an unacceptable LOS F even with the capacity improvements identified to mitigate Folsom South of U.S. 50 impacts. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to White Rock Road between Grant Line Road and Prairie City Road (Sacramento County Roadway Segment 22).

Implementation: Sacramento County Department of Transportation.

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: Sacramento County Department of Transportation.

Implementation of Mitigation Measure 3A.15-4m would reduce the significant impact on White Rock Road between Grant Line Road and Prairie City Road from the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives under cumulative (2030) conditions to a less-than-significant level, by offsetting impacts of project traffic. The resulting mitigated LOS is F but the V/C ratio is less than the No Project condition.

If Sacramento County implements the improvement, the impact would be reduced to less than significant.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom would mitigate or substantially lessen the project's significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Sacramento County, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

IMPACT 3A.15-4n Unacceptable LOS on White Rock Road between Empire Ranch Road and Carson Crossing Road (Sacramento County Roadway Segment 28) under Cumulative (2030) Conditions. *Operating conditions on this roadway segment would deteriorate from an acceptable LOS D to an unacceptable LOS F with the Centralized Development , Reduced Hillside Development alternative under cumulative (2030) conditions, and deteriorate from an acceptable LOS D to an unacceptable LOS E with the No USACE Permit, Proposed Project, and Resource Impact Minimization alternatives under cumulative (2030) conditions.*

NCP, PP, RIM, CD, RHD

Operation of this roadway segment would deteriorate from an acceptable LOS D to an unacceptable LOS F with the Centralized Development and Reduced Hillside Development alternatives under cumulative (2030) conditions, and deteriorate from an acceptable LOS D to an unacceptable LOS E with the No USACE Permit, Proposed Project, and Resource Impact Minimization alternatives under cumulative (2030) conditions. This is a **significant** impact**.** The impacts of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-4n: Participate in Fair Share Funding of Improvements to Reduce Impacts on White Rock Road between Empire Ranch Road and Carson Crossing Road (Sacramento County Roadway Segment 28).

To improve operation on White Rock Road between Empire Ranch Road and Carson Crossing Road, this roadway segment must be widened to six lanes. Improvements to this roadway segment must be implemented by Sacramento County. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to White Rock Road between Empire Ranch Road and Carson Crossing Road (Sacramento County Roadway Segment 28).

Implementation: Sacramento County Department of Transportation.

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: Sacramento County Department of Transportation.

Implementation of Mitigation Measure 3A.15-4n would reduce the significant impact on White Rock Road between Empire Ranch Road and Carson Crossing Road from the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives under cumulative (2030) conditions to a less-than-significant level, by improving operations to LOS A.

If Sacramento County implements the improvement, the impact would be reduced to less than significant.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom would mitigate or substantially lessen the project's significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Sacramento County, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

CITY OF RANCHO CORDOVA INTERSECTIONS

There are no impacts to any City of Rancho Cordova intersections under cumulative (2030) conditions.

CITY OF RANCHO CORDOVA ROADWAYS

There are no impacts to any City of Rancho Cordova roadways under cumulative (2030) conditions.

EL DORADO COUNTY INTERSECTIONS

Off-Site Elements

IMPACT 3A.15-4o Unacceptable LOS at the White Rock Road / Carson Crossing Road Intersection (El Dorado County 1) under Cumulative (2030) Conditions. *This signalized intersection would degrade to an unacceptable LOS F during the a.m. peak traffic hour under cumulative (2030) conditions.*

NCP, PP, RIM, CD, RHD

This signalized intersection would degrade from an acceptable LOS C to an unacceptable LOS F during the a.m. peak traffic hour under the Proposed Project and all of the build alternatives under cumulative (2030) conditions. This is a **significant** impact. The impacts of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-4o: Participate in Fair Share Funding of Improvements to Reduce Impacts on the White Rock Road / Carson Crossing Road Intersection (El Dorado County 1).

To ensure that the White Rock Road / Carson Crossing Road intersection operates at an acceptable LOS, the eastbound right turn lane must be converted into a separate free right turn lane, or double right. Improvements to this intersection must be implemented by El Dorado County. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a

program established by that agency to reduce the impacts to the White Rock Road/Carson Crossing Road Intersection (El Dorado County 1).

Implementation: El Dorado County Department of Public Works.

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: El Dorado County Department of Public Works.

Implementation of Mitigation Measure 3A.15-4o would reduce the significant impact on the White Rock Road / Carson Crossing Road intersection from the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives under cumulative (2030) conditions to a less-than-significant level, by allowing this intersection to operate at an acceptable LOS C.

If El Dorado County implements the improvement, the impact would be reduced to a less-than-significant level.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom would mitigate or substantially lessen the project's significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of El Dorado County, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

CALTRANS INTERSECTIONS

Off-Site Elements

IMPACT 3A.15-4p Unacceptable LOS at the Hazel Avenue/U.S. 50 Westbound Ramps Intersection (Caltrans Intersection 1) under Cumulative (2030) Conditions. *This signalized intersection would degrade from an unacceptable LOS F during the a.m. and p.m. peak traffic hours with an increase in the delay at this intersection during the a.m. and p.m. peak traffic hours by more than 5 seconds under cumulative (2030) conditions.*

NCP, PP, RIM, CD, RHD

This signalized intersection would operate at an unacceptable LOS F during the a.m. and p.m. peak traffic hours with or without project and alternative traffic under cumulative (2030) conditions. Project and build alternative traffic would increase the delay at this intersection during the a.m. and p.m. peak traffic hours by more than 5 seconds. This is a **significant impact**. The impacts of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-4p: Participate in Fair Share Funding of Improvements to Reduce Impacts on the Hazel Avenue/U.S. 50 Westbound Ramps Intersection (Caltrans Intersection 1).

To ensure that the Hazel Avenue/U.S. 50 westbound ramps intersection operates at an acceptable LOS, the westbound approach must be reconfigured to consist of one dedicated left turn lane, one shared left-through lane and three dedicated right-turn lanes. Improvements to this intersection must be implemented

by Caltrans and Sacramento County. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to the Hazel Avenue/U.S. 50 Westbound Ramps Intersection (Caltrans Intersection 1)

Implementation: California Department of Transportation.

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: California Department of Transportation.

Implementation of Mitigation Measure 3A.15-4p would reduce the significant impact on the Hazel Avenue/U.S. 50 Westbound Ramps Intersection from the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives under cumulative (2030) conditions to a less-than-significant level, by reducing the intersection delay below Cumulative No Project levels. The resulting mitigated LOS is F but the V/C ratio is less than the No Project condition.

If Caltrans and Sacramento County implements the improvements, the impact would be reduced to less than significant.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom would mitigate or substantially lessen the project's significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Caltrans and Sacramento County, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

CALTRANS FREEWAY SEGMENTS

Off-Site Elements

IMPACT 3A.15-4q Unacceptable LOS on Eastbound U.S. 50 between Zinfandel Drive and Sunrise Boulevard (Freeway Segment 1) under Cumulative (2030) Conditions. *Project traffic would increase on this LOS F freeway segment under cumulative (2030) conditions.*

NCP, PP, RIM, CD, RHD

This freeway segment would operate at an unacceptable LOS F during the a.m. and p.m. peak traffic hours with or without project and all alternatives traffic under cumulative (2030) conditions. Project and alternative traffic would increase at this freeway segment volume under all build alternatives. This is a **significant** impact. The impacts of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-4q: Participate in Fair Share Funding of Improvements to Reduce Impacts on Eastbound U.S. 50 between Zinfandel Drive and Sunrise Boulevard (Freeway Segment 1).

To ensure that Eastbound U.S. 50 operates at an acceptable LOS between Zinfandel Drive and Sunrise Boulevard, an additional eastbound lane could be constructed. This improvement is not consistent with

the Concept Facility in Caltrans State Route 50 Corridor System Management Plan; therefore, it is not likely to be implemented by Caltrans by 2030.

Construction of the Capitol South East Connector, including widening White Rock Road and Grant Line Road to six lanes with limited access, could divert some traffic from U.S. 50 and partially mitigate the project's impact. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to Eastbound U.S. 50 between Zinfandel Drive and Sunrise Boulevard (Freeway Segment 1).

Implementation: Capitol Southeast Connecter Joint Powers Authority.

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: Capitol Southeast Connecter Joint Powers Authority.

Implementation of Mitigation Measure 3A.15-4q would partially reduce the significant impact on Eastbound U.S. 50 between Zinfandel Drive and Sunrise Boulevard from the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives under cumulative (2030) conditions. A mitigated LOS cannot be calculated because the design of the Capitol South East Connector is not know at this time; therefore, it is not known how much traffic would be diverted off of U.S. 50 and what LOS that reduced U.S. 50 volume would produce.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom would mitigate or substantially lessen the project's significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Capital Southeast, the City of Rancho Cordova and Sacramento County, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

IMPACT 3A.15-4r Unacceptable LOS on Eastbound U.S. 50 between Rancho Cordova Parkway and Hazel Avenue (Freeway Segment 3) under Cumulative (2030) Conditions. *Project traffic would increase on this LOS F freeway segment under cumulative (2030) conditions.*

NCP, PP, RIM, CD, RHD

This freeway segment would operate at an unacceptable LOS F during the a.m. and p.m. peak traffic hours with or without project and all alternatives traffic under cumulative (2030) conditions. Project and alternative traffic would increase at this freeway segment under all build alternatives. This is a **significant** impact. The impacts of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-4r: Participate in Fair Share Funding of Improvements to Reduce Impacts on Eastbound U.S. 50 between Rancho Cordova Parkway and Hazel Avenue (Freeway Segment 3).

To ensure that Eastbound U.S. 50 operates at an acceptable LOS between Rancho Cordova Parkway and Hazel Avenue, an additional eastbound lane could be constructed. This improvement is not consistent with the Concept Facility in Caltrans State Route 50 Corridor System Management Plan; therefore, it is not likely to be implemented by Caltrans by 2030.

Construction of the Capitol South East Connector, including widening White Rock Road and Grant Line Road to six lanes with limited access, could divert some traffic off of U.S. 50 and partially mitigate the project's impact. The applicant shall pay its proportionate share of funding of improvements to the agency responsible for improvements, based on a program established by that agency to reduce the impacts to Eastbound U.S. 50 between Rancho Cordova Parkway and Hazel Avenue (Freeway Segment 3).

Implementation: Capitol Southeast Connecter Joint Powers Authority.

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: Capitol Southeast Connecter Joint Powers Authority.

Implementation of Mitigation Measure 3A.15-4r would partially reduce significant impact on Eastbound U.S. 50 between Rancho Cordova Parkway and Hazel Avenue from the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives under cumulative (2030) conditions. A mitigated LOS cannot be calculated because the design of the Capitol South East Connector is not know at this time; therefore, it is not known how much traffic would be diverted off of U.S. 50 and what LOS that reduced U.S. 50 volume would produce.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom would mitigate or substantially lessen the project's significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Capital Southeast, the City of Rancho Cordova and Sacramento County, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

IMPACT 3A.15-4s Unacceptable LOS on Eastbound U.S. 50 between Folsom Boulevard and Prairie City Road (Freeway Segment 5) under Cumulative (2030) Conditions. *This freeway segment would deteriorate from LOS E to LOS F during the a.m. and p.m. peak traffic hours with project and build alternative traffic under cumulative (2030) conditions.*

NCP, PP, RIM, CD, RHD

Traffic associated with the project and build alternatives would deteriorate operating conditions on this segment from LOS E to F during both the a.m. and p.m. peak hours under cumulative (2030) conditions. This is a **significant** impact. The impacts of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-4s: Participate in Fair Share Funding of Improvements to Reduce Impacts on Eastbound U.S. 50 between Folsom Boulevard and Prairie City Road (Freeway Segment 5).

To ensure that Eastbound U.S. 50 operates at an acceptable LOS between Folsom Boulevard and Prairie City Road, the eastbound auxiliary lane should be converted to a mixed flow lane that extends to and drops at the Oak Avenue Parkway off ramp (see mitigation measure 3A.15-4t). Improvements to this freeway segment must be implemented by Caltrans. This improvement is not consistent with the Concept Facility in Caltrans State Route 50 Corridor System Management Plan; therefore, it is not likely to be implemented by Caltrans by 2030.

Construction of the Capitol South East Connector, including widening White Rock Road and Grant Line Road to six lanes with limited access, could divert some traffic off of U.S. 50 and partially mitigate the project's impact.

The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to Eastbound U.S. 50 between Folsom Boulevard and Prairie City Road (Freeway Segment 5).

Implementation: Capitol Southeast Connecter Joint Powers Authority.

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: Capitol Southeast Connecter Joint Powers Authority.

Implementation of Mitigation Measure 3A.15-4s would partially reduce the significant impact on Eastbound U.S. 50 between Folsom Boulevard and Prairie City Road from the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives under cumulative (2030) conditions. A mitigated LOS cannot be calculated because the design of the Capitol South East Connector is not know at this time; therefore, it is not known how much traffic would be diverted off of U.S. 50 and what LOS that reduced U.S. 50 volume would produce.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom would mitigate or substantially lessen the project's significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Capital Southeast, the City of Rancho Cordova and Sacramento County, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

IMPACT 3A.15-4t Unacceptable LOS on Eastbound U.S. 50 between Prairie City Road and Oak Avenue Parkway (Freeway Segment 6) under Cumulative (2030) Conditions. *This freeway segment would degrade to an unacceptable LOS F during the a.m. peak traffic hour with project and build alternative traffic, and this deficient freeway segment (LOS F) would experience higher volumes during the p.m. peak traffic hour with the addition of traffic under cumulative (2030) conditions.*

NCP, PP, RIM, CD, RHD

This freeway segment would degrade from an acceptable LOS E to an unacceptable LOS F during the a.m. peak traffic hour with the project and all build alternatives traffic under cumulative (2030) conditions. This freeway segment would operate at an unacceptable LOS F during the p.m. peak traffic hour with or without the project and all but one build alternative under cumulative (2030) conditions. This is a **significant** impact. The impacts of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-4t: Participate in Fair Share Funding of Improvements to Reduce Impacts on Eastbound U.S. 50 between Prairie City Road and Oak Avenue Parkway (Freeway Segment 6).

To ensure that Eastbound U.S. 50 operates at an acceptable LOS between Prairie City Road and Oak Avenue Parkway, the northbound Prairie City Road slip on ramp should merge with the eastbound

auxiliary lane that extends to and drops at the Oak Avenue Parkway off ramp (see Mitigation Measures 3A.15-4u, v and w), and the southbound Prairie City Road flyover on ramp should be braided over the Oak Avenue Parkway off ramp and start an extended full auxiliary lane to the East Bidwell Street – Scott Road off ramp. Improvements to this freeway segment must be implemented by Caltrans. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to Eastbound U.S. 50 between Prairie City Road and Oak Avenue Parkway (Freeway Segment 6).

Implementation: California Department of Transportation.

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: California Department of Transportation.

Implementation of Mitigation Measure 3A.15-4t would reduce the significant impact on Eastbound U.S. 50 between Prairie City Road and Oak Avenue Parkway from the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives under cumulative (2030) conditions to a less-than-significant level, by allowing this freeway segment to operate at an acceptable LOS. With the proposed mitigated design this freeway segment will operate at LOS F but with a lower traffic density than under the No Project condition.

If Caltrans implements the improvements, the impact would be reduced to less than significant.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom would mitigate or substantially lessen the project's significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Caltrans, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

CALTRANS FREEWAY RAMP MERGE, DIVERGE AND WEAVING SECTIONS

Off-Site Elements

IMPACT 3A.15-4u — Unacceptable LOS at the U.S. 50 Eastbound / Prairie City Road Slip Ramp Merge (Freeway Merge 6). *Project and alternative traffic would increase at this LOS F freeway merge during the a.m. and p.m. peak traffic hours with project and build alternative traffic under cumulative (2030) conditions.*

NCP, PP, RIM, CD, RHD

This freeway merge would operate at an unacceptable LOS F during the a.m. and p.m. peak traffic hours with or without project and all alternatives traffic under cumulative (2030) conditions. Project and alternative traffic would increase at this freeway merge under all build alternatives. This is a **significant** impact. The impacts of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-4u: Participate in Fair Share Funding of Improvements to Reduce Impacts on the U.S. 50 Eastbound / Prairie City Road Slip Ramp Merge (Freeway Merge 6).

To ensure that Eastbound U.S. 50 operates at an acceptable LOS, the northbound Prairie City Road slip on ramp should start the eastbound auxiliary lane that extends to and drops at the Oak Avenue Parkway off ramp (see mitigation measure 3A.15-4u, w and x), and the southbound Prairie City Road flyover on ramp should be braided over the Oak Avenue Parkway off ramp and start an extended full auxiliary lane to the East Bidwell Street – Scott Road off ramp. Improvements to this freeway segment must be implemented by Caltrans. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Eastbound/Prairie City Road slip ramp merge (Freeway Merge 6).

Implementation: California Department of Transportation.

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be build.

Enforcement: California Department of Transportation.

Implementation of Mitigation Measure 3A.15-4u would reduce the significant impact on the U.S. 50 Eastbound / Prairie City Road Slip Ramp Merge from the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives under cumulative (2030) conditions to a less-than-significant level, by allowing this merge to operate at an acceptable LOS. With the proposed mitigated design this merge segment will no longer exist, and be replaced with a weaving segment that will operate at LOS F but with a lower traffic density than under the No Project condition.

If Caltrans implements the improvements, the impact would be reduced to less than significant.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom would mitigate or substantially lessen the project's significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Caltrans, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

IMPACT 3A.15-4v Unacceptable LOS at the U.S. 50 Eastbound / Prairie City Road Flyover On Ramp to Oak Avenue Parkway Off Ramp Weave (Freeway Weave 7). *Project and alternative traffic would increase at this LOS F freeway weave during the a.m. and p.m. peak traffic hours with project and build alternative traffic under cumulative (2030) conditions.*

NCP, PP, RIM, CD, RHD

This freeway weave would operate at an unacceptable LOS F during the a.m. and p.m. peak traffic hours with or without project and all alternatives traffic under cumulative (2030) conditions. Project and alternative traffic would increase at this freeway weave under all build alternatives. This is a **significant** impact. The impacts of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-4v: Participate in Fair Share Funding of Improvements to Reduce Impacts on the U.S. 50 Eastbound / Prairie City Road Flyover On Ramp to Oak Avenue Parkway Off Ramp Weave (Freeway Weave 7).

To ensure that Eastbound U.S. 50 operates at an acceptable LOS, the northbound Prairie City Road slip on ramp should start the eastbound auxiliary lane that extends to and drops at the Oak Avenue Parkway off ramp (see mitigation measure 3A.15-4u, v and x), and the southbound Prairie City Road flyover on ramp should be braided over the Oak Avenue Parkway off ramp and start an extended full auxiliary lane to the East Bidwell Street – Scott Road off ramp. Improvements to this freeway segment must be implemented by Caltrans. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Eastbound/Prairie City Road Flyover On Ramp to Oak Avenue Parkway Off Ramp Weave (Freeway Weave 7).

Implementation: California Department of Transportation.

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: California Department of Transportation.

Implementation of Mitigation Measure 3A.15-4v would reduce the significant impact on Freeway Weave 7 from the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives under cumulative (2030) conditions to a less-than-significant level, by allowing this merge to operate at an acceptable LOS. With the proposed mitigated design this weaving segment will no longer exist, and be replaced with a weaving segment that will operate at LOS F but with a lower traffic density than under the No Project condition.

If Caltrans implements the improvements, the impact would be reduced to less than significant.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom would mitigate or substantially lessen the project's significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Caltrans, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

IMPACT 3A.15-4w — Unacceptable LOS at the U.S. 50 Eastbound / Oak Avenue Parkway Loop Ramp Merge (Freeway Merge 8). *Project and alternative traffic would increase at this LOS F freeway merge during the a.m. and p.m. peak traffic hours with project traffic under cumulative (2030) conditions.*

NCP, PP, RIM, CD, RHD

This freeway merge would operate at an unacceptable LOS F during the a.m. and p.m. peak traffic hours with or without project and all alternatives traffic under cumulative (2030) conditions. Project and alternative traffic would increase at this freeway merge under all build alternatives. This is a **significant** impact. The impacts of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-4w: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Eastbound / Oak Avenue Parkway Loop Ramp Merge (Freeway Merge 8).

To ensure that Eastbound U.S. 50 operates at an acceptable LOS, the southbound Oak Avenue Parkway loop on ramp should merge with the eastbound auxiliary lane that starts at the southbound Prairie City Road braided flyover on ramp and ends at the East Bidwell Street – Scott Road off ramp (see mitigation measure 3A.15-4u, v and w). Improvements to this freeway segment must be implemented by Caltrans. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to U.S. 50 Eastbound/Oak Avenue Parkway Loop Ramp Merge (Freeway Merge 8).

Implementation: California Department of Transportation.

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: California Department of Transportation.

Implementation of Mitigation Measure 3A.15-4w would reduce the significant impact on Freeway Merge 8 from the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives under cumulative (2030) conditions to a less-than-significant level, by allowing this merge to operate at LOS C.

If Caltrans implements the improvements, the impact would be reduced to less than significant.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom would mitigate or substantially lessen the project's significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Caltrans, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

IMPACT 3A.15-4x Unacceptable LOS at the U.S. 50 Westbound / Empire Ranch Road Loop Ramp Merge (Freeway Merge 27). *This freeway merge would degrade to an unacceptable LOS F during the a.m. and p.m. peak traffic hours with the project and build alternative traffic under cumulative (2030) conditions.*

NCP, PP, RIM, CD, RHD

This freeway merge would degrade from an acceptable LOS D to an unacceptable LOS F during the a.m. and p.m. peak traffic hours with the project and all build alternatives traffic under cumulative (2030) conditions. This is a **significant** impact. The impacts of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-4x: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Westbound / Empire Ranch Road Loop Ramp Merge (Freeway Merge 27).

To ensure that Westbound U.S. 50 operates at an acceptable LOS, the northbound Empire Ranch Road loop on ramp should start the westbound auxiliary lane that ends at the East Bidwell Street – Scott Road

off ramp. The slip on ramp from southbound Empire Ranch Road slip ramp would merge into this extended auxiliary lane. Improvements to this freeway segment must be implemented by Caltrans. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Westbound/Empire Ranch Road loop ramp merge (Freeway Merge 27).

Implementation: California Department of Transportation.

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: California Department of Transportation.

Implementation of Mitigation Measure 3A.15-4x would reduce the significant impact on Freeway Merge 27 from the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives under cumulative (2030) conditions to a less-than-significant level, by allowing this on ramp to enter into its own lane and eliminating the direct merge to the freeway mainline. With the elimination of the direct merge movement there is no specific LOS for the mitigated condition.

If Caltrans implements the improvements, the impact would be reduced to a less-than-significant level.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom would mitigate or substantially lessen the project's significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Caltrans, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

IMPACT 3A.15-4y Unacceptable LOS at the U.S. 50 Westbound / Prairie City Road Loop Ramp Merge (Freeway Merge 35). *Project and alternative traffic would increase at this LOS F freeway merge during the a.m. and p.m. peak traffic hours with project and build alternative traffic under cumulative (2030) conditions.*

NCP, PP, RIM, CD, RHD

This freeway merge would operate at an unacceptable LOS F during the a.m. and p.m. peak traffic hours with or without project and all alternatives traffic under cumulative (2030) conditions. Project and alternative traffic would increase at this freeway merge under all build alternatives. This is a **significant** impact. The impacts of these alternatives would be similar to that of the Proposed Project.

Mitigation Measure 3A.15-4y: Participate in Fair Share Funding of Improvements to Reduce Impacts on U.S. 50 Westbound / Prairie City Road Loop Ramp Merge (Freeway Merge 35).

To ensure that Westbound U.S. 50 operates at an acceptable LOS, the northbound Prairie City Road loop on ramp should start the westbound auxiliary lane that continues beyond the Folsom Boulevard off ramp. The slip on ramp from southbound Prairie City Road slip ramp would merge into this extended auxiliary lane. Improvements to this freeway segment must be implemented by Caltrans. The applicant shall pay its proportionate share of funding of improvements, as may be determined by a nexus study or other

appropriate and reliable mechanism paid for by applicant, to reduce the impacts to the U.S. 50 Westbound/Prairie City Road Loop Ramp Merge (Freeway Merge 35).

Implementation: California Department of Transportation.

Timing: Before project build out. A phasing analysis should be performed prior to approval of the first subdivision map to determine during which project phase the improvement should be built.

Enforcement: California Department of Transportation.

Implementation of Mitigation Measure 3A.15-4y would reduce the significant impact on Freeway Merge 35 from the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development alternatives under cumulative (2030) conditions to a less-than-significant level, by allowing this on ramp to enter into its own lane and eliminating the direct merge to the freeway mainline . There is no specific resulting mitigated merge LOS because with the on ramp entering its own exclusive lane at the beginning of an auxiliary lane there is no longer a merge.

If Caltrans implements the improvements, the impact would be reduced to a less-than-significant level.

As discussed above, the requirement that the Applicant participate in funding these transportation improvements that are located outside the City of Folsom would mitigate or substantially lessen the project's significant impact on this intersection but the impact would remain **significant and unavoidable**. This conclusion reflects the reality that successful implementation the proposed improvements will require the cooperation of Caltrans, over which the City of Folsom has no control. For this reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with CEQA Guidelines section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

MITIGATED TRANSPORTATION NETWORK

While the mitigation measures detailed in this document are effective at reducing the level of significance of many transportation impacts, congested conditions would remain in the vicinity of the project, due to the traffic associated with the project as well as extensive development in the site environs and throughout the region. Each mitigation measure address a specific deficiency. However, on a system wide basis, these individual measures are unable to fully mitigate the impacts of the Proposed Project or build alternatives.

As an alternative method of project mitigation, a mitigated transportation network has been developed to address anticipated travel demand in the project area on a systematic basis, rather than a location-by-location approach. The intent is to provide a balanced transportation system, providing efficient movement of people and goods in the study area. Some of the network includes facilities that are not currently identified in area General Plans or in the 2035 MTP, but which would contribute to effectively accommodating anticipated travel demand.

The proposed network includes many improvements intended to systematically mitigate project impacts. The mitigation elements inside the City of Folsom could be implemented by the City. Roadway improvements outside the City of Folsom's jurisdiction would need to be implemented by others. The list of improvements assumed in the mitigated transportation network includes:

- Sibley Street/Blue Ravine Road - Add second northbound left turn lane
- East Bidwell Street/Nesmith Court - Add second westbound right turn lane

- Serpa Way/Iron Point Road - Restripe northbound lane as shared left through lane
- Empire Ranch Road/Iron Point Road - Add a second northbound and southbound left turn lane
- Oak Avenue Parkway/Easton Valley Parkway - Add second southbound right turn lane
- Oak Avenue Parkway/Easton Valley Parkway - Add second southbound right turn lane
- Oak Avenue Parkway/White Rock Road - Add second southbound right turn lane
- Empire Ranch Road/White Rock Road - Add second eastbound right turn lane
- White Rock Road/ Grant Line Road - Grade separation
- White Rock Road - Grant Line Road to Carson Crossing Road - Widened to six lanes
- Grant Line Road - White Rock Road to Jackson Highway (SR 16) - Widened to six lanes
- Empire Ranch Road - White Rock Road to Carson Crossing Road – extend as new four lane road
- "Truck Road" from Grant Line Road to Scott Road (East) – Add a new two lane road (for rock quarry trucks).
- Eastbound U.S. 50 - Prairie City Road to Oak Avenue Parkway – braid Oak Avenue Parkway off-ramp with southbound Prairie City Road flyover on-ramp
- Eastbound U.S. 50 - Prairie City Road to Oak Avenue Parkway – add auxiliary lane from the northbound Prairie City Road slip on-ramp to the Oak Avenue Parkway off-ramp
- Eastbound U.S. 50 - Oak Avenue Parkway to Scott Road– extend auxiliary lane from Scott Road/ East Bidwell Street off-ramp back to the southbound Prairie City Road flyover on-ramp
- Westbound U.S. 50 - Empire Ranch Road to Scott Road - extend auxiliary lane from the Scott Road/East Bidwell Street off-ramp back to the northbound Empire Ranch Road loop on-ramp
- Westbound U.S. 50 - Prairie City Road to Folsom Blvd - extend auxiliary lane from the Folsom Blvd off-ramp is back to the northbound Prairie City Road loop on-ramp

A map of the improvements is shown in Exhibit 3A.15-101. The improvements to eastbound U.S. 50 should be built together as a package. The widening of White Rock Road is included in the 2035 MTP, but not in the Sacramento County General Plan. The widening of Grant Line Road is planned in the Sacramento County General Plan, but not included in the 2035 MTP. Both are in the Sacramento County Roadway Impact Fee Program. The extension of Empire Ranch Road south from White Rock Road to Golden Foothills Parkway, in the El Dorado Hills Business Park, is currently being planned by the El Dorado County / City of Folsom Joint Powers Authority but it is not on the Sacramento County General Plan Circulation diagram.

MITIGATED NETWORK ANALYSIS CONCLUSIONS

Exhibits 3A.15-102 through 3A.15-109 illustrate traffic volumes associated with the development of the project and the mitigated network. Tables 3A.15-34 through 3A.15-42 summarize how the mitigated transportation network would improve the level of service for the proposed project and eliminate most impacts. The widening of White Rock Road diverts traffic off of U.S. 50, and improves the freeway Level of Service.

Table 3A.15-34
Intersection Levels of Service — Cumulative (2030) Conditions – City of Folsom – With Mitigated Transportation Network

Intersection	Control	No Project				Proposed Project				Proposed Project With Mitigated Transportation Network			
		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
		Delay[1]	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Folsom Blvd / Blue Ravine Road	Signalized	**49.4**	**D**	**64.0**	**E**	**49.5**	**D**	**64.4**	**E**	**50.1**	**D**	**63.7**	**E**
2. Sibley Street / Blue Ravine Road	Signalized	**48.0**	**D**	30.3	C	**55.0**	**D**	30.1	C	**36.0**	**D**	29.3	C
3. Oak Avenue Parkway / Blue Ravine Road	Signalized	**35.1**	**D**	**37.2**	**D**	**35.9**	**D**	**37.7**	**D**	**35.8**	**D**	**37.5**	**D**
4. Empire Ranch Road / Natoma Street	Signalized	10.2	B	8.8	A	24.9	C	9.3	A	24.2	C	9.0	A
5. Oak Avenue Parkway / Riley Street	Signalized	19.7	B	24.7	C	19.6	B	24.8	C	19.8	B	25.2	C
6. Oak Avenue Parkway / East Bidwell Street	Signalized	30.4	C	**40.8**	**D**	32.2	C	**48.6**	**D**	32.3	C	**48.2**	**D**
7. Nesmith Court / East Bidwell Street	Signalized	23.5	C	**54.8**	**D**	24.7	C	**62.6**	**E**	24.4	C	28.2	C
8. Scholar Way / East Bidwell Street	Signalized	12.6	B	14.3	B	12.4	B	16.2	B	12.4	B	16.7	B
9. Power Center Drive / East Bidwell Street	Signalized	8.1	A	18.8	B	7.0	A	17.7	B	7.1	A	18.3	B
10. Broadstone Parkway / East Bidwell Street	Signalized	27.1	C	31.5	C	28.2	C	33.1	C	27.8	C	32.9	C
11. Empire Ranch Road / Broadstone Parkway	Signalized	20.1	C	21.7	C	19.9	B	24.4	C	19.7	B	24.2	C
12. Oak Avenue Parkway / Haverhill Drive	Signalized	16.7	B	9.7	A	15.0	B	8.8	A	15.0	B	8.7	A
13. Oak Avenue Parkway / Halidon Way	Signalized	13.9	B	11.5	B	14.6	B	12.9	B	14.6	B	13.0	B
14. Folsom Blvd / Iron Point Road	Signalized	21.1	C	26.3	C	20.3	C	30.3	C	19.4	B	29.2	C
15. Prairie City Road / Iron Point Road	Signalized	24.8	C	32.3	C	24.9	C	30.6	C	24.9	C	30.4	C
16. Grover Road / Iron Point Road	Signalized	19.6	B	11.5	B	18.8	B	11.2	B	18.9	B	11.9	B
17. McAdoo Drive / Iron Point Road	Signalized	22.3	C	15.1	B	20.8	C	16.7	B	20.9	C	16.9	B
18. Oak Avenue Parkway / Iron Point Road	Signalized	31.4	C	**44.0**	**D**	32.6	C	**40.4**	**D**	32.5	C	**39.9**	**D**
19. Rowberry Drive / Iron Point Road	Signalized	10.0	A	9.7	A	27.1	C	32.0	C	27.1	C	32.0	C
20. Broadstone Parkway / Iron Point Road	Signalized	18.1	B	20.4	C	18.2	B	20.2	C	18.5	B	20.2	C
21. East Bidwell Street / Iron Point Road	Signalized	26.6	C	**60.6**	**E**	29.7	C	**77.0**	**E**	29.4	C	**81.8**	**F**
22. Cavitt Road / Iron Point Road	Signalized	14.8	B	21.5	C	12.9	B	21.6	C	12.9	B	21.5	C
23. Serpa Way / Iron Point Road	Signalized	24.2	C	**39.2**	**D**	24.3	C	**43.7**	**D**	25.8	C	**51.0**	**D**
24. Empire Ranch Road / Iron Point Road	Signalized	**80.5**	**F**	**60.7**	**E**	**82.2**	**F**	**79.9**	**E**	**46.9**	**D**	**50.6**	**D**
25. Prairie City Road / High School	Signalized	34.8	C	24.3	C	34.8	C	25.8	C	34.3	C	25.3	C
26. East Bidwell Street / Placerville Road	Signalized	**446.2**	**F**	**1,328.8**	**F**	**145.3**	**F**	**965.6**	**F**	**136.1**	**F**	**995.9**	**F**
27. Prairie City Road / White Rock Road	Signalized	**61.8**	**E**	26.4	C	**40.6**	**D**	24.8	C	34.2	C	**74.0**	**E**
28. Scott Road (West) / White Rock Road	Signalized	**37.2**	**D**	9.8	A	**36.0**	**D**	10.2	B	13.1	B	8.9	A
29. Scott Road (East) / White Rock Road	Signalized	**63.9**	**E**	27.2	C	**35.6**	**D**	22.1	C	28.0	C	22.1	C
30. Placerville Road / White Rock Road	Side-street stop[2]	0.0	A	21.4	C	11.7	B	9.7	A	12.7	B	10.5	B
31. Empire Ranch Road / North Road	Signalized					10.6	B	18.3	B	10.7	B	18.0	B

Table 3A.15-34
Intersection Levels of Service — Cumulative (2030) Conditions – City of Folsom – With Mitigated Transportation Network

Intersection	Control	No Project				Proposed Project				Proposed Project With Mitigated Transportation Network			
		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
		Delay[1]	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
32. Prairie City Road / Easton Valley Parkway	Signalized	14.2	B	18.5	B	32.1	C	32.6	C	31.9	C	34.3	C
33. Oak Avenue Parkway / Easton Valley Parkway	Signalized	NA	NA	NA	NA	**37.3**	**D**	30.3	C	30.3	C	28.0	C
34. Rowberry Drive / Easton Valley Parkway	Signalized	NA	NA	NA	NA	21.2	C	24.7	C	21.8	C	25.3	C
35. 1st Street / Easton Valley Parkway	Signalized	NA	NA	NA	NA	18.9	B	19.2	B	19.5	B	19.2	B
36. 2nd Street / Easton Valley Parkway	Signalized	NA	NA	NA	NA	25.0	C	28.6	C	25.7	C	29.9	C
37. 3rd Street / Easton Valley Parkway	Signalized	NA	NA	NA	NA	24.6	C	26.2	C	24.1	C	26.8	C
38. Scott Road (East) / Easton Valley Parkway	Signalized	NA	NA	NA	NA	31.2	C	**41.2**	**D**	30.8	C	**41.5**	**D**
39. Placerville Road / Easton Valley Parkway	Signalized	NA	NA	NA	NA	31.4	C	31.0	C	0.8	A	0.9	A
40. 4th Street / Easton Valley Parkway	Signalized	NA	NA	NA	NA	NA	NA	NA	NA	31.5	C	31.2	C
41. Hillside Drive / Easton Valley Parkway	Signalized	NA	NA	NA	NA	16.1	B	16.4	B	16.2	B	17.0	B
42. Empire Ranch Road / Easton Valley Parkway	Signalized	NA	NA	NA	NA	23.5	C	27.9	C	23.7	C	27.1	C
43. Prairie City Road / Middle Road	Signalized	NA	NA	NA	NA	8.1	A	11.0	B	8.9	A	9.1	A
44. Oak Avenue Parkway / Middle Road	Signalized	NA	NA	NA	NA	16.6	B	22.3	C	16.2	B	19.6	B
45. Scott Road (East) / Street "B"	Signalized	NA	NA	NA	NA	22.0	C	26.0	C	24.1	C	27.1	C
46. East Road / Street "B"	Signalized	NA	NA	NA	NA	24.6	C	24.3	C	24.7	C	24.2	C
47. Prairie City Road / Street "A"	Signalized	NA	NA	NA	NA	8.9	A	9.6	A	9.0	A	8.6	A
48. Oak Avenue Parkway / Street "A"	Signalized	NA	NA	NA	NA	24.6	C	27.6	C	25.0	C	28.7	C
49. 2nd Street / Street "A"	Signalized	NA	NA	NA	NA	18.0	B	18.4	B	17.9	B	18.3	B
50. Scott Road (East) / Street "A"	Signalized	NA	NA	NA	NA	22.9	C	22.2	C	23.4	C	21.4	C
51. East Road / Street "A"	Signalized	NA	NA	NA	NA	9.7	A	9.8	A	9.8	A	9.8	A
52. Placerville Road / Street "A"	Signalized	NA	NA	NA	NA	25.7	C	26.5	C	25.1	C	25.8	C
53. Empire Ranch Road / Street "A"	Signalized	NA	NA	NA	NA	14.9	B	14.1	B	14.2	B	12.7	B
54. Scott Road (East) / South Road	Signalized	NA	NA	NA	NA	18.8	B	20.7	C	19.1	B	20.3	C
55. Oak Avenue Parkway / White Rock Road	Signalized	NA	NA	NA	NA	27.3	C	27.1	C	30.9	C	24.6	C
56. Empire Ranch Road / White Rock Road	Signalized	NA	NA	NA	NA	28.9	C	17.7	B	32.4	C	28.4	C

Notes: LOS = level of service; U.S. 50 = U.S. Highway 50; V/C = volume-to-capacity; Blank = intersection does not exist under this alternative
[1] Average intersection delay reported for all-way-stop intersections; worst-case delay reported for unsignalized, side-street-stop intersections; average intersection delay reported for all-way-stop intersections. All delays are reported in seconds per vehicle.
[2] Intersection signalized with the proposed project.
Bold indicates deficiency. Shaded areas indicate impact.
Source: Data provided by DKS Associates in 2009

Table 3A.15-35
Intersection Levels of Service — Cumulative (2030) Conditions – Sacramento County – With Mitigated Transportation Network

Intersection	Control	No Project				Proposed Project				Proposed Project With Mitigated Transportation Network			
		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
		V/C[1] or Delay[2]	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS
1. Hazel Avenue / Gold Country Blvd	Signalized	0.98	E	**1.25**	**F**	0.99	E	**1.27**	**F**	**1.09**	**F**	**1.39**	**F**
2. Hazel Avenue / Folsom Blvd	Signalized	0.78	C	0.81	D	0.76	C	0.83	D	0.83	D	0.90	E
3. Grant Line Road / White Rock Road	Signalized	0.96	E	0.90	D	**1.03**	**F**	0.97	E	Converted to Interchange			
4. Grant Line Road / Sunrise Blvd	Signalized	0.82	D	0.69	B	0.82	D	0.70	C	0.91	E	0.81	D
5. Hazel Avenue / Easton Valley Parkway	Signalized	0.41	A	0.68	B	0.45	A	0.71	C	0.49	A	0.77	C
6. Aerojet Road / Easton Valley Parkway	Signalized	0.32	A	0.59	A	0.40	A	0.76	C	0.42	A	0.81	D
7. Alabama Avenue / Easton Valley Parkway	Signalized	0.33	A	0.31	A	0.40	A	0.37	A	0.43	A	0.39	A
8. Glenborough Road / Easton Valley Parkway	Signalized	0.29	A	0.35	A	0.40	A	0.50	A	0.43	A	0.53	A

Notes: LOS = level of service; V/C = volume-to-capacity
[1] V/C ratio is shown for signalized intersections. Delay is shown for unsignalized intersections.
[2] Average intersection delay reported in seconds per vehicle.
Bold indicates deficiency. Shaded areas indicate impact.
Source: Data provided by DKS Associates in 2009

Table 3A.15-36
Roadway Segment Levels of Service — Cumulative (2030) Conditions - Sacramento County – With Mitigated Transportation Network

Roadway Segment	Lanes	No Project			Proposed Project			Proposed Project With Mitigated Transportation Network		
		Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS
1. Folsom Blvd — Sunrise Blvd to Mercantile Drive	4	31,900	0.89	D	32,000	0.89	D	31,700	0.88	D
2. Folsom Blvd — Mercantile Drive to Hazel Avenue	4	22,700	0.63	B	23,200	0.64	B	22,700	0.63	B
3. Folsom Blvd — Hazel Avenue to Aerojet Road	4	8,000	0.22	A	8,900	0.25	A	8,500	0.24	A
4. Folsom Blvd — Aerojet Road to U.S. 50	4	26,300	0.73	C	25,400	0.71	C	25,400	0.71	C
5. Grant Line Road—White Rock Road to Century Road	4	57,600	**1.44**	**F**	65,100	**1.63**	**F**	60,200	**1.00**	**F**
6. Grant Line Road— Century Road to Douglas Road	4	55,500	**1.39**	**F**	62,000	**1.55**	**F**	71,500	**1.19**	**F**
7. Grant Line Road—Douglas Road to Kiefer Road	4	57,000	**1.58**	**F**	60,800	**1.69**	**F**	70,100	**1.17**	**F**
8. Grant Line Road— Kiefer Road to SR Jackson Road (SR16)	4	37,600	**1.04**	**F**	39,500	**1.10**	**F**	43,300	0.72	C
9. Grant Line Road — Jackson Road (SR16) to Sunrise Blvd	4	37,000	**1.03**	**F**	38,600	**1.07**	**F**	40,900	**1.02**	**F**
10. Hazel Avenue — Greenback Lane to Madison Avenue	6	56,300	**1.04**	**F**	56,800	**1.05**	**F**	57,000	**1.06**	**F**
11. Hazel Avenue — Madison Avenue to Curragh Downs Drive	6	76,700	**1.42**	**F**	78,900	**1.46**	**F**	79,000	**1.46**	**F**
12. Hazel Avenue — Curragh Downs Drive to Gold Country Blvd[1]	6	88,000	**1.47**	**F**	91,300	**1.52**	**F**	91,400	**1.52**	**F**
13. Hazel Avenue — Gold Country Blvd to U.S. 50 westbound ramp	6	91,100	**1.52**	**F**	94,800	**1.58**	**F**	94,900	**1.58**	**F**
14. Jackson Highway (SR 16) — Grant Line Road to Dillard Road	2	13,200	0.58	D	12,900	0.56	D	12,800	0.56	D
15. Jackson Highway (SR 16) — Dillard Road to Rancho Murieta Parkway	2	16,400	0.72	E	16,500	0.72	E	15,900	0.69	E
16. Prairie City Road —U.S. 50 eastbound ramp to Easton Valley Parkway	4 - 6	35,700	0.99	E	39,500	0.73	C	41,200	0.76	C
17. Prairie City Road —Easton Valley Parkway to White Rock Road	2 - 4	25,100	**1.39**	**F**	37,200	**1.03**	**F**	40,600	**1.13**	**F**
18. Scott Road (West) — White Rock Road to Latrobe Road	2	3,900	0.23	C	5,700	0.34	C	5,100	0.30	C
19. Stone House Road — Latrobe Road to Jackson Highway (SR 16)	2	5,700	0.34	C	7,400	0.44	D	6,900	0.41	D
20. Sunrise Boulevard — Jackson Highway (SR 16) to Grant Line Road	6	22,300	0.62	B	22,500	0.63	B	22,800	0.63	B
21. White Rock Road— Ranch Cordova City Limit to Grant Line Road	4	15,800	0.44	A	19,900	0.55	A	23,500	0.65	B
22. White Rock Road—Grant Line Road to Prairie City Road	**4**	74,300	**1.86**	**F**	85,800	**2.15**	**F**	80,200	**1.34**	**F**
23. White Rock Road— Prairie City Road to Scott Road (West)	4 - 5	67,100	**1.68**	**F**	69,800	**1.40**	**F**	59,800	1.00	E
24. White Rock Road— Scott Road (West) to Oak Avenue Parkway	4 - 5	52,400	**1.31**	**F**	56,500	**1.13**	**F**	56,600	0.94	E
25. White Rock Road— Oak Avenue Parkway to Scott Road (East)	4 - 5	52,400	**1.31**	**F**	59,800	**1.20**	**F**	58,200	0.97	E
26. White Rock Road— Scott Road (East) to Placerville Road	4 - 5	29,500	0.74	C	30,300	0.61	B	37,300	0.62	B
27. White Rock Road— Placerville Road to Empire Ranch Road	4 - 5	34,500	0.86	D	38,000	0.76	C	46,900	0.78	C
28. White Rock Road— Empire Ranch Road to Carson Crossing Road	6	34,500	0.86	D	49,300	0.99	E	24,500	0.41	A
29. Hazel Avenue — Folsom Boulevard connector to Easton Valley Parkway	6	17,600	0.33	A	19,000	0.35	A	18,800	0.35	A
30. Easton Valley Parkway — Hazel Avenue to Aerojet Road	6	31,300	0.58	A	34,200	0.63	B	33,500	0.62	B
31. Easton Valley Parkway — Aerojet Road to Alabama Avenue	6	19,600	0.36	A	27,300	0.51	A	26,800	0.50	A
32. Easton Valley Parkway — Alabama Avenue to Glenborough Road	6	15,400	0.29	A	23,700	0.44	A	23,000	0.43	A
33. Easton Valley Parkway — Glenborough Road to Prairie City Road	6	16,700	0.31	A	28,000	0.52	A	27,700	0.51	A
34. Empire Ranch Road — White Rock Road to Carson Crossing Road	0 – 0 - 4	NA	NA	NA	NA	NA	NA	40,000	**1.00**	**F**

Notes: LOS = level of service; SR = State Route; U.S. 50 = U.S. Highway 50; V/C = volume-to-capacity
Lanes: Cumulative No Project – Cumulative Plus Project (or alternative)
Bold indicates deficiency. Shaded areas indicate impact.
Source: Data provided by DKS Associates in 2009

Table 3A.15-37
Intersection Levels of Service — Cumulative (2030) Conditions – City of Rancho Cordova – With Mitigated Transportation Network

Intersection	Control	No Project				Proposed Project				Proposed Project With Mitigated Transportation Network			
		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
		V/C[1] or Delay[2]	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS
1. Sunrise Blvd / White Rock Road	Signalized	0.63	B	0.68	B	0.67	B	0.67	B	0.72	C	0.71	C
2. Fitzgerald Road / White Rock Road	Signalized	0.32	A	0.34	A	0.31	A	0.33	A	0.34	A	0.37	A
3. Sunrise Blvd / Douglas Road	Signalized	0.65	B	0.81	D	0.71	C	0.80	C	0.71	C	0.85	D
4. Grant Line Road / Douglas Road	Signalized	0.72	C	0.61	B	0.76	C	0.64	B	0.78	C	0.73	C
5. Grant Line Road / Kiefer Road	Signalized	0.85	D	0.63	B	0.86	D	0.65	B	0.89	D	0.69	B
6. Rancho Cordova / Easton Valley	Signalized	0.72	C	**0.99**	**E**	0.70	C	**0.96**	**E**	0.71	C	**1.00**	**E**
7. Rancho Cordova / White Rock Road	Signalized	**1.01**	**F**	0.87	D	**1.02**	**F**	0.87	D	**1.12**	**F**	**0.92**	**E**
8. International Drive / White Rock Road	Signalized	0.45	A	0.66	B	0.44	A	0.70	B	0.48	A	0.77	C
9. Rio Del Oro Parkway / White Rock Road	Signalized	0.52	A	0.36	A	0.54	A	0.37	A	0.63	B	0.47	A
10. Villagio Parkway / White Rock Road	Signalized	0.35	A	0.44	A	0.41	A	0.53	A	0.51	A	0.71	C
11. Sunrise Blvd /International Drive	Signalized	0.74	C	0.72	C	0.75	C	0.69	B	0.82	D	0.75	C
12. Villagio Parkway / Americanos Road	Signalized	0.58	A	0.56	A	0.58	A	0.63	B	0.63	B	0.65	B
13. Grant Line Road / Centennial Road	Signalized	0.84	D	0.67	B	0.89	D	0.74	C	0.90	D	0.80	C
14. Villagio Parkway / Rancho Cordova Parkway	Signalized	0.65	C	0.54	C	0.68	C	0.53	C	0.65	C	0.55	C
15. Rancho Cordova Parkway / Douglas Road	Signalized	0.49	A	0.77	C	0.50	A	0.76	C	0.54	A	0.84	D
16. Americanos Blvd / Douglas Road	Signalized	0.59	A	0.78	C	0.49	C	0.68	C	0.47	C	0.65	C
17. Grant Line Road / Chrysanthy Blvd	Signalized	0.87	D	0.64	B	0.90	D	0.65	B	0.79	C	0.69	B
18. Grant Line Road / Rancho Cordova	Signalized	0.53	A	0.39	A	0.55	A	0.41	A	0.72	C	0.52	A

Notes: LOS = level of service; V/C = volume-to-capacity
[1] V/C ratio is shown for signalized intersections. Delay is shown for unsignalized intersections.
[2] Worst-case delay reported for unsignalized, side-street-stop intersections; average intersection delay reported for all-way-stop intersections. Both delays are reported in seconds per vehicle.
Bold indicates deficiency. Shaded areas indicate impact.
Source: Data provided by DKS Associates in 2009

Table 3A.15-38
Roadway Segment Levels of Service — Cumulative (2030) Conditions - City of Rancho Cordova – With Mitigated Transportation Network

Roadway Segment	Lanes	No Project			Proposed Project			Proposed Project With Mitigated Transportation Network		
		Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS
1. Douglas Road—Sunrise Blvd to Villagio Parkway	6	30,100	0.56	A	29,700	0.55	A	29,400	0.54	A
2. Douglas Road— Villagio Parkway to Rancho Cordova Parkway	6	25,200	0.47	A	24,400	0.45	A	24,200	0.45	A
3. Douglas Road— Rancho Cordova Parkway to Americanos Road	6	13,900	0.26	A	13,300	0.25	A	13,900	0.26	A
4. Douglas Road— Americanos Road to Grant Line Road	6	15,300	0.28	A	15,200	0.28	A	17,600	0.33	A
5. Sunrise Blvd—U.S. 50 eastbound ramps to Folsom Blvd	8	79,300	**1.10**	**F**	79,200	**1.10**	**F**	78,700	**1.09**	**F**
6. Sunrise Blvd—Folsom Blvd to White Rock Road	6	49,900	**0.92**	**E**	49,400	**0.91**	**E**	48,600	0.90	**E**
7. Sunrise Blvd—White Rock Road to Douglas Road	6	34,200	0.63	B	33,500	0.62	B	33,100	0.61	B
8. Sunrise Blvd—Douglas Road to Keifer Boulevard	6	35,500	0.66	B	35,600	0.66	B	34,800	0.64	B
9. Sunrise Boulevard—Keifer Boulevard to Jackson Highway (SR 16)	6	23,100	0.43	A	23,200	0.43	A	22,300	0.41	A
10. White Rock Road—Zinfandel Drive to Sunrise Blvd	4	9,400	0.17	A	9,300	0.17	A	9,800	0.18	A
11. White Rock Road— Sunrise Blvd to Rancho Cordova Parkway	6	36,800	0.68	B	36,200	0.67	B	37,200	0.69	B
12. White Rock Road— Rancho Cordova Parkway to International Drive	6	13,900	0.39	A	13,500	0.38	A	14,000	0.39	A
13. White Rock Road— International Drive to Rio Del Oro Parkway	6	12,400	0.34	A	13,700	0.38	A	15,500	0.43	A
14. White Rock Road— Rio Del Oro Parkway to Villagio Parkway	4	10,200	0.28	A	12,200	0.34	A	15,000	0.42	A
15. White Rock Road— Villagio Parkway to Grant Line Road	4	15,800	0.44	A	19,900	0.55	A	23,500	0.65	B
16. Easton Valley Parkway — Rancho Cordova Parkway to Hazel Avenue	6	39,000	0.72	C	38,800	0.72	C	54,000	0.71	C
17. Rancho Cordova Parkway - Easton Valley Parkway to International	6	51,100	**0.95**	**E**	49,600	**0.92**	**E**	54,000	0.87	D
18. Rancho Cordova Parkway - International Drive. to White Rock Road.	6	41,400	0.77	C	40,800	0.76	C	54,000	0.72	C
19. International Drive — White Rock Road. to Americanos Parkway.	6	17,900	0.33	A	18,900	0.35	A	54,000	0.35	A
20. International Drive — Americanos Parkway to Rancho Cordova Parkway	6	33,600	0.62	B	34,000	0.63	B	54,000	0.64	B
21. International Drive. — Rancho Cordova Parkway. to Sunrise Blvd.	6	31,700	0.59	A	31,700	0.59	A	54,000	0.59	A
22. Villagio Parkway — White Rock Road. to Americanos Parkway.	2	5,700	0.32	A	7,800	0.43	A	18,000	0.46	A
23. Villagio Parkway — Americanos Parkway. to Rancho Cordova Parkway.	2	10,700	0.59	A	11,900	0.66	B	18,000	0.68	B
24. Villagio Parkway — Rancho Cordova Parkway. to Douglas Road.	2	12,200	0.68	B	13,000	0.72	C	18,000	0.73	C

Notes: LOS = level of service; SR = State Route; U.S. 50 = U.S. Highway 50; V/C = volume-to-capacity
Bold indicates deficiency. Shaded areas indicate impact.
Source: Data provided by DKS Associates in 2009

Table 3A.15-39
Intersection Levels of Service — Cumulative (2030) Conditions – El Dorado County – With Mitigated Transportation Network

Intersection	Control	No Project				Proposed Project				Proposed Project With Mitigated Transportation Network			
		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
		Delay[1]	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. White Rock Road / Carson Crossing Road	Signalized	27.7	C	22.6	C	**100.8**	**F**	35.1	D	5.5	A	8.5	A
2. White Rock Road / Stonebriar Drive	Signalized	15.4	B	11.2	B	15.1	B	10.4	B	12.7	B	9.4	A
3. White Rock Road / Windfield Way	Signalized	23.9	C	29.6	C	24.5	C	31.3	C	24.6	C	49.0	D
4. White Rock Road / Latrobe Road	Signalized	40.1	D	32.0	C	37.4	D	29.9	C	40.8	D	33.5	C
5. White Rock Road / Valley View Parkway	Signalized	35.3	D	**81.1**	**F**	42.6	D	65.5	E	46.3	D	61.8	E
6. El Dorado Hills Blvd / Serrano Parkway	Signalized	48.2	D	25.6	C	35.9	D	26.2	C	38.6	D	27.6	C
7. El Dorado Hills Blvd / Saratoga Way	Signalized	42.5	D	40.2	D	30.5	C	43.5	D	30.0	C	44.4	D
8. El Dorado Hills Blvd / Park Drive	Signalized	30.7	C	29.5	C	24.7	C	27.2	C	24.4	C	26.8	C
9. Latrobe Road / Town Center Blvd	Signalized	35.0	D	**95.5**	**F**	34.0	C	77.5	E	33.5	C	**80.7**	**F**

Notes: LOS = level of service;
Bold indicates deficiency. Shaded areas indicate impact.
Source: Data provided by DKS Associates in 2009

Table 3A.15-40
Intersection Levels of Service — Cumulative (2030) Conditions – Caltrans – With Mitigated Transportation Network

Intersection	Control	No Project				Proposed Project				Proposed Project With Mitigated Transportation Network			
		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Hazel Avenue / Tributary - WB U.S. 50 ramps	Signalized	28.7	C	**94.1**	**F**	44.0	D	**102.3**	**F**	46.3	D	**102.8**	**F**
2. Hazel Avenue / EB U.S. 50 ramps	Signalized	43.8	D	**152.4**	**F**	36.5	D	**147.3**	**F**	37.0	D	**147.7**	**F**
3. Folsom Blvd / WB U.S. 50 ramps	Signalized	8.4	A	13.3	B	6.3	A	10.7	B	6.7	A	10.7	B
4. Folsom Blvd / EB U.S. 50 ramps	Signalized	30.5	C	39.1	D	26.8	C	29.8	C	26.8	C	30.2	C
5. Prairie City Road / WB U.S. 50 ramps	Signalized	30.0	C	30.2	C	37.2	D	12.9	B	42.6	D	12.7	B
6. Prairie City Road / EB U.S. 50 ramps	Signalized	22.2	C	15.9	B	21.2	C	13.3	B	20.5	C	12.2	B
7. East Bidwell Street / WB U.S. 50 ramps	Signalized	19.9	B	22.7	C	28.1	C	22.5	C	28.6	C	23.1	C
8. East Bidwell Street / EB U.S. 50 ramps	Signalized	20.3	C	23.6	C	17.1	B	20.7	C	16.6	B	20.1	C
9. El Dorado Hills Blvd / WB U.S. 50 ramps	Signalized	30.7	C	29.5	C	24.7	C	27.2	C	24.4	C	26.8	C
10. El Dorado Hills Blvd / EB U.S. 50 ramps	Signalized	4.4	A	5.0	A	3.8	A	4.2	A	3.8	A	3.7	A
11. Sunrise Boulevard / Jackson Highway (SR 16)	Signalized	29.4	C	29.9	C	29.2	C	30.3	C	28.5	C	31.2	C
12. Grant Line Road / Jackson Highway (SR 16)	Signalized	25.7	C	26.3	C	24.2	C	26.2	C	24.8	C	25.4	C
13. Oak Avenue Parkway / WB U.S. 50 ramps	Signalized	NA	NA	NA	NA	17.9	B	11.7	B	17.9	B	12.0	B
14. Oak Avenue Parkway / EB U.S. 50 ramps	Signalized	NA	NA	NA	NA	27.3	C	27.4	C	26.0	C	27.4	C
15. Empire Ranch Road / WB U.S. 50 ramps	Signalized	NA	NA	NA	NA	14.7	B	15.8	B	14.8	B	15.6	B
16. Empire Ranch Road / EB U.S. 50 ramps	Signalized	NA	NA	NA	NA	15.8	B	19.2	B	15.9	B	20.0	B
17. Silva Valley Road / WB U.S. 50 ramps	Signalized	39.4	D	25.5	C	39.5	D	25.3	C	36.5	D	29.7	C
18. Silva Valley Road / EB U.S. 50 ramps	Signalized	4.9	A	19.3	B	8.1	A	23.3	C	7.4	A	22.6	C

Notes: LOS = level of service; Blank = intersection does not exist under this alternative
Bold indicates deficiency. Shaded areas indicate impact.
Source: Data provided by DKS Associates in 2009

Table 3A.15-41
Freeway Mainline Levels of Service — Cumulative (2030) Conditions – Caltrans – With Mitigated Transportation Network

Freeway Segment	No Project				Proposed Project				Proposed Project With Mitigated Transportation Network			
	A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
	V/C	LOS[2]	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
EASTBOUND U.S. 50												
Zinfandel Drive to Sunrise Boulevard	**1.04**	**F**	**1.15**	**F**	**1.07**	**F**	**1.17**	**F**	**1.05**	**F**	**1.16**	**F**
Sunrise Blvd to Rancho Cordova Parkway	0.87	D	**1.02**	**F**	0.91	E	1.05	F	0.89	D	1.04	F
Rancho Cordova Parkway to Hazel Avenue	**1.03**	**F**	**1.15**	**F**	**1.08**	**F**	**1.18**	**F**	1.04	F	**1.16**	**F**
Hazel Avenue to Folsom Boulevard	0.90	D	0.88	D	0.95	E	1.00	E	0.91	E	0.96	E
Folsom Blvd to Prairie City Road	0.92	E	**1.10**	**F**	**1.01**	**F**	**1.15**	**F**	0.96	E	**1.12**	**F**
Prairie City Road to Oak Avenue Parkway	**1.11**	**F**	**1.17**	**F**	**1.22**	**F**	**1.19**	**F**	Braided Ramps - V/C<1			
Oak Avenue Parkway to East Bidwell Street - Scott Road	0.80	D	0.96	E	0.83	D	0.98	E	0.80	D	0.95	E
East Bidwell Street - Scott Road to Empire Ranch Road	0.77	D	1.00	E	0.86	D	1.05	F	0.79	D	**1.01**	**F**
Empire Ranch Road to El Dorado Hills Boulevard – Latrobe Road	0.71	C	0.87	D	0.72	C	0.89	D	0.67	C	0.84	D
El Dorado Hills Boulevard – Latrobe Road to Silva Valley Road	0.61	C	0.79	D	0.64	C	0.82	D	0.62	C	0.81	D
Silva Valley Road to Bass Lake Road	0.81	D	0.95	E	0.84	D	0.97	E	0.84	D	0.97	E
WESTBOUND U.S. 50												
Bass Lake Road to Silva Valley Road	0.95	E	0.70	C	0.96	E	0.70	C	0.97	E	0.70	C
Silva Valley Road to El Dorado Hills Boulevard – Latrobe Road	0.92	E	0.63	C	0.89	D	0.61	C	0.89	D	0.60	C
El Dorado Hills Boulevard – Latrobe Road to Empire Ranch Road	**1.08**	**F**	0.84	D	1.06	F	0.82	D	**1.05**	**F**	0.80	D
Empire Ranch Road to East Bidwell Street - Scott Road	0.86	D	0.65	C	0.98	E	0.80	D	0.98	E	0.78	D
East Bidwell Street - Scott Road to Oak Avenue Parkway	0.74	C	0.58	C	0.79	D	0.75	D	0.78	D	0.74	C
Oak Avenue Parkway to Prairie City Road	**1.23**	**F**	**1.10**	**F**	**1.13**	**F**	**1.02**	**F**	**1.13**	**F**	**1.00**	**F**
Prairie City Road to Folsom Boulevard	0.94	E	0.88	D	0.98	E	0.95	E	0.98	E	0.90	E
Folsom Boulevard to Hazel Avenue	0.92	E	0.82	D	0.97	E	0.89	D	0.96	E	0.85	D
Hazel Avenue to Rancho Cordova Parkway	**1.05**	**F**	**1.08**	**F**	**1.07**	**F**	**1.11**	**F**	**1.06**	**F**	**1.07**	**F**
Rancho Cordova Parkway to Sunrise Boulevard	**1.01**	**F**	**1.04**	**F**	**1.03**	**F**	**1.08**	**F**	**1.03**	**F**	**1.06**	**F**
Sunrise Boulevard to Zinfandel Drive	1.03	F	0.93	E	**1.04**	**F**	0.95	E	**1.03**	**F**	0.94	E

Notes: LOS = level of service; NA = not applicable; U.S. 50 = U.S. Highway 50; V/C = volume-to-capacity
1 Capacity based on 2200 vphpl for freeway lanes, 1600 vphpl for auxiliary lanes.
Bold indicates deficiency where calculation indicates that demand exceeds capacity. Shaded areas indicate impact.
Source: Data provided by DKS Associates in 2009

Table 3A.15-42
Merge/Diverge/Weave Levels of Service — Cumulative (2030) Conditions – Caltrans – With Mitigated Transportation Network

Freeway Ramp	Merge, Diverge, or Weave Maneuver	No Project				Proposed Project				Proposed Project With Mitigated Transportation Network			
		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
		Density[1]	LOS[2]	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS
EASTBOUND U.S. 50													
Hazel Avenue off-ramp	Diverge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hazel Avenue on-ramp – Aerojet off-ramp	Weave	32.4	D	29.9	D	36.2	E	36.1	E	34.7	D	34.7	D
Folsom Boulevard off-ramp	Diverge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Folsom Boulevard on-ramp	Merge	27.1	C	30.6	D	30.3	D	32.0	D	28.8	D	31.1	D
Prairie City Road off-ramp	Diverge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Prairie City Road direct on-ramp	Merge	**45.7**	**F**	**49.7**	**F**	**49.4**	**F**	**52.3**	**F**	NA	NA	NA	NA
Prairie City Road flyover on-ramp Oak Avenue Parkway off-ramp	Weave	**42.9**	**E**	**49.7**	**F**	**50.9**	**F**	**52.3**	**F**	NA	NA	NA	NA
Prairie City Road slip on-ramp to Oak Avenue Parkway off-ramp	Weave	NA	NA	NA	NA	NA	NA	NA	NA	39.1	E	40.7	E
Prairie City Road flyover on-ramp	Merge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oak Avenue Parkway loop on-ramp	Merge	**36.1**	**F**	**43.5**	**F**	**37.4**	**F**	**41.9**	**F**	21.6	C	24.2	C
Oak Avenue Parkway direct on-ramp	Merge	NA	NA	NA	NA	NA	NA	NA	NA	21.8	C	24.2	C
East Bidwell Street - Scott Road direct off-ramp	Diverge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
East Bidwell Street - Scott Road loop on-ramp	Merge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
East Bidwell Street - Scott Road direct on-ramp	Merge	20.5	C	26.6	C	24.1	C	29.7	D	21.6	C	28.3	D
Empire Ranch Road direct off-ramp	Diverge	23.1	C	26.9	C	26.1	C	28.7	D	24.5	C	27.9	C
Empire Ranch Road loop on-ramp	Merge	26.8	C	31.2	D	26.2	C	30.1	D	24.5	C	28.3	D
Empire Ranch Road direct on-ramp	Merge	24.8	C	28.8	D	25.9	C	30.3	D	24.1	C	28.5	D
El Dorado Hills Boulevard - Latrobe Road off-ramp	Diverge	35.5	E	38.2	E	35.5	E	38.3	E	34.0	D	36.5	E
El Dorado Hills Boulevard Latrobe Road on-ramp	Merge	21.7	C	27.3	C	22.1	C	27.9	C	22.4	C	27.9	C
Silva Valley Road direct off-ramp	Diverge	20.3	C	26.6	C	21.0	C	27.5	C	20.6	C	27.2	C
Silva Valley Road loop on-ramp	Merge	21.3	C	23.7	C	22.4	C	24.0	C	22.4	C	23.9	C
Silva Valley Road direct on-ramp	Merge	23.4	C	28.2	D	23.8	C	28.7	D	23.9	C	28.8	D

Table 3A.15-42
Merge/Diverge/Weave Levels of Service — Cumulative (2030) Conditions – Caltrans – With Mitigated Transportation Network

Freeway Ramp	Merge, Diverge, or Weave Maneuver	No Project				Proposed Project				Proposed Project With Mitigated Transportation Network			
		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
		Density[1]	LOS[2]	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS
WESTBOUND U.S. 50													
Silva Valley Road direct off-ramp	Diverge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silva Valley Road loop on-ramp	Merge	31.6	D	26.6	C	32.9	D	27.3	C	32.6	D	26.7	C
Silva Valley Road direct on-ramp	Merge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
El Dorado Hills Boulevard - Latrobe Road off-ramp	Diverge	15.5	B	10.7	B	15.7	B	10.8	B	15.8	B	10.5	B
El Dorado Hills Boulevard - Latrobe Road on-ramp	Merge	30.0	D	25.8	C	31.1	D	26.7	C	30.6	D	26.0	C
Empire Ranch Road direct off-ramp	Diverge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Empire Ranch Road loop on-ramp	Merge	**37.0**	**F**	29.2	D	**38.9**	**F**	32.3	D	NA	NA	NA	NA
Empire Ranch Road direct on-ramp	Merge	NA	NA	NA	NA	NA	NA	NA	NA	24.4	C	20.5	C
East Bidwell Street - Scott Road direct off-ramp	Diverge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
East Bidwell Street - Scott Road loop on-ramp	Merge	38.0	F	29.4	D	37.3	E	33.7	D	37.0	E	32.8	D
East Bidwell Street - Scott Road direct on-ramp	Merge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oak Avenue Parkway direct off-ramp	Diverge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oak Avenue Parkway loop on-ramp	Merge	**37.1**	**F**	28.9	D	**36.3**	**F**	32.4	D	**36.2**	**F**	31.7	D
Oak Avenue Parkway direct on-ramp Prairie City Road direct off-ramp	Weave	**52.8**	**F**	**47.7**	**F**	42.3	E	38.7	E	42.3	E	37.1	E
Prairie City Road loop on-ramp	Merge	**47.6**	**F**	**41.6**	**F**	**51.1**	**F**	**47.3**	**F**	NA	NA	NA	NA
Prairie City Road direct on-ramp	Merge	NA	NA	NA	NA	NA	NA	NA	NA	30.0	D	28.6	D
Folsom Boulevard off-ramp	Diverge	15.2	B	15.1	B	16.0	B	16.4	B	15.9	B	15.3	B
Folsom Boulevard on-ramp	Merge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hazel Avenue direct off-ramp	Diverge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hazel Avenue loop on-ramp	Merge	29.6	D	24.8	C	30.4	D	26.7	C	29.7	D	25.0	C
Hazel Avenue direct on-ramp	Merge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
LOS = level of service; NA = not applicable – a lane drops at off ramp or adds at on ramp; U.S. 50 = U.S. Highway 50; Blank = ramp does not exist under this alternative
[1] Density in passenger cars per mile per lane for merge/diverge analysis only.
[2] LOS computed for the merge/diverge/weave analysis consistent with *Highway Capacity Manual* (HCM) 2000 methodologies.
[3] Where an auxiliary lane begins at an on ramp (as an add lane) or where an auxiliary lane end at an off ramp (as an add lane)
Bold indicates deficiency where calculation indicates that demand exceeds capacity. Shaded areas indicate impact.
Source: Data provided by DKS Associates in 2009

CITY OF FOLSOM

The mitigated network mitigates the impacts to the intersections of

- Sibley Street / Blue Ravine Road
- East Bidwell Street / Nesmith Court
- Oak Avenue Parkway / Easton Valley Parkway

However, it does not mitigate the impacts to the intersections of

- Oak Avenue Parkway / East Bidwell Street,
- East Bidwell Street / Iron Point Road,
- Scott Road (East) / Easton Valley Parkway

The mitigated network creates a new impact to the intersection of

- Prairie City Road / White Rock Road

A potential mitigation for the Prairie City Road / White Rock Road intersection is replacement of the at grade intersection with a grade separated interchange.

SACRAMENTO COUNTY

The mitigated network mitigates the impacts to the roadway segments of

- Grant Line Road from White Rock Road to Jackson Highway (SR 16),
- Scott Road (West) from White Rock Road to Latrobe Road
- White Rock Road from Grant Line Road to Prairie City Road

However, it does not mitigate the impact to the roadway segment of

- Hazel Avenue from Curragh Downs Drive to U.S. 50 westbound ramp

The new road of Empire Ranch Road from White Rock Road to Carson Crossing Road is deficient at the assumed four lanes.

The mitigated network does not mitigate the impact to the intersection of

- Hazel Avenue / Gold Country Boulevard

CITY OF RANCHO CORDOVA

The mitigated network creates a new impact to the intersection of

- Rancho Cordova Parkway / White Rock Road.

EL DORADO COUNTY

The mitigated network mitigates the impacts to the intersection of

- White Rock Road / Carson Crossing Road.

CALTRANS

The mitigated network mitigates the impacts to the

- Eastbound Prairie City Road slip on-ramp merge
- Eastbound Prairie City Road flyover on to Oak Avenue Parkway off weave
- Eastbound Oak Avenue Parkway loop on-ramp merge
- Westbound Empire Ranch Road loop on-ramp merge
- Westbound Prairie City Road loop on-ramp merge

The mitigated network mitigates the impacts to the Eastbound U.S. 50 freeway segment of

- Rancho Cordova Parkway to Hazel Avenue
- Prairie City Road to Oak Avenue Parkway

However, it only decreases the impacts to the Eastbound U.S. 50 freeway segments of

- Zinfandel Drive to Sunrise Boulevard
- Folsom Boulevard to Prairie City Road

And the mitigated network does not mitigate the impact to the intersection of

- Hazel Avenue / Tributary- WB U.S. 50 Ramps

3A.15.4 CUMULATIVE QUARRY TRUCK TRAFFIC

Three aggregate quarries are proposed for the area south of the SPA. The Teichert and Walltown (Granite) quarries would be located south of White Rock Road along a proposed extension of Scott Road (East), and the DeSilva Gates quarry would be located along Scott Road (West). The only study of the potential impact of these quarry operations that is currently available is the Teichert Quarry Draft Environmental Impact Report. All three quarries are expected to be in full operation by the year 2030 and the truck trips described in that DEIR were added to the cumulative traffic volumes.

Aggregate, concrete, and hot asphalt mix would be distributed to construction sites and concrete product manufacturing facilities throughout Sacramento County, western El Dorado County, eastern Yolo County and northern San Joaquin County. On a peak day, 12,660 trucks trips would be generated by the three quarries, according to the Teichert Quarry DEIR. The assumed quarry truck trip generation can be seen in Table 3A.15-43. Trucks typically operate from 6 AM to 4 PM. There would not usually be any quarry trucks operating in the PM peak hour; therefore, the analysis in this document does not include the future quarry truck traffic during the cumulative PM peak hour. The Teichert Quarry DEIR estimates that there would be 814 truck trips in the AM peak hour. Trucks from the Teichert and Granite quarries would access the roadway system by a new southern extension of Scott Road (East). De Silva Gates trucks would access the roadway network via Scott Road (West), according to the Teichert Quarry DEIR.

The Teichert Quarry DEIR assigned 47% of the truck trips through the Folsom South of U.S. 50 SPA. The distribution is shown on Exhibit 3A.15-110. Trucks travelling to U.S. 50 and to the City of Folsom were assumed to travel on Prairie City Road and Scott Road. The City of Folsom considers the proposed number of daily quarry truck trips on this Specific Plan roadways to be in excess of an acceptable number due to potential air quality and noise impacts. The City wants to minimize the number of quarry truck trips on roads inside or adjacent to the proposed SPA because of their potential impacts to pavement, air quality and noise, as well as being considered to be incompatible with its dense smart-growth urban character.

Table 3A.15-43
Estimated Trip Generation from East County Mining Applications

Time Period	Vehicle Type	Teichert		Granite		DeSilva-Gates		All		
		Enter	Exit	Enter	Exit	Enter	Exit	Enter	Exit	Total
Peak day	Aggregate/Asphalt Trucks	1,200	1,200	1,000	1,000	960	960	3,160	3,160	6,320
	Other Trucks (3 to 5 axle)	2	2	1,234	1,234	1,935	1,935	3,171	3,171	6,342
	Outside services (2 axle)	10	10	4	4	3	3	17	17	34
	Employee vehicles	60	60	175	175	50	50	285	285	570
	Total vehicles	1,272	1,272	2,413	2,413	2,948	2,948	6,633	6,633	13,266
	Total PCEs	3,676	3,676	6,881	6,881	8,738	8,738	19,295	19,295	38,590
AM Peak Hour on Peak day	Aggregate/Asphalt Trucks	156	156	52	52	50	50	258	258	516
	Other Trucks	0	0	58	58	91	91	149	149	298
	Outside services	0	0	0	0	0	0	0	0	0
	Employee vehicles	10	0	5	0	5	0	20	0	20
	Total vehicles	166	156	115	110	146	141	427	407	834
	Total PCEs	478	468	335	330	428	423	1,241	1,221	2,462

Source: Teichert Quarry Traffic Impact Study

The Proposed Project would add several new roadway facilities in the project area not included in the Teichert Quarry DEIR, some of which would act as logical routes for quarry truck traffic. In particular, the proposed Oak Avenue Parkway extension would likely accommodate some of these truck trips. A revised trip distribution was estimated, and is shown in Exhibit 3A.15-111. This distribution is not considered acceptable to the City of Folsom, but it reflects a logical distribution of truck trips. This distribution has been used in the estimation of cumulative traffic volumes in the project vicinity.

To minimize project transportation impacts to the SPA, the mitigated network was developed. One part of the mitigated network would be the construction of a quarry truck road that would extend east from Grant Line Road and travel south of the Prairie City State Vehicular Recreation Area, cross Scott Road (West) and end at the proposed Scott Road (East) extension near the Teichert and Walltown (Granite) quarries. All quarry truck traffic headed to or from Grant Line Road or White Rock Road west of Grant Line Road would likely use this proposed quarry truck road. The revised truck distribution used for the mitigated network is shown in Exhibit 3A.15-112.

3A.15.5 ALTERNATIVE QUARRY TRUCK ANALYSIS CONCLUSIONS

To quantify the potential impact of quarry truck traffic on the SPA, several alternative quarry truck scenarios were analyzed:

- Cumulative No Project, No Quarry Trucks
- Cumulative Proposed Project, No Quarry Trucks
- Cumulative Proposed Project, Assumed Quarry Truck Distribution
- Cumulative Proposed Project, Mitigated Network Quarry Truck Distribution
- Cumulative Proposed Project, “Local Trucks Only” Quarry Truck Distribution

The “Local Trucks Only” distribution reroutes all trucks going to or from U.S. 50 via White Rock Road. The “Local Trucks Only” distribution is shown in Exhibit 3A.15-113.

The results of the analyses are summarized in Tables 3A.15-44 through 3A.15-51. This analysis is presented to inform the public and decision makers regarding the potential range of effects of quarry truck trips on the roadway network in the project vicinity.

CITY OF FOLSOM

Compared to the Cumulative Proposed Project scenario (with the Assumed Quarry Truck Distribution), elimination of quarry trucks altogether would not result in any fewer intersection impacts. Similarly, allowing only local quarry trucks to use City of Folsom roads would not eliminate any impacts to intersections.

Compared to the "Cumulative Proposed Project, No Quarry Trucks" scenario, the addition of quarry trucks would cause three intersections on White Rock Road at Prairie City Road, Scott Road (West) and Scott Road (east) to degrade to LOS D conditions in the am peak hour.

SACRAMENTO COUNTY

If there were no quarry trucks, there would not be a project impact to the intersection of Grant line Road / White Rock Road. If there were no quarry trucks, there would not be project impacts to the roadway segment of Grant Line Road between Kiefer Road and Jackson Highway.. Allowing only local quarry trucks to use City of Folsom roads would not eliminate roadway segment impacts to Grant Line Road and White Rock Road.

Compared to the "Cumulative Proposed Project, No Quarry Trucks" scenario, the addition of quarry trucks would cause the segments of White Rock Road from Prairie City Road to Scott Road (East) to operate at LOS F conditions. While the segments of Grant Line Road between White Rock Road and Kiefer Boulevard would operate at LOS F conditions without quarry trucks, their addition would cause operations on this segment of Grant Line Road to degrade substantially.

CITY OF RANCHO CORDOVA

Compared to the Cumulative Proposed Project scenario (with the Assumed Quarry Truck Distribution), elimination of quarry trucks altogether would not result in fewer intersection or roadway segment impacts. Allowing only local quarry trucks to use City of Folsom roads would create one additional impact at the Grant Line Road / Centennial Road Intersection. A potential way to prevent an impact at this location under this scenario would be to build a grade separated interchange at this location instead of an at-grade intersection.

EL DORADO COUNTY

Compared to the Cumulative Proposed Project scenario (with the Proposed Quarry Truck Distribution), elimination of quarry trucks altogether would not result in fewer intersection impacts. Allowing only local quarry trucks to use City of Folsom roads would not eliminate any impacts to intersections.

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Compared to the Cumulative Proposed Project scenario (with the Proposed Quarry Truck Distribution), elimination of quarry trucks altogether would not result in any fewer intersection, freeway segment, merge / diverge or weave impacts. Allowing only local quarry trucks to use City of Folsom roads would not eliminate any impacts to intersections, freeway segments, merge / diverge or weaving areas.

INDEPENDENT QUARRY TRUCK MANAGEMENT PLAN

Currently Sacramento County, the City of Folsom, the City of Rancho Cordova, El Dorado County, Caltrans, the Capital Southeast Connector JPA and the quarry applicants are jointly working on a quarry truck management plan to address the issues associated with quarry truck traffic. The goals of that plan are as follows:

- To plan, phase, fund, and implement roadway improvements needed to accommodate the mobility needs of the east county quarries, Greencycle and the traveling public to meet the given demand.
- To consider creative transportation solutions that are sensitive to affected existing and future land uses while minimizing out of way travel.
- To promote stakeholder collaboration and cooperation.

A technical analysis for the Truck Management Plan has been prepared, which involves the following elements:

- Estimating the amount of truck traffic generated from the proposed quarries and the distribution of that traffic
- Identifying a set of potential truck access scenarios and analyzing traffic operations under each scenario
- Determining the general roadway improvements that would be needed to accommodate the estimated truck traffic
- The Truck Management Plan is not an EIR and will not determine mitigation measures for the quarries. However, that study is striving to identify the roadway improvements that will likely be needed to avoid traffic congestion and operational issues caused by quarry truck traffic.

Much of the analysis in the Truck Management Plan focused on projected 2030 conditions. The 2030 analysis assumed full implementation of the roadway system contained in the proposed Folsom SOI area and the proposed Sacramento County General Plan Update near the East County quarries, which is substantially different than the limited number of two-lane roadways that currently serve the East County area. However, the timing of future roadway improvements in the vicinity of the quarries depends on the timing of future residential and commercial development in the East County area, which is uncertain. The Truck Management Plan thus also discusses the roadway improvements that may be needed if the one or more of the quarries go forward ahead of significant residential and commercial development in the Folsom SOI area.

The Truck Management Plan identified the need for two types of near-term roadway improvements:

- Capacity improvements needed to maintain acceptable traffic levels of service
- Operational improvements, such as extra width at intersections that would be needed to provide adequate turning radius for quarry trucks

If a substantial amount of aggregate production occurs prior to significant development in the East County area, the analysis indicated the potential need for three types of near-term capacity improvements:

1) Widening the following two-lane roadways to four lanes when volumes exceed acceptable levels:
    - Scott Road from White Rock Road to U.S. 50 and/or Prairie City Road from White Rock Road to U.S. 50, depending on the selected truck routing plan
    - White Rock Road from Scott Road to Grant Line Road (or construction of an east-west truck access road parallel to White Rock Road from the quarries to Grant Line Road)

- Grant Line Road from White Rock Road and Douglas Road

2) The addition of auxiliary lanes or at least acceleration lanes on westbound U.S. 50 from Scott Road and Folsom Boulevard

3) The addition of traffic signals and turn lanes at the following intersections that would have concentrations of truck volumes:

   - White Rock Road/Scott Road (East)
   - White Rock Road/Prairie City Road and White Rock Road/Grant Line Road (or construction of an east-west truck access road parallel to White Rock Road from the quarries to Grant Line Road)
   - Grant Line Road and Jackson Highway (SR 16)

   The East County roadways serving the quarries currently have two lanes with no shoulders and in some locations have poor vertical or horizontal curves. At many intersections, there is inadequate width for trucks to turn without flowing into opposing travel lanes. The locations where near-term operational improvements would be needed include:

   - White Rock Road/Scott Road (East) – extra width for truck turning movements
   - White Rock Road/Prairie City Road – potentially extra width for truck turning movements, if Prairie City Road has significant trucks in selected truck routing plan
   - Prairie City Road and U.S. 50 – widen northbound to westbound loop on-ramp and provide westbound acceleration lane on U.S. 50, if Prairie City Road has significant trucks in selected truck routing plan

   There is uncertainty about the distribution of future truck traffic and how it may impact roadways in the vicinity of the quarry sites. It would be important to implement monitoring stations to collect real time traffic data. The best locations for these monitoring stations are as follows:

   - White Rock Road west of Grant Line Road
   - White Rock Road east of Grant Line Road
   - White Rock Road west of Scott Road (East)
   - White Rock Road east of Scott Road (East)
   - Scott Road (East) north of White Rock Road
   - Prairie City Road north of White Rock Road
   - Grant Line Road south of White Rock Road

   It would also be important to install CCTV surveillance cameras at key intersections to allow real time monitoring at the County Traffic Operations Center. The likely locations for these cameras are as follows:

   - White Rock Road/Scott Road (East)
   - White Rock Rd/Prairie City Road
   - Grant Line Rd/Potential East-West Truck Access Road

Table 3A.15-44
Intersection Levels of Service — Cumulative (2030) Conditions – City of Folsom – Quarry Truck Influence

Intersection	Control	No Project – No Quarry Trucks				Proposed Project – No Quarry Trucks				Proposed Project – Assumed Quarry Truck Distribution				Proposed Project With Mitigated Network Quarry Truck Distribution				Proposed Project – "Local Only" Quarry Truck Distribution			
		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
		Delay[1]	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Folsom Blvd / Blue Ravine Road	Signalized	**48.8**	**D**	**64.0**	**E**	**48.8**	**D**	**64.4**	**E**	**49.5**	**D**	**64.4**	**E**	**50.1**	**D**	**63.7**	**E**	**50.1**	**D**	**63.7**	**E**
2. Sibley Street / Blue Ravine Road	Signalized	**44.0**	**D**	30.3	C	**50.3**	**D**	30.1	C	**55.0**	**D**	30.1	C	**36.0**	**D**	29.3	C	**36.0**	**D**	29.3	C
3. Oak Avenue Parkway / Blue Ravine Road	Signalized	**35.1**	**D**	**37.2**	**D**	**35.9**	**D**	**37.7**	**D**	**35.9**	**D**	**37.7**	**D**	**35.8**	**D**	**37.5**	**D**	**35.8**	**D**	**37.5**	**D**
4. Empire Ranch Road / Natoma Street	Signalized	10.2	B	8.8	A	24.9	C	9.3	A	24.9	C	9.3	A	24.2	C	9.0	A	24.2	C	9.0	A
5. Oak Avenue Parkway / Riley Street	Signalized	19.7	B	24.7	C	19.6	B	24.8	C	19.6	B	24.8	C	19.8	B	25.2	C	19.8	B	25.2	C
6. Oak Avenue Parkway / East Bidwell Street	Signalized	30.1	C	**40.8**	**D**	31.8	C	**48.6**	**D**	32.2	C	**48.6**	**D**	32.3	C	**48.2**	**D**	32.3	C	**48.2**	**D**
7. Nesmith Court / East Bidwell Street	Signalized	23.6	C	**54.8**	**D**	24.7	C	**62.6**	**E**	24.7	C	**62.6**	**E**	24.4	C	28.2	C	24.4	C	28.2	C
8. Scholar Way / East Bidwell Street	Signalized	12.7	B	14.3	B	12.5	B	16.2	B	12.4	B	16.2	B	12.4	B	16.7	B	12.4	B	16.7	B
9. Power Center Drive / East Bidwell Street	Signalized	8.1	A	18.8	B	7.1	A	17.7	B	7.0	A	17.7	B	7.1	A	18.3	B	7.1	A	18.3	B
10. Broadstone Parkway / East Bidwell Street	Signalized	26.9	C	31.5	C	28.0	C	33.1	C	28.2	C	33.1	C	27.8	C	32.9	C	27.8	C	32.9	C
11. Empire Ranch Road / Broadstone Parkway	Signalized	20.1	C	21.7	C	19.9	B	24.4	C	19.9	B	24.4	C	19.7	B	24.2	C	19.7	B	24.2	C
12. Oak Avenue Parkway / Haverhill Drive	Signalized	16.7	B	9.7	A	15.0	B	8.8	A	15.0	B	8.8	A	15.0	B	8.7	A	15.0	B	8.7	A
13. Oak Avenue Parkway / Halidon Way	Signalized	13.9	B	11.5	B	14.6	B	12.9	B	14.6	B	12.9	B	14.6	B	13.0	B	14.6	B	13.0	B
14. Folsom Blvd / Iron Point Road	Signalized	21.1	C	26.3	C	20.3	C	30.3	C	20.3	C	30.3	C	19.4	B	29.2	C	19.4	B	29.2	C
15. Prairie City Road / Iron Point Road	Signalized	24.9	C	32.3	C	25.1	C	30.6	C	24.9	C	30.6	C	24.9	C	30.4	C	24.9	C	30.4	C
16. Grover Road / Iron Point Road	Signalized	19.6	B	11.5	B	18.8	B	11.2	B	18.8	B	11.2	B	18.9	B	11.9	B	18.9	B	11.9	B
17. McAdoo Drive / Iron Point Road	Signalized	22.3	C	15.1	B	20.8	C	16.7	B	20.8	C	16.7	B	20.9	C	16.9	B	20.9	C	16.9	B
18. Oak Avenue Parkway / Iron Point Road	Signalized	31.4	C	**44.0**	**D**	32.6	C	**40.4**	**D**	32.6	C	**40.4**	**D**	32.5	C	**39.9**	**D**	32.5	C	**39.9**	**D**
19. Rowberry Drive / Iron Point Road	Signalized	10.0	A	9.7	A	27.1	C	32.0	C	27.1	C	32.0	C	27.1	C	32.0	C	27.1	C	32.0	C
20. Broadstone Parkway / Iron Point Road	Signalized	18.1	B	20.4	C	18.2	B	20.2	C	18.2	B	20.2	C	18.5	B	20.2	C	18.5	B	20.2	C
21. East Bidwell Street / Iron Point Road	Signalized	26.7	C	**60.6**	**E**	29.7	C	**77.0**	**E**	29.7	C	**77.0**	**E**	29.4	C	**81.8**	**F**	29.4	C	**81.8**	**F**
22. Cavitt Road / Iron Point Road	Signalized	14.8	B	21.5	C	12.9	B	21.6	C	12.9	B	21.6	C	12.9	B	21.5	C	12.9	B	21.5	C
23. Serpa Way / Iron Point Road	Signalized	24.2	C	**39.2**	**D**	24.3	C	**43.7**	**D**	24.3	C	**43.7**	**D**	25.8	C	**51.0**	**D**	25.8	C	**51.0**	**D**
24. Empire Ranch Road / Iron Point Road	Signalized	**80.5**	**F**	**60.7**	**E**	**82.2**	**F**	**79.9**	**E**	**82.2**	**F**	**79.9**	**E**	**46.9**	**D**	**50.6**	**D**	**46.9**	**D**	**50.6**	**D**
25. Prairie City Road / High School	Signalized	34.8	C	24.3	C	34.8	C	25.8	C	34.8	C	25.8	C	34.3	C	25.3	C	34.3	C	25.3	C
26. East Bidwell Street / Placerville Road	Signalized	**446.2**	**F**	**1,328**	**F**	**145.3**	**F**	**965.6**	**F**	**145.3**	**F**	**965.6**	**F**	**136.1**	**F**	**995.9**	**F**	**136.1**	**F**	**995.9**	**F**
27. Prairie City Road / White Rock Road	Signalized	19.1	B	26.4	C	21.5	C	24.8	C	**40.6**	**D**	24.8	C	34.2	C	**74.0**	**E**	28.1	C	**74.0**	**E**
28. Scott Road (West) / White Rock Road	Signalized	10.4	B	9.8	A	14.0	B	10.2	B	**36.0**	**D**	10.2	B	13.1	B	8.9	A	11.6	B	8.9	A
29. Scott Road (East) / White Rock Road	Signalized	21.4	C	27.2	C	18.9	B	22.1	C	**35.6**	**D**	22.1	C	28.0	C	22.1	C	25.2	C	22.1	C
30. Placerville Road / White Rock Road	Side-street stop[2]	0.0	A	21.4	C	11.8	B	9.7	A	11.7	B	9.7	A	12.7	B	10.5	B	12.6	B	10.5	B
31. Empire Ranch Road / North Road	Signalized	NA	NA	NA	NA	10.6	B	18.3	B	10.6	B	18.3	B	10.7	B	18.0	B	10.7	B	18.0	B
32. Prairie City Road / Easton Valley Parkway	Signalized	14.4	B	18.5	B	32.2	C	32.6	C	32.1	C	32.6	C	31.9	C	34.3	C	31.7	C	34.3	C
33. Oak Avenue Parkway / Easton Valley Parkway	Signalized	NA	NA	NA	NA	**38.7**	**D**	30.3	C	**37.3**	**D**	30.3	C	30.3	C	28.0	C	29.4	C	28.0	C

Table 3A.15-44
Intersection Levels of Service — Cumulative (2030) Conditions – City of Folsom – Quarry Truck Influence

Intersection	Control	No Project – No Quarry Trucks				Proposed Project – No Quarry Trucks				Proposed Project – Assumed Quarry Truck Distribution				Proposed Project With Mitigated Network Quarry Truck Distribution				Proposed Project – "Local Only" Quarry Truck Distribution			
		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
		Delay[1]	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
34. Rowberry Drive / Easton Valley Parkway	Signalized	NA	NA	NA	NA	21.2	C	24.7	C	21.2	C	24.7	C	21.8	C	25.3	C	21.8	C	25.3	C
35. 1st Street / Easton Valley Parkway	Signalized	NA	NA	NA	NA	18.9	B	19.2	B	18.9	B	19.2	B	19.5	B	19.2	B	19.5	B	19.2	B
36. 2nd Street / Easton Valley Parkway	Signalized	NA	NA	NA	NA	25.0	C	28.6	C	25.0	C	28.6	C	25.7	C	29.9	C	25.7	C	29.9	C
37. 3rd Street / Easton Valley Parkway	Signalized	NA	NA	NA	NA	24.6	C	26.2	C	24.6	C	26.2	C	24.1	C	26.8	C	24.1	C	26.8	C
38. Scott Road (East) / Easton Valley Parkway	Signalized	NA	NA	NA	NA	30.7	C	**41.2**	**D**	31.2	C	**41.2**	**D**	30.8	C	**41.5**	**D**	30.5	C	**41.5**	**D**
39. Placerville Road / Easton Valley Parkway	Signalized	NA	NA	NA	NA	31.4	C	31.0	C	31.4	C	31.0	C	0.8	A	0.9	A	0.8	A	0.9	A
40. 4th Street / Easton Valley Parkway	Signalized	NA	NA	NA	NA	na	na	NA	NA	NA	NA	NA	NA	31.5	C	31.2	C	31.5	C	31.2	C
41. Hillside Drive / Easton Valley Parkway	Signalized	NA	NA	NA	NA	16.1	B	16.4	B	16.1	B	16.4	B	16.2	B	17.0	B	16.2	B	17.0	B
42. Empire Ranch Road / Easton Valley Parkway	Signalized	NA	NA	NA	NA	23.5	C	27.9	C	23.5	C	27.9	C	23.7	C	27.1	C	23.7	C	27.1	C
43. Prairie City Road / Middle Road	Signalized	NA	NA	NA	NA	8.6	A	11.0	B	8.1	A	11.0	B	8.9	A	9.1	A	9.1	A	9.1	A
44. Oak Avenue Parkway / Middle Road	Signalized	NA	NA	NA	NA	19.2	B	22.3	C	16.6	B	22.3	C	16.2	B	19.6	B	18.3	B	19.6	B
45. Scott Road (East) / Street "B"	Signalized	NA	NA	NA	NA	23.3	C	26.0	C	22.0	C	26.0	C	24.1	C	27.1	C	25.0	C	27.1	C
46. East Road / Street "B"	Signalized	NA	NA	NA	NA	24.6	C	24.3	C	24.6	C	24.3	C	24.7	C	24.2	C	24.7	C	24.2	C
47. Prairie City Road / Street "A"	Signalized	NA	NA	NA	NA	8.9	A	9.6	A	8.9	A	9.6	A	9.0	A	8.6	A	8.7	A	8.6	A
48. Oak Avenue Parkway / Street "A"	Signalized	NA	NA	NA	NA	26.4	C	27.6	C	24.6	C	27.6	C	25.0	C	28.7	C	26.0	C	28.7	C
49. 2nd Street / Street "A"	Signalized	NA	NA	NA	NA	18.0	B	18.4	B	18.0	B	18.4	B	17.9	B	18.3	B	17.9	B	18.3	B
50. Scott Road (East) / Street "A"	Signalized	NA	NA	NA	NA	23.9	C	22.2	C	22.9	C	22.2	C	23.4	C	21.4	C	24.3	C	21.4	C
51. East Road / Street "A"	Signalized	NA	NA	NA	NA	9.7	A	9.8	A	9.7	A	9.8	A	9.8	A	9.8	A	9.8	A	9.8	A
52. Placerville Road / Street "A"	Signalized	NA	NA	NA	NA	25.7	C	26.5	C	25.7	C	26.5	C	25.1	C	25.8	C	25.1	C	25.8	C
53. Empire Ranch Road / Street "A"	Signalized	NA	NA	NA	NA	14.9	B	14.1	B	14.9	B	14.1	B	14.2	B	12.7	B	14.2	B	12.7	B
54. Scott Road (East) / South Road	Signalized	NA	NA	NA	NA	20.6	C	20.7	C	18.8	B	20.7	C	19.1	B	20.3	C	20.5	C	20.3	C
55. Oak Avenue Parkway / White Rock Road	Signalized	NA	NA	NA	NA	16.6	B	27.1	C	27.3	C	27.1	C	30.9	C	24.6	C	18.7	B	24.6	C
56. Empire Ranch Road / White Rock Road	Signalized	NA	NA	NA	NA	27.9	C	17.7	B	28.9	C	17.7	B	32.4	C	28.4	C	34.3	C	28.4	C

Notes: LOS = level of service; U.S. 50 = U.S. Highway 50; V/C = volume-to-capacity; Blank = intersection does not exist under this alternative
[1] Average intersection delay reported for all-way-stop intersections; worst-case delay reported for unsignalized, side-street-stop intersections; average intersection delay reported for all-way-stop intersections. All delays are reported in seconds per vehicle.
Intersection signalized with the proposed project.
Bold indicates deficiency.
Source: Data provided by DKS Associates in 2009

Table 3A.15-45
Roadway Segment Levels of Service — Cumulative (2030) Conditions - Sacramento County – Quarry Truck Influence

Roadway Segment	Lanes	No Project – No Quarry Trucks			Proposed Project – No Quarry Trucks			Proposed Project – Assumed Quarry Truck Distribution			Proposed Project With Mitigated Network Quarry Truck Distribution			Proposed Project – "Local Only" Quarry Truck Distribution		
		Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS
1. Folsom Blvd — Sunrise Blvd to Mercantile Drive	4	31,900	0.89	D	32,000	0.89	D	32,000	0.89	D	31,700	0.88	D	31,700	0.88	D
2. Folsom Blvd — Mercantile Drive to Hazel Avenue	4	22,700	0.63	B	23,200	0.64	B	23,200	0.64	B	22,700	0.63	B	22,700	0.63	B
3. Folsom Blvd — Hazel Avenue to Aerojet Road	4	8,000	0.22	A	8,900	0.25	A	8,900	0.25	A	8,500	0.24	A	8,500	0.24	A
4. Folsom Blvd — Aerojet Road to U.S. 50	4	26,300	0.73	C	25,400	0.71	C	25,400	0.71	C	25,400	0.71	C	25,400	0.71	C
5. Grant Line Road—White Rock Road to Century Road	4	40,700	**1.02**	**F**	48,100	**1.20**	**F**	65,100	**1.63**	**F**	60,200	**1.00**	**F**	62,500	**1.04**	**F**
6. Grant Line Road— Century Road to Douglas Road	4	38,500	0.96	E	45,100	**1.13**	**F**	62,000	**1.55**	**F**	71,500	**1.19**	**F**	71,500	**1.19**	**F**
7. Grant Line Road—Douglas Road to Kiefer Road	4	40,000	**1.11**	**F**	43,900	**1.22**	**F**	60,800	**1.69**	**F**	70,100	**1.17**	**F**	70,100	**1.17**	**F**
8. Grant Line Road— Kiefer Road to SR Jackson Road (SR16)	4	20,600	0.57	A	22,500	0.63	B	39,500	**1.10**	**F**	43,300	0.72	C	43,300	0.72	C
9. Grant Line Road — Jackson Road (SR16) to Sunrise Blvd	4	24,100	0.67	B	25,800	0.72	C	38,600	**1.07**	**F**	40,900	**1.02**	**F**	40,900	**1.02**	**F**
10. Hazel Avenue — Greenback Lane to Madison Avenue	6	56,300	**1.04**	**F**	56,800	**1.05**	**F**	56,800	**1.05**	**F**	57,000	**1.06**	**F**	57,000	**1.06**	**F**
11. Hazel Avenue — Madison Avenue to Curragh Downs Drive	6	76,700	**1.42**	**F**	78,900	**1.46**	**F**	78,900	**1.46**	**F**	79,000	**1.46**	**F**	79,000	**1.46**	**F**
12. Hazel Avenue — Curragh Downs Drive to Gold Country Blvd[1]	6	88,000	**1.47**	**F**	91,300	**1.52**	**F**	91,300	**1.52**	**F**	91,400	**1.52**	**F**	91,400	**1.52**	**F**
13. Hazel Avenue — Gold Country Blvd to U.S. 50 westbound ramp	6	91,100	**1.52**	**F**	94,800	**1.58**	**F**	94,800	**1.58**	**F**	94,900	**1.58**	**F**	94,900	**1.58**	**F**
14. Jackson Road (SR-16) — Grant Line Road to Dillard Road	2	13,000	0.57	D	12,700	0.55	D	12,900	0.56	D	12,800	0.56	D	12,800	0.56	D
15. Jackson Road (SR-16) — Dillard Road to Rancho Murieta Parkway	2	16,200	**0.71**	**E**	16,300	**0.71**	**E**	16,500	0.72	E	15,900	0.69	E	15,900	**0.69**	**E**
16. Prairie City Road —U.S. 50 eastbound ramp to Easton Valley Parkway	4 - 6	28,900	0.80	D	33,400	0.62	B	39,500	0.73	C	41,200	0.76	C	36,900	0.68	B
17. Prairie City Road —Easton Valley Parkway to White Rock Road	2 - 4	18,300	**1.02**	**F**	31,100	0.86	D	37,200	**1.03**	**F**	40,600	**1.13**	**F**	36,200	**1.01**	**F**
18. Scott Road (West) — White Rock Road to Latrobe Road	2	3,800	0.17	B	5,700	0.25	C	5,700	0.34	C	5,100	0.30	C	6,900	0.30	C
19. Stonehouse Road — Latrobe Road to Jackson Road (SR-16)	2	5,600	0.24	C	7,200	0.31	C	7,400	0.32	C	6,900	0.30	C	6,900	0.30	C
20. Sunrise Blvd — Jackson Road (SR 16) to Grant Line Road	6	22,300	0.62	B	22,500	0.63	B	22,500	0.63	B	22,800	0.63	B	22,800	0.63	B
21. White Rock Road— Ranch Cordova City Limit to Grant Line Road	4	13,600	0.38	A	17,700	0.49	A	19,900	0.55	A	23,500	0.65	B	34,900	0.97	E
22. White Rock Road—Grant Line Road to Prairie City Road	**4**	55,100	**1.38**	**F**	66,700	**1.67**	**F**	85,800	**2.15**	**F**	80,200	**1.34**	**F**	80,200	**1.34**	**F**
23. White Rock Road— Prairie City Road to Scott Road (West)	4 - 5	41,100	**1.03**	**F**	44,500	0.89	D	69,800	**1.40**	**F**	59,800	1.00	E	55,500	**0.93**	**E**
24. White Rock Road— Scott Road (West) to Oak Avenue Parkway	4 - 5	41,900	**1.05**	**F**	46,800	**0.94**	**E**	56,500	**1.13**	**F**	56,600	0.94	E	56,600	**0.94**	**E**
25. White Rock Road— Oak Avenue Parkway to Scott Road (East)	4 - 5	41,900	**1.05**	**F**	44,000	0.88	D	59,800	**1.20**	**F**	58,200	0.97	E	52,100	0.87	D
26. White Rock Road— Scott Road (East) to Placerville Road	4 - 5	28,400	0.71	C	29,200	0.58	A	30,300	0.61	B	37,300	0.62	B	40,700	0.68	B
27. White Rock Road— Placerville Road to Empire Ranch Road	4 - 5	33,400	0.84	D	36,900	0.74	C	38,000	0.76	C	46,900	0.78	C	50,300	0.84	D
28. White Rock Road— Empire Ranch Road to Carson Crossing Road	4 - 5	33,400	0.84	D	48,200	**0.96**	**E**	49,300	0.99	E	24,500	0.41	A	27,800	0.46	A
29. Hazel Avenue — Folsom Blvd connector to Easton Valley Parkway	6	17,600	0.33	A	19,000	0.35	A	19,000	0.35	A	18,800	0.35	A	18,800	0.35	A
30. Easton Valley Parkway — Hazel Avenue to Aerojet Road	6	31,300	0.58	A	34,200	0.63	B	34,200	0.63	B	33,500	0.62	B	33,500	0.62	B
31. Easton Valley Parkway — Aerojet Road to Alabama Avenue	6	19,600	0.36	A	27,300	0.51	A	27,300	0.51	A	26,800	0.50	A	26,800	0.50	A
32. Easton Valley Parkway — Alabama Avenue to Glenborough Road	6	15,400	0.29	A	23,700	0.44	A	23,700	0.44	A	23,000	0.43	A	23,000	0.43	A
33. Easton Valley Parkway — Glenborough Road to Prairie City Road	6	16,700	0.31	A	28,000	0.52	A	28,000	0.52	A	27,700	0.51	A	27,700	0.51	A
34. Empire Ranch Road — White Rock Road to Carson Crossing Road	0 – 0 - 4	NA	NA	NA	NA	NA	NA	NA	NA	NA	40,000	**1.00**	**F**	40,000	**1.00**	**F**

Notes: LOS = level of service; SR = State Route; U.S. 50 = U.S. Highway 50; V/C = volume-to-capacity
Lanes: Cumulative No Project – Cumulative Plus Project (or alternative)
Bold indicates deficiency.
Source: Data provided by DKS Associates in 2009

Table 3A.15-46
Intersection Levels of Service — Cumulative (2030) Conditions – City of Rancho Cordova – Quarry Truck Influence

Intersection	Control	No Project – No Quarry Trucks				Proposed Project – No Quarry Trucks				Proposed Project – Assumed Quarry Truck Distribution				Proposed Project With Mitigated Network Quarry Truck Distribution				Proposed Project – "Local Only" Quarry Truck Distribution			
		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
		V/C[1] or Delay[2]	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS
1. Sunrise Blvd / White Rock Road	Signalized	0.61	B	0.68	B	0.65	B	0.67	B	0.67	B	0.67	B	0.72	C	0.71	C	0.81	D	0.71	C
2. Fitzgerald Road / White Rock Road	Signalized	0.30	A	0.34	A	0.29	A	0.33	A	0.31	A	0.33	A	0.34	A	0.37	A	0.42	A	0.37	A
3. Sunrise Blvd / Douglas Road	Signalized	0.65	B	0.81	D	0.71	C	0.80	C	0.71	C	0.80	C	0.71	C	0.85	D	0.71	C	0.85	D
4. Grant Line Road / Douglas Road	Signalized	0.56	A	0.61	B	0.59	A	0.64	B	0.76	C	0.64	B	0.78	C	0.73	C	0.78	C	0.73	C
5. Grant Line Road / Kiefer Road	Signalized	0.68	B	0.63	B	0.70	B	0.65	B	0.86	D	0.65	B	0.89	D	0.69	B	0.89	D	0.69	B
6. Rancho Cordova Parkway / Easton Valley Parkway	Signalized	0.72	C	**0.99**	**E**	0.70	C	**0.96**	**E**	0.70	C	**0.96**	**E**	0.71	C	**1.00**	**E**	0.71	C	**1.00**	**E**
7. Rancho Cordova Parkway / White Rock Road	Signalized	**0.99**	**E**	0.87	D	**1.00**	**E**	0.87	D	**1.02**	**F**	0.87	D	**1.12**	**F**	**0.92**	**E**	**1.20**	**F**	**0.92**	**E**
8. International Drive / White Rock Road	Signalized	0.42	A	0.66	B	0.41	A	0.70	B	0.44	A	0.70	B	0.48	A	0.77	C	0.60	A	0.77	C
9. Rio Del Oro Parkway / White Rock Road	Signalized	0.49	A	0.36	A	0.51	A	0.37	A	0.54	A	0.37	A	0.63	B	0.47	A	0.75	C	0.47	A
10. Villagio Parkway / White Rock Road	Signalized	0.32	A	0.44	A	0.37	A	0.53	A	0.41	A	0.53	A	0.51	A	0.71	C	0.63	B	0.71	C
11. Sunrise Blvd /International Drive	Signalized	0.74	C	0.72	C	0.75	C	0.69	B	0.75	C	0.69	B	0.82	D	0.75	C	0.82	D	0.75	C
12. Villagio Parkway / Americanos Road	Signalized	0.58	A	0.56	A	0.58	A	0.63	B	0.58	A	0.63	B	0.63	B	0.65	B	0.63	B	0.65	B
13. Grant Line Road / Centennial Road	Signalized	0.68	B	0.67	B	0.73	C	0.74	C	0.89	D	0.74	C	0.90	D	0.80	C	**0.98**	**E**	0.80	C
14. Villagio Parkway / Rancho Cordova Parkway	Signalized	0.65	C	0.54	C	0.68	C	0.53	C	0.68	C	0.53	C	0.65	C	0.55	C	0.65	C	0.55	C
15. Rancho Cordova Parkway / Douglas Road	Signalized	0.49	A	0.77	C	0.50	A	0.76	C	0.50	A	0.76	C	0.54	A	0.84	D	0.54	A	0.84	D
16. Americanos Blvd / Douglas Road	Signalized	0.59	A	0.78	C	0.49	C	0.68	C	0.49	C	0.68	C	0.47	C	0.65	C	0.47	C	0.65	C
17. Grant Line Road / Chrysanthy Blvd	Signalized	0.71	C	0.64	B	0.73	C	0.65	B	0.90	D	0.65	B	0.79	C	0.69	B	0.79	C	0.69	B
18. Grant Line Road / Rancho Cordova Parkway	Signalized	0.37	A	0.39	A	0.39	A	0.41	A	0.55	A	0.41	A	0.72	C	0.52	A	0.72	C	0.52	A

Notes: LOS = level of service; V/C = volume-to-capacity
[1] V/C ratio is shown for signalized intersections. Delay is shown for unsignalized intersections.
[2] Worst-case delay reported for unsignalized, side-street-stop intersections; average intersection delay reported for all-way-stop intersections. Both delays are reported in seconds per vehicle.
Bold indicates deficiency.
Source: Data provided by DKS Associates in 2009

Table 3A.15-47
Roadway Segment Levels of Service — Cumulative (2030) Conditions - City of Rancho Cordova – Quarry Truck Influence

Roadway Segment	Lanes	No Project – No Quarry Trucks			Proposed Project – No Quarry Trucks			Proposed Project – Assumed Quarry Truck Distribution			Proposed Project With Mitigated Network Quarry Truck Distribution			Proposed Project – "Local Only" Quarry Truck Distribution		
		Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS
1. Douglas Road—Sunrise Blvd to Villagio Parkway	6	30,100	0.56	A	29,700	0.55	A	29,700	0.55	A	29,400	0.54	A	29,400	0.54	A
2. Douglas Road— Villagio Parkway to Rancho Cordova Parkway	6	25,200	0.47	A	24,400	0.45	A	24,400	0.45	A	24,200	0.45	A	24,200	0.45	A
3. Douglas Road— Rancho Cordova Parkway to Americanos Road	6	13,900	0.26	A	13,300	0.25	A	13,300	0.25	A	13,900	0.26	A	13,900	0.26	A
4. Douglas Road— Americanos Road to Grant Line Road	6	15,300	0.28	A	15,200	0.28	A	15,200	0.28	A	17,600	0.33	A	17,600	0.33	A
5. Sunrise Blvd—U.S. 50 eastbound ramps to Folsom Blvd	8	79,300	**1.10**	**F**	79,200	**1.10**	**F**	79,200	**1.10**	**F**	78,700	**1.09**	**F**	78,700	**1.09**	**F**
6. Sunrise Blvd—Folsom Blvd to White Rock Road	6	49,900	**0.92**	**E**	49,400	**0.91**	**E**	49,400	**0.91**	**E**	48,600	0.90	**E**	48,600	**0.90**	**E**
7. Sunrise Blvd—White Rock Road to Douglas Road	6	34,200	0.63	B	33,500	0.62	B	33,500	0.62	B	33,100	0.61	B	33,100	0.61	B
8. Sunrise Blvd—Douglas Road to Keifer Boulevard	6	35,500	0.66	B	35,600	0.66	B	35,600	0.66	B	34,800	0.64	B	34,800	0.64	B
9. Sunrise Boulevard—Keifer Boulevard to Jackson Road SR 16	6	23,100	0.43	A	23,200	0.43	A	23,200	0.43	A	22,300	0.41	A	22,300	0.41	A
10. White Rock Road—Zinfandel Drive to Sunrise Blvd	4	7,200	0.13	A	7,100	0.13	A	9,300	0.17	A	9,800	0.18	A	21,100	0.39	A
11. White Rock Road— Sunrise Blvd to Rancho Cordova Parkway	6	34,600	0.64	B	34,000	0.63	B	36,200	0.67	B	37,200	0.69	B	48,500	0.90	D
12. White Rock Road— Rancho Cordova Parkway to International Drive	6	11,700	0.33	A	11,300	0.31	A	13,500	0.38	A	14,000	0.39	A	25,400	0.71	C
13. White Rock Road— International Drive to Rio Del Oro Parkway	6	10,200	0.28	A	11,500	0.32	A	13,700	0.38	A	15,500	0.43	A	26,800	0.74	C
14. White Rock Road— Rio Del Oro Parkway to Villagio Parkway	4	8,000	0.22	A	10,000	0.28	A	12,200	0.34	A	15,000	0.42	A	26,400	0.73	C
15. White Rock Road— Villagio Parkway to Grant Line Road	4	13,600	0.38	A	17,700	0.49	A	19,900	0.55	A	23,500	0.65	B	34,900	**0.97**	**E**
16. Easton Valley Parkway — Rancho Cordova Parkway to Hazel Avenue	6	39,000	0.72	C	38,800	0.72	C	38,800	0.72	C	54,000	0.71	C	54,000	0.71	C
17. Rancho Cordova Parkway - Easton Valley Parkway to International Drive	6	51,100	**0.95**	**E**	49,600	**0.92**	**E**	49,600	**0.92**	**E**	54,000	0.87	D	54,000	0.87	D
18. Rancho Cordova Parkway - International Drive to White Rock Road	6	41,400	0.77	C	40,800	0.76	C	40,800	0.76	C	54,000	0.72	C	54,000	0.72	C
19. International Drive. — White Rock Road to Americanos Parkway	6	17,900	0.33	A	18,900	0.35	A	18,900	0.35	A	54,000	0.35	A	54,000	0.35	A
20. International Drive. — Americanos Parkway to Rancho Cordova Parkway	6	33,600	0.62	B	34,000	0.63	B	34,000	0.63	B	54,000	0.64	B	54,000	0.64	B
21. International Drive. — Rancho Cordova Parkway to Sunrise Boulevard	6	31,700	0.59	A	31,700	0.59	A	31,700	0.59	A	54,000	0.59	A	54,000	0.59	A
22. Villagio Parkway — White Rock Road to Americanos Parkway	2	5,700	0.32	A	7,800	0.43	A	7,800	0.43	A	18,000	0.46	A	18,000	0.46	A
23. Villagio Parkway — Americanos Parkway to Rancho Cordova Parkway	2	10,700	0.59	A	11,900	0.66	B	11,900	0.66	B	18,000	0.68	B	18,000	0.68	B
24. Villagio Parkway — Rancho Cordova Parkway to Douglas Road	2	12,200	0.68	B	13,000	0.72	C	13,000	0.72	C	18,000	0.73	C	18,000	0.73	C

Notes: LOS = level of service; SR = State Route; U.S. 50 = U.S. Highway 50; V/C = volume-to-capacity
[1] Not expected to be a through roadway for baseline conditions.
[2] Assumed to have high access control.
Bold indicates deficiency.
Source: Data provided by DKS Associates in 2009

Table 3A.15-48
Intersection Levels of Service — Cumulative (2030) Conditions – El Dorado County – Quarry Truck Influence

Intersection	Control	No Project – No Quarry Trucks				Proposed Project – No Quarry Trucks				Proposed Project – Assumed Quarry Truck Distribution				Proposed Project With Mitigated Network Quarry Truck Distribution				Proposed Project – "Local Only" Quarry Truck Distribution			
		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
		Delay[1]	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. White Rock Road / Carson Crossing Road	Signalized	27.9	C	22.6	C	**103.7**	**F**	35.1	D	**100.8**	**F**	35.1	D	5.5	A	8.5	A	5.4	A	5.4	A
2. White Rock Road / Stonebriar Drive	Signalized	16.4	B	11.2	B	16.1	B	10.4	B	15.1	B	10.4	B	12.7	B	9.4	A	12.3	B	12.3	B
3. White Rock Road / Windfield Way	Signalized	24.0	C	29.6	C	24.9	C	31.3	C	24.5	C	31.3	C	24.6	C	49.0	D	25.0	C	25.0	C
4. White Rock Road / Latrobe Road	Signalized	37.7	D	32.0	C	36.3	D	29.9	C	37.4	D	29.9	C	40.8	D	33.5	C	43.5	D	43.5	D
5. White Rock Road / Valley View Parkway	Signalized	32.6	C	**81.1**	**F**	39.8	D	65.5	E	42.6	D	65.5	E	46.3	D	61.8	E	52.5	D	52.5	D
6. El Dorado Hills Blvd / Serrano Parkway	Signalized	48.2	D	25.6	C	35.9	D	26.2	C	35.9	D	26.2	C	38.6	D	27.6	C	38.6	D	38.6	D
7. El Dorado Hills Blvd / Saratoga Way	Signalized	42.5	D	40.2	D	30.5	C	43.5	D	30.5	C	43.5	D	30.0	C	44.4	D	30.0	C	30.0	C
8. El Dorado Hills Blvd / Park Drive	Signalized	30.7	C	29.5	C	24.7	C	27.2	C	24.7	C	27.2	C	24.4	C	26.8	C	24.4	C	24.4	C
9. Latrobe Road / Town Center Boulevard	Signalized	35.0	D	**95.5**	**F**	34.0	C	77.5	E	34.0	C	77.5	E	33.5	C	**80.7**	**F**	33.5	C	33.5	C

Notes: LOS = level of service; **Bold** indicates deficiency.
Source: Data provided by DKS Associates in 2009

Table 3A.15-49
Intersection Levels of Service — Cumulative (2030) Conditions – Caltrans – Quarry Truck Influence

Intersection	Control	No Project – No Quarry Trucks				Proposed Project – No Quarry Trucks				Proposed Project – Assumed Quarry Truck Distribution				Proposed Project With Mitigated Network Quarry Truck Distribution				Proposed Project – "Local Only" Quarry Truck Distribution			
		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Hazel Avenue / Tributary - WB U.S. 50 ramps	Signalized	28.7	C	**94.1**	**F**	44.0	D	**102.3**	**F**	44.0	D	**102.3**	**F**	46.3	D	**102.8**	**F**	46.3	D	**102.8**	**F**
2. Hazel Avenue / EB U.S. 50 ramps	Signalized	43.8	D	**152.4**	**F**	36.5	D	**147.3**	**F**	36.5	D	**147.3**	**F**	37.0	D	**147.7**	**F**	37.0	D	**147.7**	**F**
3. Folsom Blvd / WB U.S. 50 ramps	Signalized	8.4	A	13.3	B	6.3	A	10.7	B	6.3	A	10.7	B	6.7	A	10.7	B	6.7	A	10.7	B
4. Folsom Blvd / EB U.S. 50 ramps	Signalized	30.5	C	39.1	D	26.8	C	29.8	C	26.8	C	29.8	C	26.8	C	30.2	C	26.8	C	30.2	C
5. Prairie City Road / WB U.S. 50 ramps	Signalized	28.8	C	30.2	C	34.8	C	12.9	B	37.2	D	12.9	B	42.6	D	12.7	B	42.6	D	12.7	B
6. Prairie City Road / EB U.S. 50 ramps	Signalized	22.4	C	15.9	B	20.0	B	13.3	B	21.2	C	13.3	B	20.5	C	12.2	B	19.3	B	12.2	B
7. East Bidwell Street / WB U.S. 50 ramps	Signalized	19.2	B	22.7	C	25.0	C	22.5	C	28.1	C	22.5	C	28.6	C	23.1	C	25.4	C	23.1	C
8. East Bidwell Street / EB U.S. 50 ramps	Signalized	20.1	C	23.6	C	17.1	B	20.7	C	17.1	B	20.7	C	16.6	B	20.1	C	16.6	B	20.1	C
9. El Dorado Hills Blvd / WB U.S. 50 ramps	Signalized	30.7	C	29.5	C	24.7	C	27.2	C	24.7	C	27.2	C	24.4	C	26.8	C	24.4	C	26.8	C
10. El Dorado Hills Blvd / EB U.S. 50 ramps	Signalized	4.4	A	5.0	A	3.8	A	4.2	A	3.8	A	4.2	A	3.8	A	3.7	A	3.8	A	3.7	A
11. Sunrise Blvd / Jackson Highway SR 16	Signalized	29.4	C	29.9	C	29.2	C	30.3	C	29.2	C	30.3	C	28.5	C	31.2	C	28.5	C	31.2	C
12. Grantline Road / Jackson Highway SR 16	Signalized	25.7	C	26.3	C	24.2	C	26.2	C	24.2	C	26.2	C	24.8	C	25.4	C	24.8	C	25.4	C
13. Oak Avenue Parkway / WB U.S. 50 ramps	Signalized	NA	NA	NA	NA	17.3	B	11.7	B	17.9	B	11.7	B	17.9	B	12.0	B	17.3	B	12.0	B
14. Oak Avenue Parkway / EB U.S. 50 ramps	Signalized	NA	NA	NA	NA	26.3	C	27.4	C	27.3	C	27.4	C	26.0	C	27.4	C	25.1	C	27.4	C
15. Empire Ranch Road / WB U.S. 50 ramps	Signalized	NA	NA	NA	NA	14.7	B	15.8	B	14.7	B	15.8	B	14.8	B	15.6	B	14.8	B	15.6	B
16. Empire Ranch Road / EB U.S. 50 ramps	Signalized	NA	NA	NA	NA	15.8	B	19.2	B	15.8	B	19.2	B	15.9	B	20.0	B	15.9	B	20.0	B
17. Silva Valley Road / WB U.S. 50 ramps	Signalized	33.7	C	25.5	C	33.6	C	25.3	C	39.5	D	25.3	C	36.5	D	29.7	C	49.4	D	29.7	C
18. Silva Valley Road / EB U.S. 50 ramps	Signalized	4.9	A	19.3	B	8.0	A	23.3	C	8.1	A	23.3	C	7.4	A	22.6	C	7.7	A	22.6	C

Notes: LOS = level of service; Blank = intersection does not exist under this alternative; **Bold** indicates deficiency.
Source: Data provided by DKS Associates in 2009

Table 3A.15-50
Freeway Mainline Levels of Service — Cumulative (2030) Conditions – Caltrans – Quarry Truck Influence

Freeway Segment	No Project – No Quarry Trucks				Proposed Project – No Quarry Trucks				Proposed Project – Assumed Quarry Truck Distribution				Proposed Project With Mitigated Network Quarry Truck Distribution				Proposed Project – "Local Only" Quarry Truck Distribution			
	A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
	V/C	LOS[2]	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
EASTBOUND U.S. 50																				
Zinfandel Drive to Sunrise Boulevard	**1.00**	**F**	**1.15**	**F**	**1.03**	**F**	**1.17**	**F**	**1.07**	**F**	**1.17**	**F**	**1.05**	**F**	**1.16**	**F**	**1.03**	**F**	**1.17**	**F**
Sunrise Boulevard to Rancho Cordova Parkway	0.83	D	1.02	F	0.88	D	1.05	F	0.91	E	1.05	F	0.89	D	**1.04**	**F**	0.88	D	1.05	F
Rancho Cordova Parkway to Hazel Avenue	0.99	E	**1.15**	**F**	1.04	F	**1.18**	**F**	**1.08**	**F**	**1.18**	**F**	1.04	F	**1.16**	**F**	1.04	F	**1.18**	**F**
Hazel Avenue to Folsom Boulevard	0.85	D	0.88	D	0.91	E	1.00	E	0.95	E	1.00	E	0.91	E	0.96	E	0.91	E	1.00	E
Folsom Blvd to Prairie City Road	0.86	D	**1.10**	**F**	0.95	E	**1.15**	**F**	**1.01**	**F**	**1.15**	**F**	0.96	E	**1.12**	**F**	0.95	E	**1.15**	**F**
Prairie City Road to Oak Avenue Parkway	**1.07**	**F**	**1.17**	**F**	1.17	F	**1.19**	**F**	**1.22**	**F**	**1.19**	**F**	Braided Ramps - V/C<1				Braided Ramps V/C<1			
Oak Avenue Parkway to East Bidwell Street - Scott Road	0.77	D	0.96	E	0.82	D	0.98	E	0.83	D	0.98	E	0.80	D	0.95	E	0.82	D	0.98	E
East Bidwell Street - Scott Road to Empire Ranch Road	0.75	D	1.00	E	0.83	D	**1.05**	**F**	0.86	D	**1.05**	**F**	0.79	D	**1.01**	**F**	0.83	D	1.05	F
Empire Ranch Road to El Dorado Hills Boulevard – Latrobe Road	0.69	C	0.87	D	0.71	C	0.89	D	0.72	C	0.89	D	0.67	C	0.84	D	0.71	C	0.89	D
El Dorado Hills Boulevard – Latrobe Road to Silva Valley Road	0.59	C	0.79	D	0.62	C	0.82	D	0.64	C	0.82	D	0.62	C	0.81	D	0.62	C	0.82	D
Silva Valley Road to Bass Lake Road	0.78	D	0.95	E	0.80	D	0.97	E	0.84	D	0.97	E	0.84	D	0.97	E	0.84	D	0.97	E
WESTBOUND U.S. 50																				
Bass Lake Road to Silva Valley Road	0.91	E	0.70	C	0.92	E	0.70	C	0.96	E	0.70	C	0.97	E	0.70	C	0.92	E	0.70	C
Silva Valley Road to El Dorado Hills Boulevard – Latrobe Road	0.89	D	0.63	C	0.87	D	0.61	C	0.89	D	0.61	C	0.89	D	0.60	C	0.87	D	0.61	C
El Dorado Hills Boulevard – Latrobe Road to Empire Ranch Road	**1.06**	**F**	0.84	D	1.03	F	0.82	D	**1.06**	**F**	0.82	D	**1.05**	**F**	0.80	D	**1.03**	**F**	0.82	D
Empire Ranch Road to East Bidwell Street - Scott Road	0.84	D	0.65	C	0.96	E	0.80	D	0.98	E	0.80	D	0.98	E	0.78	D	0.96	E	0.80	D
East Bidwell Street - Scott Road to Oak Avenue Parkway	0.71	C	0.58	C	0.78	D	0.75	D	0.79	D	0.75	D	0.78	D	0.74	C	0.78	D	0.75	D
Oak Avenue Parkway to Prairie City Road	**1.13**	**F**	**1.02**	**F**	**1.08**	**F**	**1.02**	**F**	**1.13**	**F**	**1.02**	**F**	**1.13**	**F**	**1.00**	**F**	**1.08**	**F**	**1.02**	**F**
Prairie City Road to Folsom Blvd	0.88	D	0.88	D	0.93	E	0.95	E	0.98	E	0.95	E	0.98	E	0.90	E	0.93	E	0.95	E
Folsom Boulevard to Hazel Avenue	0.88	D	0.82	D	0.92	E	0.89	D	0.97	E	0.89	D	0.96	E	0.85	D	0.92	E	0.89	D
Hazel Avenue to Rancho Cordova Parkway	**1.01**	**F**	**1.08**	**F**	1.03	F	1.11	F	**1.07**	**F**	**1.11**	**F**	**1.06**	**F**	**1.07**	**F**	**1.03**	**F**	**1.11**	**F**
Rancho Cordova Parkway to Sunrise Bouelvard	0.97	E	**1.04**	**F**	0.99	E	1.08	F	**1.03**	**F**	**1.08**	**F**	**1.03**	**F**	**1.06**	**F**	0.99	E	**1.08**	**F**
Sunrise Blvd to Zinfandel Drive	**1.00**	**E**	0.93	E	**1.01**	**F**	0.95	E	**1.04**	**F**	0.95	E	**1.03**	**F**	0.94	E	**1.04**	**F**	0.95	E

Notes: LOS = level of service; NA = not applicable; U.S. 50 = U.S. Highway 50; V/C = volume-to-capacity
[1] Capacity based on 2200 vphpl for freeway lanes, 1600 vphpl for auxiliary lanes.
Bold indicates deficiency where calculation indicates that demand exceeds capacity.
Source: Data provided by DKS Associates in 2009

Table 3A.15-51
Merge/Diverge/Weave Levels of Service — Cumulative (2030) Conditions – Caltrans – Quarry Truck Influence

Freeway Ramp	Merge, Diverge, or Weave Maneuver	No Project – No Quarry Trucks				Proposed Project – No Quarry Trucks				Proposed Project – Assumed Quarry Truck Distribution				Proposed Project With Mitigated Network Quarry Truck Distribution				Proposed Project – "Local Only" Quarry Truck Distribution			
		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
		Density[1]	LOS[2]	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS
EASTBOUND U.S. 50																					
Hazel Avenue off-ramp	Diverge	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	NA	NA	Aux	Aux
Hazel Avenue on-ramp – Aerojet off-ramp	Weave	30.8	D	29.9	D	34.5	D	36.1	E	36.2	E	36.1	E	34.7	D	34.7	D	34.5	D	36.1	D
Folsom Blvd off-ramp	Diverge	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux
Folsom Blvd on-ramp	Merge	25.4	C	30.6	D	28.5	D	32.0	D	30.3	D	32.0	D	28.8	D	31.1	D	28.5	D	32.0	D
Prairie City Road off-ramp	Diverge	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux
Prairie City Road direct on-ramp	Merge	**44.1**	**F**	**49.7**	**F**	**47.5**	**F**	**52.3**	**F**	**49.4**	**F**	**52.3**	**F**	NA	NA	NA	NA	**47.5**	**F**	**52.3**	**F**
Prairie City Road flyover on-ramp Oak Avenue Parkway off-ramp	Weave	41.3	E	**49.7**	**F**	**46.5**	**F**	**52.3**	**F**	**50.9**	**F**	**52.3**	**F**	NA	NA	NA	NA	**46.5**	**F**	**52.3**	**F**
Prairie City Road slip on-ramp to Oak Avenue Parkway off-ramp	Weave	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	39.1	E	40.7	E	NA	NA	NA	NA
Prairie City Road flyover on-ramp	Merge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Aux	Aux	Aux	Aux	NA	NA	Aux	Aux
Oak Avenue Parkway loop on-ramp	Merge	**34.5**	**F**	**43.5**	**F**	**37.4**	**F**	**41.9**	**F**	**37.4**	**F**	**41.9**	**F**	21.6	C	24.2	C	**37.4**	**F**	**41.9**	**F**
Oak Avenue Parkway direct on-ramp	Merge	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	21.8	C	24.2	C	Aux	Aux	Aux	Aux
East Bidwell Street - Scott Road direct off-ramp	Diverge	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux
East Bidwell Street - Scott Road loop on-ramp	Merge	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux
East Bidwell Street - Scott Road direct on-ramp	Merge	19.6	B	26.6	C	23.1	C	29.7	D	24.1	C	29.7	D	21.6	C	28.3	D	23.1	C	29.7	D
Empire Ranch Road direct off-ramp	Diverge	22.5	C	26.9	C	25.5	C	28.7	D	26.1	C	28.7	D	24.1	C	27.9	C	25.5	C	28.7	C
Empire Ranch Road loop on-ramp	Merge	26.1	C	31.2	D	25.6	C	30.1	D	26.2	C	30.1	D	23.7	C	28.3	D	25.6	C	30.1	D
Empire Ranch Road direct on-ramp	Merge	24.1	C	28.8	D	25.2	C	30.3	D	25.9	C	30.3	D	23.6	C	28.5	D	25.2	C	30.3	D
El Dorado Hills Bouelvard - Latrobe Road off-ramp	Diverge	35.0	E	38.2	E	35.0	D	38.3	E	35.5	E	38.3	E	33.6	D	36.5	E	35.0	D	38.3	E
El Dorado Hills Boulevard Latrobe Road on-ramp	Merge	21.1	C	27.3	C	21.4	C	27.9	C	22.1	C	27.9	C	21.9	C	27.9	C	21.4	C	27.9	C
Silva Valley Road direct off-ramp	Diverge	19.7	B	26.6	C	20.4	C	27.5	C	21.0	C	27.5	C	20.6	C	27.2	C	20.4	B	27.5	C
Silva Valley Road loop on-ramp	Merge	20.7	C	23.7	C	21.8	C	24.0	C	22.4	C	24.0	C	22.4	C	23.9	C	21.8	C	24.0	C
Silva Valley Road direct on-ramp	Merge	22.2	C	28.2	D	22.6	C	28.7	D	23.1	C	29.5	D	23.1	C	29.5	D	24.2	C	28.7	D

Table 3A.15-51
Merge/Diverge/Weave Levels of Service — Cumulative (2030) Conditions – Caltrans – Quarry Truck Influence

Freeway Ramp	Merge, Diverge, or Weave Maneuver	No Project – No Quarry Trucks				Proposed Project – No Quarry Trucks				Proposed Project – Assumed Quarry Truck Distribution				Proposed Project With Mitigated Network Quarry Truck Distribution				Proposed Project – "Local Only" Quarry Truck Distribution			
		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
		Density[1]	LOS[2]	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS
WESTBOUND U.S. 50																					
Silva Valley Road direct off-ramp	Diverge	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux
Silva Valley Road loop on-ramp	Merge	30.6	D	26.6	C	31.8	D	27.3	C	32.9	D	27.3	C	32.6	D	26.7	C	31.8	D	27.3	C
Silva Valley Road direct on-ramp	Merge	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux
El Dorado Hills Boulevard - Latrobe Road off-ramp	Diverge	15.0	B	10.7	B	15.2	B	10.8	B	15.7	B	10.8	B	15.8	B	10.5	B	15.2	B	10.8	B
El Dorado Hills Boulevard - Latrobe Road on-ramp	Merge	29.4	D	25.8	C	30.4	D	26.7	C	31.1	D	26.7	C	30.6	D	26.0	C	30.4	C	26.7	C
Empire Ranch Road direct off-ramp	Diverge	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux
Empire Ranch Road loop on-ramp	Merge	**35.9**	**F**	29.2	D	**37.8**	**F**	32.3	D	**38.9**	**F**	32.3	D	Aux	Aux	Aux	Aux	**37.8**	**F**	32.3	D
Empire Ranch Road direct on-ramp	Merge	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	24.4	C	20.5	C	Aux	Aux	Aux	Aux
East Bidwell Street - Scott Road direct off-ramp	Diverge	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux
East Bidwell Street - Scott Road loop on-ramp	Merge	36.5	E	29.4	D	37.1	E	33.7	D	37.3	D	33.7	D	37.0	E	32.8	D	37.1	E	33.7	D
East Bidwell Street - Scott Road direct on-ramp	Merge	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux
Oak Avenue Parkway direct off-ramp	Diverge	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux
Oak Avenue Parkway loop on-ramp	Merge	**35.5**	**F**	28.9	D	**34.4**	**F**	32.4	D	36.3	D	32.4	D	36.2	F	31.7	D	**34.4**	**F**	32.4	D
Oak Avenue Parkway direct on-ramp Prairie City Road direct off-ramp	Weave	**51.4**	**F**	**47.7**	**F**	**43.1**	**F**	38.7	E	42.3	E	38.7	E	42.3	E	37.1	E	**43.1**	**F**	38.7	E
Prairie City Road loop on-ramp	Merge	**44.8**	**F**	**41.6**	**F**	**48.4**	**F**	**47.3**	**F**	**51.1**	**F**	**47.3**	**F**	Aux	Aux	Aux	Aux	**48.4**	**F**	**47.3**	**F**
Prairie City Road direct on-ramp	Merge	Aux	Aux	Aux	Aux	Aux	Aux	NA	NA	NA	NA	NA	NA	30.0	D	28.6	D	NA	NA	NA	NA
Folsom Boulevard off-ramp	Diverge	13.8	B	15.1	B	14.6	B	16.4	B	16.0	B	16.4	B	15.9	B	15.3	B	14.6	B	16.4	B
Folsom Bouelvard on-ramp	Merge	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux
Hazel Avenue direct off-ramp	Diverge	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux
Hazel Avenue loop on-ramp	Merge	27.8	C	24.8	C	28.7	D	26.7	C	30.4	D	26.7	C	29.7	D	25.0	C	28.7	D	26.7	C
Hazel Avenue direct on-ramp	Merge	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux	Aux

Notes:
LOS = level of service; NA = not applicable – a lane drops at off ramp or adds at on ramp; U.S. 50 = U.S. Highway 50; Blank = ramp does not exist under this alternative
[1] Density in passenger cars per mile per lane for merge/diverge analysis only.
[2] LOS computed using Highway Capacity Software (HCS) 2000 software for the merge/diverge/weave analysis consistent with *Highway Capacity Manual* (HCM) 2000 methodologies.
[3] Where an auxiliary lane begins at an on ramp (as an add lane) or where an auxiliary lane end at an off ramp (as an add lane)
Bold indicates deficiency where calculation indicates that demand exceeds capacity.
Source: Data provided by DKS Associates in 2009

3A.15.6 RESIDUAL SIGNIFICANT IMPACTS

Implementation of the Proposed Project or the other four action alternatives would result in significant impacts to numerous intersections and roadways. However, mitigation measures, including construction of roadway and intersection improvements, would reduce all but five of these impacts to a less-than-significant level. Five impacts would remain significant and unavoidable under the project plus cumulative scenario. Two intersection impacts, at Oak Avenue Parkway/East Bidwell Street and East Bidwell Street/Iron Point Road would remain significant and unavoidable because it is contrary to City policy to construct 8-lane roadways, as would be required to fully mitigate the impact. Impacts to three roadway segments on eastbound U.S. 50, including the Zinfandel Drive to Sunrise Boulevard segment, the Rancho Cordova Parkway to Hazel Avenue segment, and the Folsom Boulevard to Prairie City Road segment, would remain potentially significant and unavoidable. The mitigation measures proposed for these segments call for fair-share payments to support the construction of the Southeast Capitol Connector. However, based on available information, it cannot be determined that the proposed Southeast Capitol Connector would reduce traffic volumes on U.S. 50 to an acceptable LOS, and therefore these impacts are considered **significant and unavoidable** in this EIR/EIS.

The requirement that the project applicant(s) participate in funding transportation improvements outside the City of Folsom would mitigate or substantially lessen the remaining significant impacts on roadways outside of the City, but those impacts are still considered to be **significant and unavoidable**. This conclusion in part reflects the fact that, even with the installation of proposed improvements, some impacts would still remain significant because acceptable levels of service would not be achieved. This conclusion also reflects the fact that successful implementation of some of the proposed improvements would require the cooperation of third party agencies (Sacramento and El Dorado Counties, the City of Rancho Cordova, and Caltrans) over which the City of Folsom has no control on timing or implementation. For this latter reason, the City of Folsom is conservatively acknowledging the possibility that, despite its own commitment to work with these other agencies, mutually acceptable accommodation may not be reached. Consistent with the State CEQA Guidelines CCR Section 15091, subdivision (a)(2), though, the City of Folsom concludes that these other agencies can and should cooperate with the City in implementing the mitigation.

Project implementation would increase demand for single-occupant automobile travel on area roadways and intersections causing roadway and intersection impacts (Impact 3A.15-2). Implementation of Mitigation Measure 3A.15-2a would reduce the demand of the single-occupant vehicle on area roadways and intersections. Implementation of Mitigation Measures 3A.15-2b, 3A.15-2c, and 3A.15-2d would promote usage of alternative transportation modes and increase the supply of these modes. Although implementation of these mitigation measures have the potential to substantially reduce the number of single-occupant vehicles, the project would still add a large number of single-occupant vehicles in the area. Because there are no additional feasible mitigation measures to further reduce the number of project-generated single-occupant vehicle trips, the impact would be significant and unavoidable.

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This section was prepared by RMC Water and Environment.

3B.15 TRAFFIC AND TRANSPORTATION – WATER

3B.15.1 AFFECTED ENVIRONMENT

This discussion places an emphasis on describing the affected environment for locations where physical environmental impacts would occur as a result of the construction and operation of the Off-site Water Facilities. In this context, the discussion is focused to portions of Zone 4 of the overall "Water" Study Area.

ROADWAY NETWORK

Affected roadways within Zone 4 of the "Water" Study Area fall under the jurisdiction of Sacramento County or the City of Rancho Cordova. These roadways are illustrated in Exhibit 2-26 in Chapter 2, "Alternatives." A brief description of key roadways in Zone 4 of the "Water" vicinity is provided below.

- **Sunrise Boulevard** is a major north-south secondary (arterial) road that connects Grant Line Road to the City of Roseville. It has two lanes between Grant Line Road and Douglas Road, four lanes between Douglas Road and White Rock Road, and six lanes north of White Rock Road.

- **White Rock Road** extends from International Drive to El Dorado County and is a two-lane roadway east of Sunrise Boulevard. In the vicinity of Zone 4 of the "Water" Study Area, the Circulation Element in the City of Rancho Cordova General Plan designates this roadway as a six-lane expressway. The widening of White Rock Road from Sunrise Boulevard to the future Silva Valley interchange in El Dorado Hills is a fully funded project.

- **Folsom Boulevard** is a four-lane secondary (arterial) road that extends from the City of Sacramento, through the City of Rancho Cordova and Sacramento County, into the City of Folsom. It is a four-lane roadway within the vicinity of Zone 4 of the "Water" Study Area.

- **Douglas Road** is a two-lane roadway that extends from Mather Boulevard in the Mather Reuse Area to Grant Line Road. The Circulation Element of the City of Rancho Cordova's General Plan designates this roadway as a six-lane major road.

- **Excelsior Road** is a two-lane roadway that extends Grant Line Road north to Mather Road through central Sacramento County.

- **Eagles Nest Road** is a two-lane roadway that extends Grant Line Road north to Douglas Road through central Sacramento County. Eagles Nest Road parallels Excelsior Road to the east. A portion of this roadway is currently unimproved (unpaved).

- **Mather Boulevard** is a two-lane roadway that extends to the northern terminus of Excelsior Road north to Mather Field Road.

- **Grant Line Road** is a two-lane roadway that extends from SR 99 to White Rock Road through the southeastern portion of Sacramento County. The County and City of Rancho Cordova General Plans designate this roadway as a six-lane expressway. This roadway is currently the preferred alignment for the East County Connector.

- **Jackson Highway**, also known as SR 16, is a two-lane highway that extends from Folsom Boulevard east of Howe Avenue into Amador County. In the vicinity of the Off-site Water Facilities Study Area, the Circulation Element of the City of Rancho Cordova General Plan designates this roadway as a six-lane expressway.

- **Prairie City Road** is a rural, two-lane road south of U.S. 50 to its terminus at White Rock Road.

- **Gerber Road** is an east-west, 2-lane, rural roadway in the southern portion of Zone 4 of the "Water" Study Area.

- **Ivan Way** is a north-south, residential collector roadway within the North Douglas Community.

Planned Roadways

- **Rancho Cordova Parkway (Planned).** This roadway would run north-south and provide connectivity between White Rock Road and a new interchange on U.S. 50. The planned roadway cross-section would include six vehicle travel lanes, bicycle lanes, a landscaped median and landscape corridors with sidewalks on both sides. This roadway would serve as the primary north-south connector for the City of Rancho Cordova east of Sunrise Boulevard and would be constructed in conjunction with the planned Westborough Specific Plan area.

- **Easton Valley Parkway (Planned).** This roadway is proposed to run east-west and begin at the intersection with the planned Rancho Cordova Parkway. The planned roadway cross-section would include up to six vehicle travel lanes, bicycle lanes, a landscaped median, and landscape corridors with sidewalks on both sides. This roadway would provide parallel capacity for U.S. 50, intersect with a future extension of Hazel Avenue, continue through the planned Easton Place and Glenborough developments, and may ultimately extend across Prairie City Road into the Folsom SPA.

LEVEL OF SERVICE

Level of Service (LOS) is a general measure of traffic operating conditions whereby a letter grade, from A (the best) to F (the worst), is assigned. These grades represent the perspective of drivers and are an indication of the comfort and convenience associated with driving. The LOS grades are defined in the Highway Capacity Manual (HCM) as follows:

- LOS A represents free-flow travel with an excellent level of comfort and convenience and the freedom to maneuver.

- LOS B has stable operating conditions, but the presence of other road users causes a noticeable, though slight, reduction in comfort, convenience, and maneuvering freedom.

- LOS C has stable operating conditions, but the operation of individual users is significantly affected by the interaction with others in the traffic stream.

- LOS D represents high-density, but stable flow. Users experience severe restriction in speed and freedom to maneuver, with poor levels of comfort and convenience.

- LOS E represents operating conditions at or near capacity. Speeds are reduced to a low but relatively uniform value. Freedom to maneuver is difficult with users experiencing frustration and poor comfort and convenience. Unstable operation is frequent, and minor disturbances in traffic flow can cause breakdown conditions.

- LOS F is used to define forced or breakdown conditions. This condition exists wherever the volume of traffic exceeds the capacity of the roadway. Long queues can form behind these bottleneck points with queued traffic traveling in a stop-and-go fashion.

Existing Roadway Conditions

The City conducted a review of several recently prepared EIRs (City of Rancho Cordova 2006 and Sacramento County 2008b) for development projects within Zone 4 of the "Water" Study Area, both certified and in public draft form, to establish a baseline for existing roadway operations. Roadways considered as part of this analysis and their current average daily trips (ADT) and LOS are provided in Table 3B.15-1.

Table 3B.15-1
Level of Service for Roadways in Zone 4 of the "Water" Study Area

Roadway Segment	Average Daily Trips	Level of Service (Peak Hour)
Sunrise Boulevard (White Rock Road to Douglas Road)	24,600	B
Sunrise Boulevard (Florin Road to Grant Line Road)	7,300	D
Grant Line Road (White Rock Road to Douglas Road)	9,600	D
Grant Line Road (Douglas Road to SR 16)	7,300	D
Grant Line Road (SR 16 to Sunrise Boulevard)	5,600	C
Folsom Boulevard (Hazel Avenue to Sunrise Boulevard)	13,300	A
Prairie City Road (U.S. 50 to White Rock Road)	5,800	A
Douglas Road (Grant Line Road to Sunrise Boulevard)	2,300	A
Douglas Road (Mather to Sunrise Boulevard)	5,000	A
White Rock Road (Sunrise Boulevard to Grant Line Road)	13,900	B
White Rock Road (Grant Line Road to Prairie City Road)	10,300	E
White Rock Road (Grant Line Road to Scott Road)	7,600	D
Excelsior Road (segment not specified)	3,908	A
Eagles Nest Road (segment not specified)	NA	NA
Florin Road (east of Bradshaw Road)	3,050	B
Gerber Road (east of Bradshaw Road)	7,349	C

Note: NA = not applicable
Source: Sacramento County 2008b, City of Rancho Cordova 2006

BIKEWAYS

The 2010 Sacramento City/County Bikeway Master Plan (Sacramento County 1992) identifies existing and planned bicycle routes through Zone 4 of the "Water" Study Area. The only existing facility in the Zone 4 is an off-street multiuse path along the FSC west of Sunrise Boulevard, connecting Hazel Avenue north of U.S. 50 with Grant Line Road. In addition to this facility, on-street bike lanes are planned on Sunrise Boulevard, Grant Line Road, Jackson Highway (SR 16) (just past Grant Line Road), Kiefer Boulevard west of Sunrise Boulevard, Douglas Road west of Sunrise Boulevard, Excelsior Road, and White Rock Road. The City/County Bikeway Master Plan also contains design, safety, and traffic control standards for use in constructing and upgrading facilities. The County is currently in the process of updating their Bikeway Master Plan.

RAIL SERVICE

Rail service in eastern Sacramento County is limited to freight service. There is no direct rail passenger service.

TRANSIT SYSTEM

Light-rail transit service is provided from downtown Sacramento along the U.S. 50 corridor to the Hazel Avenue light-rail station. Light rail then extends eastward to the City of Folsom. Another light-rail station is being proposed as part of the Westborough Specific Plan area and would be located between the Sunrise Boulevard station and the Hazel Avenue station.

EMERGENCY VEHICLE ACCESS

The Sacramento Metropolitan Fire District operates five fire stations within Zone 4 of the "Water" Study Area. The fire stations include Stations 50, 55, 58, 61, and 66, which are located at 8880 Gerber Road, 7776 Excelsior Road, 7520 Sloughhouse Road, 10595 Folsom Boulevard, and 3180 Kilgore Road, respectively.

3B.15.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

There are no Federal plans, policies, regulations, or laws related to traffic and transportation that apply to the Off-site Water Facility Alternatives under consideration. Federal regulations that apply to traffic and transportation are administered by Caltrans and local jurisdictions.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

Caltrans prepares a Transportation Concept Report for each of its facilities in Zone 4 of the "Water" Study Area. A Transportation Concept Report is a long-term planning document that each Caltrans district prepares for every state highway or portion thereof in its jurisdiction. This document usually represents the first step in Caltrans' long-range corridor planning process. The purpose of a Transportation Concept Report is to determine how a highway will be developed and managed so that it delivers the targeted LOS and quality of operations that are feasible to attain over a 20-year period. These are indicated in the "route concept." In addition to the 20-year route concept level, the Transportation Concept Report includes an "ultimate concept," which is the ultimate goal for the route beyond the 20-year planning horizon. Ultimate concepts must be used cautiously, however, because unforeseen changes in land use and other variables make forecasting beyond 20 years difficult.

SR 16 crosses the southern portion of Zone 4 of the "Water" Study Area and has a route concept level of LOS E. The ultimate concept for SR 16 is a four-lane facility with continuous left-turn lanes (Caltrans 2004a).

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

The following local and regional plans, policies, regulations, and laws related to transportation and alternative transportation are relevant to the Off-site Water Facilities alternatives, and are described in detail in Section 3A.15, "Traffic and Transportation – Land:"

- Metropolitan Transportation Plan for 2035 (MTP 2035)
- City of Folsom General Plan
- Sacramento County General Plan
- City of Rancho Cordova General Plan

Sacramento County

According to the Policy CI-22 of the Sacramento County General Plan, the County applies the following LOS standards for planning roads within unincorporated areas:

1. Rural collectors: LOS D
2. Urban area roads: LOS E

City of Rancho Cordova Capital Improvement Program

The City of Rancho Cordova has been operating under a 5-year Capital Improvement Program (CIP) (2005–2010) that includes several roadway facilities in Zone 4 of the "Water" Study Area, including improvements to Douglas Road, Kiefer Boulevard, Sunrise Boulevard, and SR 16. Funding sources associated with the current CIP include development fees, financing districts, Measure A sales taxes[1], and state and Federal funding sources.

3B.15.3 Environmental Consequences and Mitigation Measures

Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. These thresholds also encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. For the purposes of this analysis, to determine whether traffic and transportation impacts are significant environmental effects, the following questions are analyzed and evaluated. Would the project:

- cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections);
- exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways;
- result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;
- substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- result in inadequate emergency access;
- result in inadequate parking capacity; or
- conflict with adopted policies, plans or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

Analysis Methodology

The operations of roadway facilities are described in terms of LOS. LOS is a qualitative description of traffic flow based on factors such as speed, travel time, delay, freedom to maneuver, volume, and capacity. Six levels are

[1] Measure A is a half-cent sales tax that was approved by voters to implement transportation improvements in the Sacramento region. Some Measure A funding has been identified to fund specific roadway improvements in the project study area.

defined, from LOS A, as the best operating conditions, to LOS F, or the worst operating conditions, as described in the setting discussion. LOS E represents "at-capacity" operations. When volumes exceed capacity, stop-and-go conditions result and operations are designated as LOS F.

Because the Off-site Water Facility Alternatives under consideration would cause traffic impacts on roadways that are under state, County, and City of Rancho Cordova jurisdictions, this analysis considers a combination of policies and guidelines. The City of Rancho Cordova identifies LOS D as its minimum standard for intersection operations. The County identifies LOS E as the minimum acceptable standard for intersection operations in the project vicinity. For state-controlled facilities, thresholds presented in the State's Route Concept Report were applied (e.g., the concept service level for SR 16 is LOS E).

Program-level impacts for the Off-site Water Facility Alternatives and mitigation measures are presented together in the section below. Operational impacts to the roadway network were assessed in relation to the total number of daily vehicle trips generated by the WTP, which as provided in Chapter 2, "Alternatives," could be up to 40 daily vehicle trips and that access would occur from White Rock Road. These operational trips are included in the overall traffic analysis provided in Section 3A.15, "Traffic and Transportation – Land," which provides an analysis of overall build-out of Folsom SPA and was considered appropriate given that the Off-site Water Facility Alternatives would only be constructed in conjunction with the approval Folsom South of 50 Specific Plan. However, since the Off-site Water Facilities would need to be constructed and operational in advance of the occupancy of any commercial or residential structures within the Folsom SPA, this analysis considers the addition of this vehicles trips prior to any build-out within the SPA.

ISSUES NOT DISCUSSED FURTHER IN THIS EIR/EIS

Safety Hazards from Change in Air Traffic Patterns—The Off-site Water Facility Alternatives would not include the construction of any structural facilities within a runway hazard or overflight zone. Likewise, the Off-site Water Facility Alternatives would not include the expansion of airport facilities or increase air traffic. In this context, the Off-site Water Facility Alternatives would not require a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks. No impact would occur. Therefore, this issue area is not discussed further.

Alternative Forms of Transportation—The Off-site Water Facility Alternatives would not involve new land development that would place new demands on alternative forms of transportation. For this reason, the Off-site Water Facility Alternatives would not include any actions that would conflict with adopted policies, plans or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks). Issues related to potential temporary conflicts between Off-site Water Facility Alternatives construction and existing bicycle or pedestrian trails are addressed in Section 3B.12, "Parks and Recreation – Water." No impact would occur. Therefore, this issue area is not discussed further.

Parking Capacity—Construction worker parking would be available at designated staging areas and along local roadways where sufficient space along the roadway shoulder is available. As provided in Chapter 2, "Alternatives," the Off-site Water Facility Alternatives would not involve the construction of new commercial or residential uses and, therefore, no new increased demand for parking would directly result in response to the Off-site Water Facility Alternatives. Sufficient employee parking would be provided on-site at the WTP, if constructed. Based on these considerations, the Off-site Water Facility Alternatives is not expected to result in inadequate parking capacity and no impact would occur. Therefore, this issue area is not discussed further.

IMPACT ANALYSIS

Impacts that would occur under each of the Off-site Water Facility Alternatives are identified as follows:

NCP (No USACE Permit Alternative)

PA (Proposed Off-site Water Facility Alternative)

1 (Off-site Water Facility Alternative 1 – Raw Water Conveyance – Gerber/Grant Line Road Alignment and White Rock WTP)

1A (Off-site Water Facility Alternative 1A Raw Water Conveyance – Gerber/Grant Line Road Alignment Variation and White Rock WTP)

2 (Off-site Water Facility Alternative 2 Treated Water Conveyance – Douglas Road Alignment and Vineyard SWTP)

2A (Off-site Water Facility Alternative 2A Treated Water Conveyance – Excelsior Road Alignment Variation and Vineyard SWTP)

2B (Off-site Water Facility Alternative 2B Treated Water Conveyance – North Douglas Tanks Variation and Vineyard SWTP)

3 (Off-site Water Facility Alternative 3 Raw Water Conveyance – Excelsior Road Alignment and White Rock WTP)

3A (Off-site Water Facility Alternative 3A Raw Water Conveyance – Excelsior Road Alignment Variation and White Rock WTP)

4 (Off-site Water Facility Alternative 4 Raw Water Conveyance – Easton Valley Parkway Alignment and Folsom Boulevard WTP)

4A (Off-site Water Facility Alternative 4A Raw Water Conveyance – Easton Valley Parkway Alignment Variation and Folsom Boulevard WTP).

The impacts for each alternative are compared relative to the PA at the end of each impact conclusion (i.e., similar, greater, lesser).

IMPACT 3B.15-1 Temporary and Short-Term Reduction in Roadway Capacity during Construction. *Off-site Water Facility Alternatives construction could result in temporary reductions in roadway capacities, which could be substantial in relation to existing volume-to-capacity ratios on local roadways and congestion at intersections.*

NCP, PA, 1, and 1A

Under these alternatives, construction-generated traffic would be temporary, approximately 36 months in duration, and therefore would not result in any long-term degradation in operating conditions or LOS on any roadways within the Zone 4 of the "Water" Study Area. The primary impacts from Off-site Water Facilities construction vehicle traffic would include temporary, short-term, and intermittent reductions of roadway capacities associated with the movement of construction equipment. Lane blockage caused by construction traffic would be temporary and limited to within the immediate vicinity of pipeline construction.

Pipeline construction would affect the roadway network in two ways. Construction would either cross a roadway or it would run parallel to a roadway within the public right-of-way. As proposed, these Off-site Facility Alternatives pipeline would run parallel to or longitudinally within the public road right-of-way and, as a result, portions of the roadway that would normally be used for traffic circulation or parking would be temporarily unavailable. This displacement could block two travel lanes, one travel lane and the adjacent shoulder/parking area, or just the shoulder/parking area, depending upon the pipeline's lateral placement within the road right-of-

way. It is estimated that lane blockages would last for durations varying between a few days for perpendicular encroachments to 2–3 weeks for parallel or longitudinal encroachments at any given segment of Grant Line Road, Gerber Road, and White Rock Roads. These **direct** and **indirect** impacts are considered **potentially significant**. ***[Similar]***

In addition to the above impacts, the use of large trucks to transport equipment and material to and from the Off-site Water Facilities work site could affect road conditions on the access routes by increasing the rate of road wear. The degree to which this impact would occur depends on the design (pavement type and thickness) and the existing condition of the road. Major arterials and collectors are designed to accommodate a mix of vehicle types, including heavy trucks. The potential impacts are expected to be negligible on those roads. However, lower-capacity roadways could be significantly impacted by construction equipment within the roadway. Therefore, this **direct** impact is considered **significant**. ***[Similar]***

Mitigation Measure 3B.15-1a: Prepare Traffic Control Plan.

Prior to construction, the City shall prepare a Traffic Control Plan for roadways and intersections affected by Off-site Water Facilities-related construction. The Traffic Control Plan shall designate haul routes and comply with requirements in the encroachment permits issued by the City of Rancho Cordova, Sacramento County, and Caltrans. The Traffic Control Plan to be prepared by the construction contractor(s) shall, at minimum, include the following measures:

- Maintaining the maximum amount of travel lane capacity during non-construction periods, possible, and advanced notice to drivers through the provision of construction signage.
- Maintaining alternate one-way traffic flow past the lay down area and site access when feasible.
- Heavy trucks and other construction transport vehicles shall avoid the busiest commute hours (7 a.m. to 8 a.m. and 5 p.m. to 6 p.m. on weekdays).
- The City shall provide a minimum 72-hour advance notice of access restrictions for residents, businesses, and local emergency response agencies. This shall include the identification of alternative routes and detours to enable for the avoidance of the immediate construction zone.
- The City, in cooperation with its contractor(s), shall provide a phone number and community contact for inquiries about the schedule of the Off-site Water Facilities throughout the construction period. This information will be posted in a local newspaper, via the City's web site, or at City Hall and will be updated on a monthly basis.
- To the extent practical depending the alignment of the selected Off-site Water Facility Alternative, the City shall maximize opportunities for coordinated construction and installation of the conveyance pipeline with other planned roadway improvement projects.

Implementation: City of Folsom Utilities Department

Timing: Prior to and during construction of all Off-site Water Facilities

Enforcement:

1. For structural improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department.
2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department.

3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.

Mitigation Measure 3B.15-1b: Assess Pre-Off-site Water Facilities Roadway Conditions.

Prior to construction, the City's construction contractor(s) shall be responsible for assessing current road conditions for Off-site Water Facilities-related haul routes including the local access roads and develop post construction road restoration requirements. As part of the encroachment permitting process, an agreement shall be entered into with applicable jurisdictions prior to construction that details post construction road restoration requirements. Staff with the City of Rancho Cordova and Sacramento County shall review the post construction restoration standards for each of the affected roadways. The City shall perform roadway repairs or rehabilitation as necessary such that post construction requirements are met.

Implementation: City of Folsom Utilities Department

Timing: Prior to and during construction of all Off-site Water Facilities

Enforcement:

1. For structural improvements that would be located within the City of Folsom: City of Folsom Neighborhood Services Department and City of Folsom Community Development Department.

2. For structural improvements that would be located within unincorporated Sacramento County: Sacramento County Planning and Community Development Department.

3. For structural improvements that would be located within the City of Rancho Cordova: City of Rancho Cordova Planning Department.

2, 2A, and 2B

Traffic-related impacts to roadways would be similar under Alternatives 2 and 2A to those described for Off-site Water Facility Alternative 1. Under Off-site Water Facility Alternatives 2 and 2A, these impacts would be shifted to Vineyard Road, Eagles Nest Road, Douglas Road, and White Rock Road. Under Off-site Water Facility Alternative 2A, the alignment would be shifted from Eagles Nest Road (Off-site Water Facility Alternative 2) to Excelsior Road which has a higher ADT. Under Off-site Water Facility Alternative 2B, the shortened alignment would only impact Ivan Way, Douglas Road, and White Rock Road. Nevertheless, these alternatives could result in similar roadway construction impacts as identified for the Proposed Off-site Water Facility Alternative, and the **direct** and **indirect** impacts would be considered **potentially significant**. ***[Similar]***

Mitigation Measure: Implement Mitigation Measures 3B.15-1a and 3B.15-1b.

3 and 3A

Traffic-related impacts to roadways would be similar under Alternatives 3 and 3A to those described for Off-site Water Facility Alternative 1. Under Alternatives 3 and 3A, these impacts would be shifted to Vineyard Road, Eagles Nest Road, Douglas Road, and White Rock Road. Under Alternative 3A, the alignment would be shifted from Eagles Nest Road (Off-site Water Facility Alternative 3) to Excelsior Road which has a higher ADT. These alternatives could result in similar roadway construction impact as identified for the Proposed Off-site Water Facility Alternative, and **direct** and **indirect** impacts would be considered **potentially significant**. ***[Similar]***

Mitigation Measure: Implement Mitigation Measures 3B.15-1a and 3B.15-1b.

4 and 4A

Traffic-related impacts to roadways would be similar under Off-site Water Facility Alternatives 4 and 4A to those described for Off-site Water Facility Alternative 1. Under Off-site Water Facility Alternatives 4 and 4A, these impacts would be shifted to Vineyard Road, Eagles Nest Road, Douglas Road, White Rock Road, and potentially, Sunrise Boulevard. Under Off-site Water Facility Alternative 4A, the alignment would be shifted from Eagles Nest Road (Off-site Water Facility Alternative 2) to Excelsior Road which has a higher ADT. These alternatives could result in similar roadway construction impact as identified for the Proposed Off-site Water Facility Alternative, and **direct** and **indirect** impacts would be considered **potentially significant**. ***[Similar]***

Mitigation Measure: Implement Mitigation Measures 3B.15-1a and 3B.15-1b.

Implementation of Mitigation Measures 3B.15-1a and 3B.15-1b would ensure that temporary and short-term impacts to traffic and roadway LOS would be reduced to a **less-than-significant** level by ensuring the continued movement of traffic during construction, minimizing disruption to adjacent residences and bike access, and providing sufficient notification to the affected population of alternate travel routes.

IMPACT 3B.15-2 Exceedance of Established Level of Service Standards for Local Roadways. *The implementation of Off-site Water Facility Alternatives could cause traffic conditions to exceed, either individually or cumulatively, a level of service standard established by the County congestion management agency for designated roads or highways.*

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A

During construction, traffic would be generated from two sources: truck trips to and from the work site, and construction work crews and supervisor staff commuting to and from the work site. Based on a maximum of three construction crews, the maximum number of crew members accessing portions of Zone 4 of the "Water" Study Area at any one time would be up to 66 individuals or up to 66 additional vehicle trips per day for both the morning and evening peak hours. In addition, during peak excavation and earthwork activities, the Off-site Water Facility Alternatives could generate up to 20 round-trip truck trips per day. However, average daily earthwork truck trips would be less and range from about 1 to 4 round trips per day during much of construction and could be scheduled to avoid the peak traffic hours. Additional trips to or from the construction site would occur during project initiation with the delivery of various equipment to the site such as excavators, tracked excavators, wheel loaders, concrete pump trucks, graders, backhoes and other equipment (see Chapter 2, "Alternatives"). All construction-generated fill and excavated spoils would be used as fill material for the WTP site or transported to the Kiefer Landfill for disposal. For this reason, it is reasonable to conclude that no transportation of fill to areas outside of Zone 4 of the "Water" Study Area would occur in conjunction with the Off-site Water Facility Alternatives.

If all the construction-related equipment and the construction crews accessed or exited the site during the evening peak-hour the maximum number of vehicles would be up to 86 at any one time. In recognizing the poor operating conditions on portions of local roadways during the peak traffic hours (e.g., Sunrise Boulevard), the addition of project-related construction traffic could temporarily lead to further degradation in traffic movements. **Potentially significant direct** and **indirect** transportation impacts associated with the Off-site Water Facilities would occur. ***[Similar]***

As provided in Chapter 2, "Alternatives," the operation of the WTP under any of the alternatives are expected to require up to 10 employees, on average, each of which could produce 4 daily vehicle trips for a total of 40 daily trips or less. Given that these trips would be dispersed throughout the day and the roadway network, they would not be expected to not result in any long-term degradation in operating conditions or LOS on any local roadways

or intersections. For these reasons, long-term, **direct** and **indirect** traffic-related impacts associated with the Off-site Water Facility Alternative are considered **less than significant**. ***[Similar]***

Mitigation Measure: Implement Mitigation Measure 3B.15-1a.

Implementation of Mitigation Measure 3B.15.1a would ensure that temporary and short-term impacts to roadway and intersection LOS would be reduced to a **less-than-significant** level by ensuring the continued movement of traffic past the construction zone and provision of alternative routes. Because of the low volume of daily trips generated by the combined operation of the Off-site Water Facility Alternatives, a **less than significant**, long-term operational impact is expected.

IMPACT 3B.15-3 Increased Traffic Hazards on Local Roadways. *Implementation of the Off-site Water Facility Alternatives could substantially increase hazards on local roadways due to the presence of incompatible uses, such as construction equipment.*

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A

Haul trucks and heavy equipment used during the construction of the Off-site Water Facilities would interact with vehicle movements on existing roadways. The creation of a construction work zone on high-volume or high-speed roadways would increase the potential for traffic safety hazards because of the need to safely transition traffic into the travel lane(s) adjacent to the work zone. Because of the temporary disruption to traffic flow, the removal of lanes, the presence of construction equipment in the public right-of-way, and the localized increase in traffic congestion, drivers would be presented with unexpected driving conditions and obstacles. This could potentially result in an increased occurrence of automobile or haul truck accidents and would be considered a **potentially significant direct** impact. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure: Implement Mitigation Measure 3B.15-1a.

Implementation of Mitigation Measure 3B.15.1a would ensure that construction-related hazards on local roadways would be reduced to a **less-than-significant** level by ensuring proper notification to drivers of construction zones. All roadway-related improvements (e.g., pipelines) would be located sub-surface and would not contribute to any significant roadway design hazards and no long-term impacts are anticipated.

IMPACT 3B.15-4 Possible Inadequate Emergency Vehicle Access. *Construction of the Off-site Water Facilities could result in disruptions to emergency access.*

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A

Access to driveways and to cross-streets along the pipeline construction route would be temporarily blocked due to trenching and paving operations during construction of the Off-site Water Facilities. This could be disruptive, particularly with respect to agricultural operations as well as for movement of emergency vehicles through the Off-site Water Facilities Study Area. Vehicle access would be restored at the end of each work day through the use of steel trench plates or trench backfilling. Emergency vehicle access to the residences in the immediate vicinity of the Off-site Water Facilities would have a minimal potential for being impeded for a few minutes. Construction-related vehicles would yield to emergency vehicles, as necessary. Based on these considerations, the **direct** impact is considered **less than significant**. **No indirect** impacts would result. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

3B.15.4 RESIDUAL SIGNIFICANT IMPACTS

Through the implementation of Mitigation Measure 3B.15-1, potentially significant traffic impacts resulting from the construction of the Off-site Water Facility Alternatives would be reduced to a less-than-significant level through proper construction sequencing, maintenance of two-way traffic, where possible, during construction, and measures to avoid the creation of traffic hazards. Based on these findings, the Off-site Water Facility Alternatives would not result in any residual significant and unavoidable impacts to traffic.

3A.16 UTILITIES AND SERVICE SYSTEMS - LAND

3A.16.1 AFFECTED ENVIRONMENT

WASTEWATER COLLECTION AND TREATMENT

The SPA is presently not served by any municipal wastewater collection and treatment systems. Approximately 3,313 acres of the SPA west of Empire Ranch Road is within the Sacramento Regional County Sanitation District (SRCSD) and the remaining 189 acres east of Empire Ranch Road is within both the SRCSD and El Dorado Irrigation District (EID) service areas. Existing and proposed on- and off-site facilities are shown in Exhibit 2-9 in Chapter 2, "Alternatives."

Sacramento Regional County Sanitation District

Wastewater Collection

Sanitary-sewer service for approximately 3,313 acres of the SPA would be provided by SRCSD, and SRCSD would provide off-site interceptor conveyance and sanitary sewer treatment and disposal for this portion of the SPA. SRCSD is responsible for collection by interceptors (sanitary sewers that are designed to carry flows in excess of 10 million gallons per day [mgd]) and for wastewater treatment in Sacramento County. This district owns, operates, and is responsible for the public collection, trunk, and interceptor sewer systems throughout Sacramento County as well as the Sacramento Regional Wastewater Treatment Plant (SRWTP) located south of the community of Freeport.

The Proposed Project Alternative would construct an off-site sewer force main to connect with SRCSD's Folsom East Interceptor. Sacramento County evaluated the environmental impacts of constructing trunk and interceptor sewers that would serve most of the Sacramento region (including the SPA) at a programmatic level in the *Sacramento Regional County Sanitation District Interceptor Master Plan 2000, Final Program Environmental Impact Report* (State Clearinghouse [SCH] No. 2001112085) (SRCSD 2003a). This EIR was certified and the master plan approved in March 2003.

The purpose of the *SRCSD Interceptor System Master Plan 2000* (SRCSD 2003b) is to identify near- and long-term improvements needed for the regional wastewater conveyance system. The master plan describes the regional interceptor projects, along with their timing and costs, so that existing and future deficiencies in the regional system can be more accurately identified and predicted and strategic approaches to remedying these deficiencies can be developed. The plan uses new information regarding population growth, wastewater flow generation, and actual system responses to wet weather. The SRCSD's Master Plan 2000 includes the Folsom East Interceptor, which was constructed to convey project-related wastewater flows.

The wastewater flows generated by the Proposed Project Alternative, including the 189-acrea portion of the SPA that would be served by EID, have been planned for in the SRCSD Master Plan 2000. The master plan estimates that buildout of the SPA would generate an average dry-weather flow of 6.82 mgd a peak wet-weather flow of 14.48 mgd (SRCSD 2003b:Table 3-1). The master plan assumes buildout of the SPA would be beyond the plan's 2020 planning horizon; however, the wastewater flows generated by the project at buildout were planned for and evaluated in the master plan. Because 189 acres of the SPA would be served by EID, project-related wastewater flows would be less than those identified in the SRCSD Master Plan 2000.

The Proposed Project Alternative would connect to an existing 24-inch force main located within Iron Point Road north of U.S. 50 downstream of the existing Folsom East 3B Pump Station. Exhibit 2-9 illustrates the location of this off-site connection. The existing 24-inch force main is currently a dry pipeline and was constructed as part of the Folsom East Interceptor for future use by the Proposed Project Alternative. The existing 24-inch force main runs parallel to the Folsom East 3B 18-inch force main, and these force mains travel west in Iron Point Road to

the intersection of Iron Point Road and McAdoo Road where they connect to the Folsom East Interceptor Section 3A 36-inch gravity sewer pipe.

Wastewater Treatment

Wastewater flows collected from the SRCSD interceptors are ultimately transported into the SRWTP. The SRWTP receives and treats an average of 141 mgd (as of 2008) and has a permitted dry-weather flow design capacity of 181 mgd. In 2000, flows were approximately 155 mgd and were projected to increase and surpass the 181 mgd capacity by 2007. However, flows to the SRWTP have since decreased and there is currently 40 mgd of available capacity within the 181 mgd.

Wastewater conveyed to the SRWTP is treated to a secondary level and is ultimately discharged into the Sacramento River. The SRWTP has a National Pollutant Discharge Elimination System (NPDES) permit issued by the Central Valley Regional Water Quality Control Board (RWQCB) for discharge of up to 181 mgd of treated effluent into the Sacramento River. SCRSD certified the *Sacramento Regional Wastewater Treatment Plant 2020 Master Plan Final Environmental Impact Report* (SRCSD 2004) (SCH No. 2002052004) in June 2004. The adequacy of the EIR has been challenged, and the case is pending review in the 3rd District Court of Appeal. The Court of Appeal could overturn or uphold the Superior Court's determination in whole or in part. The Court of Appeal has not yet issued its own ruling, and it would be speculative to predict the outcome. However, a decision by the court is expected in 2010 (*see Contra Costa Water District v. Sacramento County Regional Sanitation District,* appellate case number C058460, available at http://appellatecases.courtinfo.ca.gov/search/case/mainCaseScreen.cfm?dist=3&doc_id=1202308&doc_no=C058460&search=number&start=1&query_caseNumber=C058460). Significant impacts were identified in the EIR, and a summary of the environmental impacts have been incorporated by reference and are summarized in this section as they relate to the contributions to the potential need for expansion of the SRWTP by the project.

The *Sacramento Regional Wastewater Treatment Plant 2020 Master Plan* (2001) provides for the expansion of the SRWTP to 218 mgd based on growth rates expected to be achieved in the Sacramento County region, and provides a phased program of recommended wastewater treatment facilities and management programs to accommodate planned growth and to meet existing and anticipated regulatory requirements through the year 2020. The master plan addresses both public health and environmental protection issues while ensuring reliable service at affordable rates for SRCSD customers. The key goals of the master plan are to provide sufficient capacity to meet growth projections and an orderly expansion of SRWTP facilities, comply with applicable water quality standards, and provide for the most cost-effective facilities and programs from a watershed perspective.

As part of the 2005 permit renewal process, the SRWTP applied to the Central Valley RWQCB for a NPDES permit to accommodate these additional discharges into the Sacramento River. In June 2010 the SRCSD removed its formal request to the Central Valley RWQCB for an increase in permitted wastewater discharge capacity. Flows to the SRWTP have decreased from water conservation efforts over the last 10 years and it is anticipated that State legislation passed in 2009, which mandates further water conservation efforts, could substantially reduce the amount of wastewater in the future. In addition, the SRCSD has prioritized its goals to increase water recycling in the region as an element to support the comprehensive effort to promote water supply reliability and Delta sustainability. Therefore, the SRCSD has determined the SRWTP can provide capacity to future development beyond what was originally anticipated. (SRCSD 2010).

El Dorado Irrigation District

Wastewater Collection

An approximately 189 acre portion of the SPA east of Empire Ranch Road is within the EID service area. Within the vicinity of the SPA there are existing EID sewer mains in El Dorado Hills. These sewer mains include: a 6-inch sewer main at Winterfield Court, a 6-inch sewer main at the intersection of Stonebriar Drive and Prima Way, and a 6-inch sewer main at Ranch Bluff Way south of White Rock Road. The sewer flows from this community

are conveyed to an existing pump station at the intersection of White Rock Drive and Winterfield Drive (Exhibit 2-7 in Chapter 2, "Alternatives."). Wastewater flows collected from EID's sewer system are ultimately transported into the El Dorado Hills Wastewater Treatment Plant (WWTP).

Wastewater Treatment

EID adopted its *Wastewater Master Plan Update* in November 2001 (HDR Engineering 2001). The master plan update includes estimates of existing and projected wastewater flows from the area served by EID's sewer collection system, projects wastewater treatment needs for the EID service area through 2025, and identifies system expansions and upgrades needed to meet projected increases in wastewater flows. Project-related wastewater flows were not evaluated in the EID Master Plan Update.

Currently, the El Dorado Hills WWTP's design capacity is 3.0 mgd average dry-weather flow and 7.6 mgd peak wet-weather flow. As of 2009, the average dry-weather flow is approximately 2.86 mgd and peak wet-weather flow is 8.04 mgd (Central Valley RWQCB 2007; Caulfield, pers. comm. 2009). Expansion of the WWTP is required to provide wastewater treatment capacity for land uses in El Dorado Hills as identified by the El Dorado County General Plan (2003), to meet anticipated regulatory requirements for water quality, and to help meet recycled water demands (EID 2007:2).

The environmental impacts of the expansion and operation of the El Dorado Hills WWTP were analyzed in an initial study/mitigated negative declaration (IS/MND) (SCH No. 2006082058), which was adopted by EID in June 2007 (EID 2007). Improvements to the WWTP identified and analyzed in the IS/MND include: new headworks, pumping stations, tertiary filters, ultraviolet disinfection, odor control, an administrative building, storage pond lining, and chemical feed system improvements. The capacity of the treatment plant would be expanded to 5.4 mgd in two phases. The first phase of the treatment plant expansion to 4.0 mgd is expected to be completed in 2010, with full buildout to 5.4 mgd by 2025 (Caulfield, pers. comm. 2009).

Treated effluent from the El Dorado Hills WWTP is discharged to Carson Creek under standards established by the Central Valley RWQCB. A portion of the effluent from the El Dorado Hills WWTP is pumped into the 1.0-million-gallon "960" storage tank south of the treatment plant. Flow are pumped from the 960 storage tank to the Silva Valley booster pump station, which pumps a maximum of 3,900 gpm, and the 2.0-million gallon "Village C" storage tank and booster pump station, which pumps a maximum of 2,600 gpm (HDR Engineering 2002:2-4). These booster pump stations provide reclaimed water for urban irrigation in the Serrano development and two golf courses. During the summer, there is sufficient recycled water demand that no flow is discharged to Carson Creek (HDR Engineering 2001:1-1.) See Section 3A.18, "Water Supply," for additional information on reclaimed water supply and uses.

SOLID WASTE

The City of Folsom Solid Waste Division provides solid waste, recycling, and hazardous materials collection services to the city. Waste is transported to the Kiefer Landfill, near the intersection of Grant Line Road and Kiefer Boulevard.

Sacramento County owns and operates the Kiefer Landfill, and the landfill is the primary solid waste disposal facility in the County. Kiefer Landfill is a total of 1,084 acres in size, with a permitted disposal area of 660 acres. Kiefer Landfill is classified as a Class III municipal solid waste landfill facility and is permitted to accept general residential, commercial, and industrial refuse for disposal, including municipal solid waste, construction and demolition debris, green materials, agricultural debris, and other nonhazardous designated debris. Kiefer Landfill produces enough renewable energy methane gas to power 9,000 homes (Sacramento County 2009a:4-2).

The landfill is permitted to accept a maximum of 10,800 tons per day (tpd) of solid waste; however, the average intake is only approximately 6,000 tpd. The Kiefer Landfill receives over 700,000 tons of waste per year

(Sacramento County 2009a:4-2). The site currently has a permitted capacity of approximately 117 million cubic yards and a remaining capacity of 113 million cubic yards. Currently, the landfill is operating below permitted capacity, and the closure date of the Kiefer Landfill is anticipated to be approximately 2064. (California Integrated Waste Management Board [CIWMB] 2008a.)

The CIWMB provides an average per-capita solid-waste disposal rate for Sacramento County of 0.36 ton per resident per year (CIWMB 2008b). Business waste disposal rates calculated by CIWMB range from 0.3 ton per year for general-merchandise stores to 3.1 tons per year for restaurants (CIWMB 2008c).

Construction of the two roadway connections into El Dorado Hills would generate temporary, short-term construction-related debris and solid waste. In El Dorado County, solid waste is disposed of at the Lockwood Regional Landfill located in Sparks, Nevada. The Lockwood Landfill is a Class I landfill that currently accepts an average of 7,700 tpd of solid waste. The existing permit does not restrict the maximum daily and yearly tonnage that may be received by the landfill, and the facility has a remaining capacity of 32.5 million tons. The landfill currently operates on 1,100-acre site, and the closure year of the landfill at 2035. (City of Sacramento 2009a:6.11-95, El Dorado County 2003:5.6-20).

Recycling Facilities

The California Integrated Waste Management Act (CIWMA) of 1989, also commonly known as Assembly Bill (AB) 939, requires local agencies to implement source reduction, recycling, and composting (see discussion under "Regulatory Framework" below). The Sacramento County Integrated Waste Management Plan, adopted in March 1996, consists of a siting element, summary plan, source reduction and recycling, household hazardous wastes, and non-disposal facility elements (Sacramento County 2009a:4-13). The countywide Integrated Waste Management Plan requires recycling programs that are expected to result in a 50% diversion away from landfills, thereby extending the life of landfills. According the 2006 Regional Waste Management Authority Annual Report, Sacramento County showed that 56% of the solid waste generated in the county was diverted from landfills through recycling, composting, and other waste diversion methods (CIWMB 2008d).

Sacramento County requires all contractors to comply with the Construction and Demolition Ordinance (Title 6, Chapter 6.20), which applies to all new commercial, office, industrial, multifamily residential, and public/quasi-public building permits over $250,000 in value (Sacramento County 2009b). The City of Folsom also requires all contractors to comply with the Construction and Demolition Recycling Ordinance (Title 8, Chapter 8.30), which requires construction and demolition contractors for projects with a valuation equal to or in excess of $100,000 to reduce all project waste by weight from entering landfill facilities by 50% through recycling (City of Folsom 2006). Covered projects must recycle five different types of debris and materials: scrap metal; inert materials (concrete, asphalt paving, bricks); corrugated cardboard; wood pallets; and clean wood waste. Both the County and City require contractors to document types of building materials and estimated quantities on a "Waste Management Plan" before obtaining building permits; within 30 days of project completion contractors must complete the "Waste Management Plan" to document the actual quantity of construction or demolition waste generated and demonstrate the actual quantities recycled, salvaged or reused, and/or disposed.

Similarly, El Dorado County requires all contractors to comply with the County's Construction and Demolition Debris Recycling Ordinance (Title 8, Chapter 8.43), which requires projects in excess of 5,000 square feet to reduce all project waste by weight from entering landfill facilities by 50% through recycling. Under this ordinance, contractors are required to submit a "Debris Recycling Acknowledgment" for review and approval at the time of submitting an application for a building permit. Within 60 days after completion and/or occupancy contractors must submit a "Debris Recycling Report" to document the actual quantity of construction or demolition wastes generated and demonstrate the actual quantities recycled, salvaged or reused, and/or disposed. (El Dorado County 2009.)

ELECTRICAL SERVICE

Sacramento Municipal Utility District (SMUD) generates, transmits, and distributes electric power to a 900-square-mile territory in Sacramento County, including the City of Folsom, and a small portion of Placer County. SMUD serves a population of 589,599 customers (522,228 residential and 67,361 commercial) with 2,226 employees, 473 miles of transmission lines (110 kilovolts [kV] or more), and 9,784 miles of distribution lines (typically 12 kV) (SMUD 2007a, 2008a). In 2007, SMUD generated approximately 10,917 million kilowatt (kW) hours of electricity within its service area (California Energy Commission [CEC] 2008a).

SMUD received approval from CEC to build the first phase of the 500-megawatt (MW) Cosumnes Power Plant (CPP), which provides the utility with 1,000 MW of power to ensure SMUD's long-range plans to meet the growing power needs of Sacramento County. The gas-fired plant, which came on line in 2006, provides enough power to meet the annual needs of 450,000 single-family homes (SMUD 2006).

In addition to the CPP, SMUD has the Upper American River Project, which consists of 11 reservoirs and eight powerhouses that generate enough electricity to meet nearly 15% of SMUD's customer demand. The Upper American River Project can provide approximately 1.8 million MW of electricity during a normal water year, which is enough energy to power about 180,000 homes (SMUD 2009).

SMUD has long-term contracts with other generators to provide an additional 1,189 MW of electricity for distribution per day. Throughout the year, SMUD buys and sells energy and capacity on a short-term basis to meet load requirements and reduce costs. In July 2006, SMUD experienced a record peak electricity daily demand of 3,299 MW (SMUD 2008b). Table 3A.16-1 shows SMUD's historic electrical consumption and forecasts of future consumption.

Table 3A.16-1
SMUD Service Area Electrical Consumption and Forecast

Year	Consumption (Gigawatt Hours)[1]
1990	8,358
2000	9,491
2005	10,523
2008	11,174
2013	12,053
2016	12,555

Note:
[1] Gigawatt equals one billion watts.
Source: CEC 2007:148

An electrical transmission corridor traverses the western portion of the SPA between U.S. Highway 50 (U.S. 50) and White Rock Road. The corridor contains one 115-kV and one 230-kV Pacific Gas & Electric Company (PG&E) double-circuit transmission lines that extend south from PG&E's Gold Hill Substation. The corridor also contains a SMUD 230-kV double-circuit transmission line that originates from SMUD's Lake Substation. The transmission line travels south from the substation and through the SPA (Capitol Utility Specialists 2009:2). Listed below are the other electrical transmission lines in the vicinity of the SPA include (Capitol Utility Specialists 2009:2 and 3).

- A 69-kV overhead single-circuit transmission line located in the south-central portion of the SPA. This transmission line travels south through the SPA for approximately 2,100 feet then turns west onto Prairie City Road.

- A 69-kV single-circuit transmission line that extends south along Prairie City Road until it reaches the point where the road curves west. The transmission line continues south approximately 7,700 feet along the west side of Prairie City Road to White Rock Road.

- A 69-kV single-circuit transmission line that extends south from U.S. 50 on the east side of Placerville Road where it terminates just within the SPA.

- A 12-kV overhead transmission line that extends north from White Rock Road along the east side of Placerville Road where it terminates with service facilities on U.S. 50.

Energy Conservation

SMUD has created two separate programs to grow renewable energy supplies for its customers: a green pricing program called Greenergy and a Renewables Portfolio Standard (RPS) program. Accounting for SMUD's renewable energy supply is done separately for these two programs and aggregated as SMUD's total, non-large hydro-renewable energy supply.

SMUD has had the green pricing program called "Greenergy" since 1997. Greenergy allows customer choice in selecting renewable energy supply for 100% or 50% of their electricity based on a simple monthly fee of $6.00 or $3.00, respectively. Commercial Greenergy customers pay $0.1 per kilowatt-hour (kWh) for 100% renewables and $0.5 per kWh for 50% renewable energy. In 2006, there were about 36,000 participating customers in the Greenergy program, of which approximately 34,000 were residential customers. (SMUD 2008b.)

SMUD's RPS program was approved by SMUD's elected board one year before the state RPS program was approved by the legislature and governor. To meet its annual renewables goals, SMUD both contracts for renewable electricity from independent power producers and builds and owns renewable energy power plants. SMUD has renewable energy supply goals of 23% for 2011 (20% RPS + 3% Greenergy in 2011). The final supply numbers compiled for 2006 show that SMUD provided about 13% of retail sales of eligible, non-large hydro-renewable electricity supply. (SMUD 2007b:2.)

SMUD has supported several new renewables projects that have begun providing electricity to the grid since 2002. The SMUD-owned Solano wind project installed wind turbines generating 39 MW in 2002, and an additional 63 MW of wind turbines were installed in 2007. This wind project is expected to have turbines generating over 200 combined megawatts installed by 2011. SMUD also recently signed a Power Purchase Agreement (PPA) contract for the second phase of the Kiefer Landfill gas-to-electricity project, which is online now and providing an additional 5.7 MW. SMUD also signed a PPA several years ago for a California wind project that came online in phases from 2003 to 2007, and it now provides a total of 75 MW. (SMUD 2007b:3.)

NATURAL GAS SERVICE

Natural gas service in Folsom is provided by PG&E through portions of PG&E's 46,000 miles of natural gas distribution pipelines. In 2007, PG&E delivered approximately 4,562 million therms (MM therms) of natural gas throughout its service area (CEC 2008b). Table 3A.16-2 shows PG&E's historic natural gas consumption and forecasts of future consumption.

Whenever possible, PG&E adds capacity in an existing easement either by replacing smaller mains with larger mains, by constructing additional mains parallel to the existing facilities, or by increasing the operating pressure of existing mains (Sacramento County 2007:69). A 10-inch natural gas distribution feeder main is located in the east side of Placerville Road. This main extends south and then east along the south side of White Rock Road and into El Dorado County (Capitol Utility Specialists 2009:4).

Table 3A.16-2 PG&E Service Area Natural Gas Consumption and Forecast	
Year	Consumption (MM Therms)
1990	5,275
2000	5,291
2005	4,724
2008	4,895
2018	5,144
Source: CEC 2007:204	

In addition, the following natural gas transmission mains are located in the vicinity of the SPA (Capitol Utility Specialists 2009:6):

- a 6-inch transmission main on the west side of Prairie City Road approximately 915 feet north of U.S. 50,
- a 4-inch transmission main on Oak Avenue approximately 1,250 feet north of U.S. 50,
- a 6-inch transmission main at the intersection of East Bidwell Street and Iron Point Road approximately 1,280 feet north of U.S. 50,
- an 8-inch transmission main on Placerville Road north of U.S. 50, and
- a 6-inch transmission main at Stonebriar Road and White Rock Road.

PG&E has several natural gas regulator stations that could serve the SPA. Regulator stations in the vicinity of the SPA are located on East Bidwell Street at Oak Avenue, on Blue Ravine Road at Riley Street, and at Stonebriar Drive and White Rock Road in El Dorado County (Capitol Utility Specialists 2009:6).

TELECOMMUNICATIONS

AT&T Inc. (AT&T) would be provided telecommunications service to the SPA. Currently, there are no existing telephone lines in the SPA. AT&T has existing underground telephone lines extending east from Prairie City Road along both side of White Rock Road. In addition, AT&T has existing overhead fiber optic cable that extends west from the El Dorado County line and parallels U.S. 50 on the south side where it connects to SMUD's 12kV overhead transmission line. (Capitol Utility Specialists 2009.)

CABLE TELEVISION AND COMMUNICATIONS

Comcast would provide cable television and communications service to the SPA. Comcast serves the city with a combination of underground and overhead fiber-optic cable and copper coaxial cable. Additional improvements or relocations of hub sites are generally made as the need arises to meet customer demand.

Currently, there are no existing cable television and communications facilities in the SPA. In the vicinity of the SPA, Comcast has existing facilities on Prairie City Road and along Iron Point Road north of U.S. 50 (Capitol Utility Specialists 2009:8).

3A.16.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

There are no Federal plans, policies, regulations, or laws related to utilities and service systems that apply to the Proposed Project or alternatives under consideration.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

California Integrated Waste Management Act

To minimize the amount of solid waste that must be disposed of by transformation and land disposal, the California Legislature passed the CIWMA of 1989 (AB 939), effective January 1990 (CIWMB 2007). According to the CIWMA, all cities and counties were required to divert 25% of all solid waste from landfill facilities by January 1, 1995, and 50% by January 1, 2000. Each city is required to develop solid waste plans demonstrating integration of the CIWMA plan with the county plan. The plans must promote (in order of priority) source reduction, recycling and composting, and environmentally safe transformation and land disposal.

California Public Utilities Commission Decision 95-08-038

The California Public Utilities Commission (CPUC) Decision 95-08-038 contains the rules for the planning and construction of new transmission facilities, distribution facilities, and substations. The decision requires permits for the construction of certain power line facilities or substations if the voltages would exceed 50 kV or if the substation would require the acquisition of land or an increase in voltage rating above 50 kV. Distribution lines and substations with voltages less than 50 kV do not need to comply with this decision; however, the utility must obtain any nondiscretionary local permits required for the construction and operation of these projects. CEQA compliance is required for construction of facilities constructed in accordance with the decision.

California Building Energy Efficiency Standards

The project would be required to comply with changes to Title 24 of the California Code of Regulations regarding energy efficiency that became effective on October 1, 2005. These new energy efficiency standards were developed in response to the state's energy crisis as well as AB 970 (Chapter 329, Statutes of 2000), the California Energy and Reliability Act of 2000. The goals of the recent changes to Title 24 are to improve the energy efficiency of residential and nonresidential buildings, minimize impacts during peak energy-usage periods, and reduce impacts on overall state energy needs.

Implementation of these standards is expected to reduce the growth in electricity use by 478 gigawatt-hours per year (GWh/y) and reduce the growth in natural gas use by 8.8 million therms per year. The savings attributable to new nonresidential buildings are 163.2 GWh/y of electricity savings and are expected to reduce the growth in electricity use by 478 GWh/y and reduce the growth in natural gas use by 8.8 MM therms per year. The savings attributable to new nonresidential buildings are 163.2 GWh/y of electricity savings and 0.5 MM therms. Additional savings result from the application of the standards on building alterations. In particular, requirements for cool roofs, lighting, and air distribution ducts are expected to save about 175 GWh/y of electricity.

In addition, the 2008 California Building Code (Part 11 of Title 24) standards were adopted on July 1, 2008 and became effective on August 1, 2009. This code was developed to enhance the design and construction of buildings and sustainable construction practices through planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental air quality. It is the intent of this code to encourage green buildings to achieve to achieve more than a 15% reduction in energy usage when compared to existing standards, to reduce indoor potable water demand by 20%, to reduce landscape water usage by 50%, and to reduce construction waste by 50%.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

Sacramento County General Plan

There are no goals and policies of the Sacramento County General Plan (1993) that are applicable to the Proposed Project or alternatives under consideration.

El Dorado County General Plan

There are no goals and policies of the El Dorado County General Plan (2004) that are applicable to the Proposed Project or alternatives under consideration.

City of Folsom General Plan

The following goals and policies of the City of Folsom General Plan (1988) are applicable to the Proposed Project and the other four action alternatives. There are no City of Folsom goals and policies that would apply to the No Project Alternative.

Housing Element

GOAL 22: To promote energy conservation.

- **Policy 22.2:** Include energy conservation guidelines as part of the development standards for the specific plan area.

Public Facilities Element

GOAL 40: To set targets for ultimate build-out of the City, to plan for the provision of public facilities and services to meet this level of development, and to phase development according to the capacity of public facilities and services to meet those targets.

- **Policy 40.1:** No permit for construction shall be issued for any new development not served by existing municipal facilities until the following conditions have been met:
    - The applicant can provide for the installation and/or financing (through fees or other means) of needed public facilities.
    - The project is included in the area covered by an existing facilities plan approved by the City.
    - The project can be served by on-site or private facilities meeting City and County health and safety requirements.
- **Policy 40.2:** The City shall require the preparation of a facilities plan for an identified area when:
    - Development of an area necessitates the provision, extension, and/or expansion of municipal services and facilities which are not customarily constructed by a developer, or
    - There is a need for services or facilities not otherwise funded by regular City fees, or
    - The construction of the necessary services and facilities cannot be logically or economically provided by one landowner/development in the normal sequence of orderly development.
- **Policy 40.3:** An area facilities plan shall include, but not limited to the following:

- Description of the plan area, the basis for the selection of the proposed boundaries, and the development potential of the area which is based on a comprehensive land use map.

- A statement of the plan's consistency with the Folsom General plan and the City's Urban Development Policy.

- Identification of the nature and extent of facilities necessary to serve the area and a schedule of estimated time within which facilities must be constructed.

- Engineer's estimate of the total cost of such improvements (including plan preparation).

- A plan for the equitable apportionment of costs among benefited properties and adjustments thereof based on the time such costs are paid.

- The nature of the obligation of each land-owner or developer.

- Discussion of the options available to finance the improvements including, but not limited to, construction by developers.

- Provisions for amendments to the plan which may result from changes in the plan area, development patterns, etc.

- Provisions to refund or reimburse landowners who construct facilities with capacity beyond the ultimate need of their developments.

- A statement which recognizes that the financial commitments required pursuant to such plans are not in lieu of other municipal service and facilities fees. The financial commitments of landowners/developers shall be taken into account by the City in determining the extent of the imposition of such other municipal service and facilities fees.

- A statement which recognizes that the area facilities plan is not intended to be responsible for the provision of all possible public facilities that will be needed in the future and that there are or may be additional costs/fees established by the City and other jurisdictions (such a school district) that may apply to the area. However, the plan must address the need for public facilities which may reasonably be assumed to be necessary during buildout of the area.

- Provisions for administration of the area plan and the collection and distribution of funds.

► **Policy 40.4:** All new development projects shall be planned for an urban level of services:

- Sanitary sewer lines of appropriate size to accommodate the project and that will tie into the City's main lines.

3A.16.3 Environmental Consequences and Mitigation Measures

Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G, and based on Appendix F as related to energy, of the State CEQA Guidelines. These thresholds also encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. The Proposed Project or alternatives under consideration were determined to result in a significant impact related to utilities and service systems if they would do any of the following:

- exceed wastewater treatment requirements of the applicable RWQCB;
- require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- result in a determination by the wastewater treatment provider that serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- generate solid waste beyond the capacity of existing landfills;
- violate Federal, state, or local statutes and regulations related to solid waste; or
- result in inefficient, wasteful, and unnecessary consumption of energy.

ANALYSIS METHODOLOGY

Impacts on utilities and service systems that would result from implementation of the Proposed Project and alternatives under consideration were identified by comparing existing service capacity and facilities against future demand associated with project implementation. Evaluation of potential utility and service systems impacts was based on a review of the following documents pertaining to the SPA and surrounding area:

- *Sacramento County General Plan* (Sacramento County 1993),
- *Sacramento County General Plan Background to the 1993 General Plan and 2007 General Plan Update* (Sacramento County 2007),
- *Sacramento County General Plan Update DEIR* (Sacramento County 2009),
- *City of Folsom General Plan* (City of Folsom 1988),
- *Wastewater Infrastructure Plan for the Folsom Specific Plan Area* (MacKay & Somps 2008a, provided in Appendix K1),
- *Addendum No. 1. Wastewater Infrastructure Plan for the Folsom Specific Plan Area* (MacKay & Somps 2008b, provided in Appendix K2),
- *Wastewater Master Plan Update for El Dorado Irrigation District* (HDR Engineering 2001),
- *Sacramento Regional County Sanitation District Interceptor Master Plan 2000, Final Program Environmental Impact Report* (SCH No. 2001112085) (SRCSD 2003a),
- *Sacramento Regional County Sanitation District Interceptor System Master Plan 2000* (SRCSD 2003b),
- *Sacramento Regional Wastewater Treatment Plant 2020 Master Plan Final Environmental Impact Report* (SCH No. 2002052004) (SRCSD 2004),
- *Sacramento Regional Wastewater Treatment Plant 2020 Master Plan* (SRCSD 2001), and
- *Folsom Plan Area Technical Dry Utilities Study* (Capitol Utility Specialists 2009, provided in Appendix G11).

Additional information was obtained through consultation with appropriate agencies, including SRCSD, EID, SMUD, PG&E, and field review of the SPA and surroundings.

Where possible, a quantitative comparison was used to determine impacts of the project on future demands. Tables 3A.16-3, 3A.16-4, and 3A.16-5 summarize wastewater generation, solid waste generation, and electrical and natural gas service demands, respectively.

Table 3A.16-3
Folsom South of U.S. 50 Specific Plan Wastewater Generation Rates

Alternative	Wastewater Generated in the SRCSD Service Area		Wastewater Generated in the EID Service Area	
	Average Dry-Weather Flow (mgd)	Peak Wet-Weather Flow (mgd)	Average Dry-Weather Flow (mgd)	Peak Wet-Weather Flow (mgd)
Proposed Project	5.58	11.99	0.28	0.70
Resource Impact Minimization	4.24	9.38	0.22	0.55
Centralized Development	4.59	9.96	0.05	0.14
Reduced Hillside Development	5.66	11.96	0.23	0.59
No USACE Permit	3.83	8.58	0.31	0.78

Notes: mgd = million gallons per day
Development of residences under the No Project Alternative would use on-site septic systems for wastewater treatment.
Source: MacKay & Somps 2008b; Zoller, pers. comm. 2009

Table 3A.16-4
Folsom South of U.S. 50 Specific Plan Solid Waste Generation Rates

Alternative	Residential Waste (tpd) [1]	Business Waste (tpd) [2]	Total (tpd)
No Project	0.1	--	0.1
Proposed Project	24.0	65.1	89.1
Resource Impact Minimization	19.3	48.0	67.3
Centralized Development	20.4	83.1	103.5
Reduced Hillside Development	24.7	86.2	110.9
No USACE Permit	15.6	64.2	79.8

Notes: tpd = tons per day
[1] Based on CIWMB's average per-capita solid-waste disposal rate for Sacramento County of 0.36 ton per resident per year.
[2] The business waste–disposal rate calculated by CIWMB for project development was based on an average of 1.8 tons per year per employee.
Source: Data compiled by AECOM in 2010

IMPACT ANALYSIS

Impacts that would occur under each alternative development scenario are identified as follows: NP (No Project), NCP (No USACE Permit), PP (Proposed Project/Action), RIM (Resource Impact Minimization), CD (Centralized Development), and RHD (Reduced Hillside Development). The impacts for each alternative are compared relative to the PP at the end of each impact conclusion (i.e., similar, greater, lesser).

Table 3A.16-5 Folsom South of U.S. 50 Specific Plan Electrical and Natural Gas Demands			
Alternative	Electrical Demand		Natural Gas Demand [1]
	Average Demand (MVA)	Peak Demand (MVA)	Peak Demand (MCFH)
No Project	0.1	0.2	2.2
Proposed Project	39.7	87.3	818.3
Resource Impact Minimization	34.5	75.9	694.2
Centralized Development	45.1	97.1	837.7
Reduced Hillside Development	52.0	111.5	978.6
No USACE Permit	35.7	78.0	655.9

Notes: MVA = megavolt amperes, MCFH = thousand cubic feet per hour

[1] No average natural gas demand was provided for the Proposed Project Alternative.

Source: Capitol Utility Specialists 2009

IMPACT 3A.16-1 Increased Demand for On-Site Wastewater Collection and Conveyance Facilities and the Off-Site Force Main. *Project implementation would result in increased generation of wastewater.*

On-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80, and no off-site water facilities would be constructed. These residences would require the use of on-site septic systems. Therefore, the 44 individual rural residences that could be built under the No Project Alternative would not increase demand for municipal wastewater collection and conveyance facilities and there would be **no direct** or **indirect** impacts. See Section 3A.7, "Geology, Soils, Mineral, and Paleontological Resources - Land," for a discussion of the suitability of soils for use with septic systems. ***[Lesser]***

NCP, PP, RIM, CD, RHD

The SPA is presently not served by municipal wastewater collection and treatment systems, and therefore the project would require construction of on-site wastewater collection and conveyance facilities and an off-site force main.

The wastewater infrastructure plan prepared for the Proposed Project Alternative (MacKay & Somps 2008a) addressed the viability of providing sewer service to the SPA, identified on- and off-site facility needs and design, and evaluated designs for consistency with existing interceptor sewer master plans. The wastewater infrastructure plan presents options for the ultimate sewer conveyance facilities. However, detailed sewer master plans have not been completed. It is anticipated that additional work would be performed to define force mains, trunk, and major collectors; identify phased construction of facilities; and design tentative maps, including collector and lateral systems, to serve each lot. The following discussion provides an overview of the future facilities identified by the conceptual wastewater infrastructure plan (attached as Appendix K).

The sizing and design of the on-site sewer pipelines and pump stations and the off-site force main are based on Sacramento Area Sanitation District design standards. The on-site sanitary sewer system would consist of gravity pipelines and force mains ranging in size from 8 inches to 30 inches in diameter, and where possible, would be

installed at a depth of less than 20 feet. The proposed on-site sewer system and off-site force main would be sized to accommodate planned sewer flows.

Lands within the EID service area and a sub-shed east of Empire Ranch Road would be served by three pump stations. The East Sanitary Sewer Pump Station would be located at the northwest corner of White Rock Road and Empire Ranch Road, Pump Station 3 would be located at the eastern boundary of the SPA near Stonebriar Court, and Pump Station 4 would be located at the eastern boundary of the SPA near Winterfield Court. A combination of force mains and gravity sewers would convey wastewater south along the eastern boundary of the SPA to the East Sanitary Pump Station.

Sewer flows from the EID service area would be conveyed to an existing pump station at the intersection of White Rock Drive and Winterfield Drive and ultimately conveyed to the El Dorado Hills WWTP (see Impact 3A.16-5).

Sewer flows from the SRCSD service area would be conveyed to the Folsom South Pump Station north of Easton Valley Parkway and approximately 1,500 feet west of Oak Avenue. From the Folsom South Pump Station, the project would construct an off-site force main to convey flows to an existing SRCSD 24-inch force main located within Iron Point Road, north of U.S. 50, and downstream of the existing Folsom East 3B Pump Station (see Impact 3A.16-3).

Because the SPA is not served by a municipal wastewater collection system and sufficient on-site wastewater collection and conveyance infrastructure and the off-site force main necessary to serve the project have not been constructed, nor have final design plans and specifications been submitted, this is a **direct, potentially significant** impact. The **indirect** physical impacts of constructing these facilities are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development. ***[Similar]***

> Mitigation Measure 3A.16-1: Submit Proof of Adequate On- and Off-Site Wastewater Conveyance Facilities and Implement On- and Off-Site Infrastructure Service Systems or Ensure That Adequate Financing Is Secured.
>
> Before the approval of the final map and issuance of building permits for all project phases, the project applicant(s) of all project phases shall submit proof to the City of Folsom that an adequate wastewater conveyance system either has been constructed or is ensured through payment of the City's facilities augmentation fee as described under the Folsom Municipal Code Title 3, Chapter 3.40, "Facilities Augmentation Fee – Folsom South Area Facilities Plan," or other sureties to the City's satisfaction. Both on-site wastewater conveyance infrastructure and off-site force main sufficient to provide adequate service to the project shall be in place for the amount of development identified in the tentative map before approval of the final map and issuance of building permits for all project phases, or their financing shall be ensured to the satisfaction of the City.
>
> **Implementation:** The project applicant(s) of all project phases.
>
> **Timing:** Before approval of final maps and issuance of building permits for any project phases.
>
> **Enforcement:** City of Folsom Community Development Department and City of Folsom Public Works Department.

Off-Site Elements

The sewer force main would provide the necessary infrastructure needed to provide wastewater service to the SPA, and construction of the off-site freeway interchange improvements, sewer force main, and the detention basin in Sacramento County, and the two roadway connections into El Dorado Hills would not involve construction of new housing or development of new businesses that would increase demand for wastewater

collection and conveyance facilities. Therefore, the off-site elements would have a **direct, less-than-significant** impact on the demand additional wastewater collection and conveyance facilities. The **indirect** physical impacts of constructing the sewer force main are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

Implementation of Mitigation Measure 3A.16-1 would reduce significant impacts associated with increased demand for on-site wastewater collection facilities under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives to a **less-than-significant** level because adequate wastewater conveyance facilities would be documented or adequate financing would be secured before approval final maps and issuance of building permits.

IMPACT 3A.16-2 Increased Demand for SRCSD Off-Site Wastewater Collection and Conveyance Facilities. *The wastewater generated within the 3,313-acre SRCSD service area would require off-site collection facilities to the Folsom East Interceptor.*

On-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80, and no off-site water facilities would be constructed. These residences would require the use of on-site septic systems. Therefore, the 44 individual rural residences that could be built under the No Project Alternative would not increase demand for municipal wastewater collection and conveyance facilities and there would be **no direct** or **indirect** impacts. See Section 3A.7, "Geology, Soils, Mineral, and Paleontological Resources - Land," for a discussion of the suitability of soils for use with septic systems. ***[Lesser]***

NCP, PP, RIM, CD, RHD

The wastewater generated within the 3,313-acre SRCSD service area would ultimately be conveyed to the Folsom South Pump Station north of Easton Valley Parkway and approximately 1,500 feet west of Oak Avenue (see Exhibit 2-6 in Chapter 2, "Alternatives"). From the Folsom South Pump Station, the project would construct an off-site force main to convey flows to an existing SRCSD 24-inch force main located within Iron Point Road north of U.S. 50 and downstream of the existing Folsom East 3B Pump Station. The existing 24-inch force main is currently a dry pipeline and was constructed as part of SRCSD's Folsom East Interceptor project for future use by the project. The existing 24-inch force main travels west in Iron Point Road to the intersection of Iron Point Road and McAdoo Road, where it connects to the 36-inch Folsom East Interceptor Section 3A gravity pipeline. Wastewater flow would ultimately be conveyed to the SRWTP.

SRCSD has designed and constructed the Folsom East Interceptor to serve the project, and this facility would be adequate to serve wastewater generated by the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives; therefore, the increased demand for SRCSD off-site wastewater collection and conveyance facilities would be a **direct, less-than-significant** impact. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

Off-Site Elements

Construction of the off-site freeway interchange improvements, sewer force main, and the detention basin in Sacramento County, and the two roadway connections into El Dorado Hills would not involve construction of new housing or development of new businesses that would increase demand for off-site SRCSD wastewater collection and conveyance facilities. Therefore, the off-site elements would have **no direct** or **indirect** impacts.

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.16-3 Increased Demand for SRWTP Wastewater Treatment Plant Facilities. *Project implementation would result in increased generation of wastewater. Collected wastewater flows from the 3,313-acre SRCSD portion of the SPA would ultimately be transported to the SRWTP for treatment and disposal.*

On-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80, and no off-site water facilities would be constructed. These residences would require the use of on-site septic systems. Therefore, the 44 individual rural residences that could be built under the No Project Alternative would not increase demand for municipal wastewater treatment facilities and there would be **no direct** or **indirect** impacts. See Section 3A.7, "Geology, Soils, Mineral, and Paleontological Resources - Land," for a discussion of the suitability of soils for use with septic systems. ***[Lesser]***

NCP

As shown in Table 3A.16-3, implementation of the No USACE Permit Alternative would generate 3.83 mgd of average dry-weather flow, and 8.58 mgd peak wet-weather flow (MacKay & Somps 2008b; Zoller, pers. comm.). The No USACE Permit Alternative average-dry weather flow would be 1.75 mgd and peak-wet weather flow would be 3.41 mgd less than the Proposed Project Alternative.

The wastewater flows generated by the SPA, including the 189-acrea portion of the SPA that would be served by EID, have been planned for in the SRCSD Master Plan 2000. The master plan estimates that buildout of the SPA would generate an average dry-weather flow of 6.82 mgd a peak wet-weather flow of 14.48 mgd (SRCSD 2003b: Table 3-1). Because 189 acres of the SPA would be served by EID, the No USACE Permit Alternative average-dry weather flow would be 2.99 mgd and peak-wet weather flow would be 5.9 mgd less than those identified in the SRCSD Master Plan 2000.

Collected wastewater flows from the SPA would ultimately be transported to the SRWTP for treatment and disposal. The 2020 Master Plan provides for the expansion of the SRWTP to 218 mgd based on growth rates expected to be achieved in the Sacramento County region by 2020. This projected capacity specifically includes project-related wastewater flows through 2020. At the time the 2020 Master Plan EIR was prepared, it was assumed that flows would increase from 155 mgd and would surpass 181 mgd by 2007. However, flows to the SRWTP have consistently decreased between 2000 and 2008 from 155 mgd to 141 mgd. The reason for reduced flows is a result of water conservation efforts over the last 10 years. In addition, State legislation passed in 2009 and the SRCSD commitment to promote water supply reliability and Delta sustainability would substantially reduce the amount of wastewater generated in the future.

Note that this total does not represent a buildout population total for SRCSD; rather, it represents the amount of growth expected within SRCSD based on projections. The SRCSD has determined that growth within the district is less than what was projected in the 2020 master plan and the SRWTP can provide capacity to future development beyond what was originally anticipated. If substantial population growth or new development occurs before 2020, the SRCSD will reevaluate expansion needs and phase treatment plant expansion to provide for sufficient long-term capacity.

SCRSD prepared the *Sacramento Regional Wastewater Treatment Plant 2020 Master Plan Final Environmental Impact Report* (SRCSD 2004). As described above, the EIR was determined to be legally deficient by the Sacramento Superior Court and the judgment has been appealed. The legal effect of the pending appeal is to stay the Superior Court's determination of legal deficiency. Thus, this EIR/EIS summarizes below and incorporates by reference the significant impacts that were identified in the 2020 Master Plan EIR as they relate to the project.

Because there is a relationship between the project and the need for expansion the SRWTP, implementation of the No USACE Permit Alternative would contribute indirectly and incrementally to the related impacts (described above), most of which would be reduced to a less-than-significant level through implementation of mitigation measures. The only significant and unavoidable impact related to the treatment plant that was identified would be from short-term increases in NO_X during construction of SRWTP facilities. In addition to these impacts, there is a potential that new significant impacts to water quality could be identified if the EIR for the SRWTP is found inadequate and impacts are reanalyzed. It is too speculative to draw any such conclusion at this point since additional studies would be required to substantiate any new significant impacts.

Because the SRWTP is planned to accommodate growth in Sacramento regional area by 2020, development in the SPA that occurs by 2020 would be accommodated by planned SRWTP capacity. Over time, additional planning at the SRWTP would occur, and overall capacity would be assessed and additional capacity planned for and added. There is expected to be sufficient SRWTP capacity to accommodate project flows under the No USACE Permit Alternative through 2020. However, there would be no assurances that the SRWTP would have adequate capacity for new wastewater flows for project development occurring after 2020. Therefore, the potential lack of treatment capacity past 2020 at full project buildout is a **direct, potentially significant** impact. The No USACE Permit Alternative would also contribute to the need to expand the facility and therefore would contribute **indirectly** to the **significant and unavoidable** short-term impact related to air quality from expansion of the SRWTP identified in the 2020 Master Plan EIR. ***[Lesser]***

Mitigation Measure 3A.16-3: Demonstrate Adequate SRWTP Wastewater Treatment Capacity.

The project applicant(s) of all project phases shall demonstrate adequate capacity at the SRWTP for new wastewater flows generated by the project. This shall involve preparing a tentative map–level study and paying connection and capacity fees as identified by SRCSD. Approval of the final map and issuance of building permits for all project phases shall not be granted until the City verifies adequate SRWTP capacity is available for the amount of development identified in the tentative map.

Implementation: The project applicant(s) of all project phases.

Timing: Before approval of final maps and issuance of building permits for any project phases.

Enforcement: City of Folsom Community Development Department and City of Folsom Public Works Department.

PP

As shown in Table 3A.16-3, implementation of the Proposed Project Alternative would generate 5.58 mgd of average dry-weather flow and 11.99 mgd peak wet-weather flow within the SRCSD service area (MacKay & Somps 2008b).

The wastewater flows generated by the Proposed Project Alternative, including the 189-acrea portion of the SPA that would be served by EID, have been planned for in the SRCSD Master Plan 2000. The master plan estimates that buildout of the SPA would generate an average dry-weather flow of 6.82 mgd and a peak wet-weather flow of 14.48 mgd (SRCSD 2003b:Table 3-1). Because 189 acres of the SPA would be served by EID, the project-related average-dry weather flow would be 1.24 mgd and peak-wet weather flow would be 2.59 mgd less than those identified in the SRCSD Master Plan 2000.

Collected wastewater flows from the 3,313-acre SRCSD portion of the SPA would ultimately be transported to the SRWTP for treatment and disposal. The SRWTP receives and treats an average of 141 mgd (as of 2008) and has a permitted dry-weather flow design capacity of 181 mgd. Flows to the SRWTP would increase over time as the population in the SRCSD service area increases. At the time the 2020 Master Plan EIR was prepared, it was assumed that flows would increase from 155 mgd and would surpass 181 mgd by 2007. However, flows to the SRWTP have decreased between 2000 and 2008 from 155 mgd to 141 mgd.

As discussed above, SCRSD prepared the *Sacramento Regional Wastewater Treatment Plant 2020 Master Plan Final Environmental Impact Report* (SRCSD 2004), which was determined to be legally deficient by the Sacramento Superior Court. The judgment has been appealed, and a decision by the 3rd District Court of Appeals on the adequacy of the EIR is not expected until 2010. The Court of Appeal could overturn or uphold the Superior Court's determination in whole or in part. The legal effect of the pending appeal is to stay the Superior Court's determination of legal deficiency. Thus, this EIR/EIS summarizes below and incorporates by reference the significant impacts that were identified in the 2020 Master Plan EIR as they relate to this project.

The 2020 Master Plan, which was approved in 2004, provides for expansion of the SRWTP to 218 mgd based on growth rates expected to be achieved in the Sacramento County region by 2020. This projected capacity specifically includes project-related wastewater flows through 2020. Note that this total does not represent a buildout population total for SRCSD; rather, it represents the amount of growth expected within SRCSD based on projections. The SRCSD has determined that growth within the district is less than what was projected in the 2020 master plan and the SRWTP can provide capacity to future development beyond what was originally anticipated. If substantial population growth or new development occurs before 2020, the SRCSD will reevaluate expansion needs and phase treatment plant expansion to provide for sufficient long-term capacity.

Because there is a relationship between the project and the need for expansion of the SRWTP, implementation of the Proposed Project Alternative would contribute indirectly and incrementally to the related impacts. As described in the 2020 Master Plan EIR (which is incorporated by reference herein), construction and operation of the expanded SRWTP would result in several environmental impacts, and all but one impact would be reduced to a less-than-significant level through implementation of mitigation measures (including impacts on water quality, hydrology, fisheries, traffic, and noise). The only significant and unavoidable impact related to the treatment plant that was identified would be from short-term increases in nitrogen oxide (NO_X) during construction of SRWTP facilities.

In addition to these impacts, there is a potential that new significant impacts to water quality could be identified if the EIR for the SRWTP is found inadequate and impacts are reanalyzed. It is too speculative to draw any such conclusion at this point since additional studies would be required to substantiate any new significant impacts.

Because the SRWTP is planned to accommodate growth in Sacramento regional area by 2020, development in the SPA that occurs by 2020 would be accommodated by planned SRWTP capacity. Over time, additional planning at the SRWTP would occur, and overall capacity would be assessed and additional capacity planned for and added.

The SRWTP site has sufficient land area to accommodate a substantially higher flow than 218 mgd; however, future plans beyond the next 12 years are speculative.

There is expected to be sufficient SRWTP capacity to accommodate project flows under the Proposed Project, Resource Impact Minimization, Centralized Development, Reduced Hillside Development, and No USACE Permit Alternatives through 2020. There would be no assurances that the SRWTP would have adequate capacity for new wastewater flows for project development occurring after 2020. Therefore, the potential lack of treatment capacity past 2020 at full project buildout is a **direct, potentially significant** impact. The project would also contribute to the need to expand the facility and therefore would contribute **indirectly** to the **significant and unavoidable** short-term impact related to air quality from expansion of the SRWTP identified in the 2020 Master Plan EIR.

Mitigation Measure: Implement Mitigation Measure 3A.16-3.

RIM

As shown in Table 3A.16-3, implementation of the Resource Impact Minimization Alternative would generate 4.24 mgd of average dry-weather flow, and 9.38 mgd peak wet-weather flow (MacKay & Somps 2008b; Zoller, pers. comm.). The Resource Impact Minimization Alternative average-dry weather flow would be 1.34 mgd and peak-wet weather flow would be 2.61 mgd less than the Proposed Project Alternative.

The wastewater flows generated by the SPA, including the 189-acrea portion of the SPA that would be served by EID, have been planned for in the SRCSD Master Plan 2000. The master plan estimates that buildout of the SPA would generate an average dry-weather flow of 6.82 mgd a peak wet-weather flow of 14.48 mgd (SRCSD 2003b:Table 3-1). Because 189 acres of the SPA would be served by EID, the Resource Impact Minimization Alternative average-dry weather flow would be 2.58 mgd and peak-wet weather flow would be 5.1 mgd less than those identified in the SRCSD Master Plan 2000.

Collected wastewater flows from the SPA would ultimately be transported to the SRWTP for treatment and disposal. The 2020 Master Plan provides for the expansion of the SRWTP to 218 mgd based on growth rates expected to be achieved in the Sacramento County region by 2020. This projected capacity specifically includes project-related wastewater flows through 2020. At the time the 2020 Master Plan EIR was prepared, it was assumed that flows would increase from 155 mgd and would surpass 181 mgd by 2007. However, flows to the SRWTP have decreased between 2000 and 2008 from 155 mgd to 141 mgd.

Note that this total does not represent a buildout population total for SRCSD; rather, it represents the amount of growth expected within SRCSD based on projections. The SRCSD has determined that growth within the district is less than what was projected in the 2020 master plan and the SRWTP can provide capacity to future development beyond what was originally anticipated. If substantial population growth or new development occurs before 2020, the SRCSD will reevaluate expansion needs and phase treatment plant expansion to provide for sufficient long-term capacity.

SCRSD prepared the *Sacramento Regional Wastewater Treatment Plant 2020 Master Plan Final Environmental Impact Report* (SRCSD 2004). As described above, the EIR was determined to be legally deficient by the Sacramento Superior Court and the judgment has been appealed. The legal effect of the pending appeal is to stay the Superior Court's determination of legal deficiency. Thus, this EIR/EIS summarizes below and incorporates by reference the significant impacts that were identified in the 2020 Master Plan EIR as they relate to the project.

Because there is a relationship between the project and the need for expansion the SRWTP, implementation of the Resource Impact Minimization Alternative would contribute indirectly and incrementally to the related impacts (described above), most of which would be reduced to a less-than-significant level through implementation of mitigation measures. The only significant and unavoidable impact related to the treatment plant that was

identified would be from short-term increases in NO_X during construction of SRWTP facilities. In addition to this impact, there is a potential that new significant impacts to water quality could be identified if the EIR for the SRWTP is found inadequate and impacts are re-analyzed. It is too speculative to draw any such conclusion at this point since additional studies would be required to substantiate any new significant impacts.

Because the SRWTP is planned to accommodate growth in the Sacramento regional area by 2020, development in the SPA that occurs by 2020 would be accommodated by planned SRWTP capacity. Over time, additional planning at the SRWTP would occur, and overall capacity would be assessed and additional capacity planned for and added. There is expected to be sufficient SRWTP capacity to accommodate project flows under the Resource Impact Minimization Alternative through 2020. There would be no assurances that the SRWTP would have adequate capacity for new wastewater flows for project development occurring after 2020. Therefore, the potential lack of treatment capacity past 2020 at full project buildout is **direct** and **potentially significant**. The Resource Impact Minimization Alternative would also contribute to the need to expand the SRWTP facility and therefore would contribute **indirectly** to the **significant and unavoidable** short-term impact related to air quality from expansion of the SRWTP identified in the 2020 Master Plan EIR. ***[Lesser]***

Mitigation Measure: Implement Mitigation Measure 3A.16-3.

CD

As shown in Table 3A.16-3, implementation of the Centralized Development Alternative would generate 4.59 mgd of average dry-weather flow, and 9.96 mgd peak wet-weather flow (MacKay & Somps 2008b; Zoller, pers. comm.). The Centralized Development Alternative average-dry weather flow would be 0.99 mgd and peak-wet weather flow would be 2.03 mgd less than the Proposed Project Alternative.

The wastewater flows generated by the SPA, including the 189-acrea portion of the SPA that would be served by EID, have been planned for in the SRCSD Master Plan 2000. The master plan estimates that buildout of the SPA would generate an average dry-weather flow of 6.82 mgd a peak wet-weather flow of 14.48 mgd (SRCSD 2003b: Table 3-1). Because 189 acres of the SPA would be served by EID, the Centralized Development Alternative average-dry weather flow would be 2.23 mgd and peak-wet weather flow would be 4.52 mgd less than those identified in the SRCSD Master Plan 2000.

Collected wastewater flows from the SPA would ultimately be transported to the SRWTP for treatment and disposal. The 2020 Master Plan provides for the expansion of the SRWTP to 218 mgd based on growth rates expected to be achieved in the Sacramento County region by 2020. This projected capacity specifically includes project-related wastewater flows through 2020. At the time the 2020 Master Plan EIR was prepared, it was assumed that flows would increase from 155 mgd and would surpass 181 mgd by 2007. However, flows to the SRWTP have decreased between 2000 and 2008 from 155 mgd to 141 mgd.

Note that this total does not represent a buildout population total for SRCSD; rather, it represents the amount of growth expected within SRCSD based on projections. The SRCSD has determined that growth within the district is less than what was projected in the 2020 master plan and the SRWTP can provide capacity to future development beyond what was originally anticipated. If substantial population growth or new development occurs before 2020, the SRCSD will reevaluate expansion needs and phase treatment plant expansion to provide for sufficient long-term capacity.

SCRSD prepared the *Sacramento Regional Wastewater Treatment Plant 2020 Master Plan Final Environmental Impact Report* (SRCSD 2004). As described above, the EIR was determined to be legally deficient by the Sacramento Superior Court and the judgment has been appealed. The legal effect of the pending appeal is to stay the Superior Court's determination of legal deficiency. Thus, this EIR/EIS summarizes below and incorporates by reference the significant impacts that were identified in the 2020 Master Plan EIR as they relate to the project.

Because there is a relationship between the project and the need for expansion the SRWTP, implementation of the Centralized Development Alternative would contribute indirectly and incrementally to the related impacts (described above), most of which would be reduced to a less-than-significant level through implementation of mitigation measures. The only significant and unavoidable impact related to the treatment plant that was identified would be from short-term increases in NO_X during construction of SRWTP facilities. In addition to these impacts, there is a potential that new significant impacts to water quality could be identified if the EIR for the SRWTP is found inadequate and impacts are reanalyzed. It is too speculative to draw any such conclusion at this point since additional studies would be required to substantiate any new significant impacts.

Because the SRWTP is planned to accommodate growth in Sacramento regional area by 2020, development in the SPA that occurs by 2020 would be accommodated by planned SRWTP capacity. Over time, additional planning at the SRWTP would occur, and overall capacity would be assessed and additional capacity planned for and added. There is expected to be sufficient SRWTP capacity to accommodate project flows under the Centralized Development Alternative through 2020. However, there would be no assurances that the SRWTP would have adequate capacity for new wastewater flows for project development occurring after 2020. Therefore, the potential lack of treatment capacity past 2020 at full project buildout is a **direct, potentially significant** impact. The Centralized Development Alternative also would contribute to the need to expand the facility and therefore would contribute **indirectly** to the **significant and unavoidable** short-term impact related to air quality from expansion of the SRWTP identified in the 2020 Master Plan EIR. ***[Lesser]***

Mitigation Measure: Implement Mitigation Measure 3A.16-3.

RHD

As shown in Table 3A.16-3, implementation of the Reduced Hillside Development Alternative would generate 5.66 mgd of average dry-weather flow, and 11.96 mgd peak wet-weather flow (MacKay & Somps 2008b; Zoller, pers. comm.). The Reduced Hillside Development Alternative average-dry weather flow would be 0.08 mgd more than the Proposed Project Alternative and peak-wet weather flow would be 0.03 mgd less than the Proposed Project Alternative.

The wastewater flows generated by the SPA, including the 189-acrea portion of the SPA that would be served by EID, have been planned for in the SRCSD Master Plan 2000. The master plan estimates that buildout of the SPA would generate an average dry-weather flow of 6.82 mgd a peak wet-weather flow of 14.48 mgd (SRCSD 2003b:Table 3-1). Because 189 acres of the SPA would be served by EID, the Reduced Hillside Development Alternative average-dry weather flow would be 1.16 mgd and peak-wet weather flow would be 2.52 mgd less than those identified in the SRCSD Master Plan 2000.

Collected wastewater flows from the SPA would ultimately be transported to the SRWTP for treatment and disposal. The 2020 Master Plan provides for the expansion of the SRWTP to 218 mgd based on growth rates expected to be achieved in the Sacramento County region by 2020. This projected capacity specifically includes project-related wastewater flows through 2020. At the time the 2020 Master Plan EIR was prepared, it was assumed that flows would increase from 155 mgd and would surpass 181 mgd by 2007. However, flows to the SRWTP have decreased between 2000 and 2008 from 155 mgd to 141 mgd.

Note that this total does not represent a buildout population total for SRCSD; rather, it represents the amount of growth expected within SRCSD based on projections. The SRCSD has determined that growth within the district is less than what was projected in the 2020 master plan and the SRWTP can provide capacity to future development beyond what was originally anticipated. If substantial population growth or new development occurs before 2020, the SRCSD will reevaluate expansion needs and phase treatment plant expansion to provide for sufficient long-term capacity.

SCRSD prepared the *Sacramento Regional Wastewater Treatment Plant 2020 Master Plan Final Environmental Impact Report* (SRCSD 2004). As described above, the EIR was determined to be legally deficient by the Sacramento Superior Court and the judgment has been appealed. The legal effect of the pending appeal is to stay the Superior Court's determination of legal deficiency. Thus, this EIR/EIS summarizes below and incorporates by reference the significant impacts that were identified in the 2020 Master Plan EIR as they relate to the project.

Because there is a relationship between the project and the need for expansion the SRWTP, implementation of the Reduced Hillside Development Alternative would contribute indirectly and incrementally to the related impacts (described above), most of which would be reduced to a less-than-significant level through implementation of mitigation measures. The only significant and unavoidable impact related to the treatment plant that was identified would be from short-term increases in NO_X during construction of SRWTP facilities. In addition to these impacts, there is a potential that new significant impacts to water quality could be identified if the EIR for the SRWTP is found inadequate and impacts are reanalyzed. It is too speculative to draw any such conclusion at this point since additional studies would be required to substantiate any new significant impacts.

Because the SRWTP is planned to accommodate growth in Sacramento regional area by 2020, development in the SPA that occurs by 2020 would be accommodated by planned SRWTP capacity. Over time, additional planning at the SRWTP would occur, and overall capacity would be assessed and additional capacity planned for and added. There is expected to be sufficient SRWTP capacity to accommodate project flows under the Reduced Hillside Development Alternative through 2020. However, there would be no assurances that the SRWTP would have adequate capacity for new wastewater flows for project development occurring after 2020. Therefore, the potential lack of treatment capacity past 2020 at full project buildout is a **direct, potentially significant** impact. The Reduced Hillside Development Alternative would also contribute to the need to expand the facility and therefore would contribute **indirectly** to the **significant and unavoidable** short-term impact related to air quality from expansion of the SRWTP identified in the 2020 Master Plan EIR. ***[Greater]***

Mitigation Measure: Implement Mitigation Measure 3A.16-3.

Off-Site Elements

The sewer force main would provide the necessary infrastructure needed to provide wastewater service to the SPA, and construction of the off-site freeway interchange improvements, and the detention basin in Sacramento County, and the two roadway connections into El Dorado Hills would not involve construction of new housing or development of new businesses that would increase demand for wastewater collection and conveyance facilities. Therefore, the off-site elements would have a **direct, less-than-significant** impact on the increased demand wastewater treatment. The **indirect** physical impacts of constructing the sewer force main are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development.

Mitigation Measure: No mitigation measures are required.

Implementation of Mitigation Measure 3A.16-3 would reduce direct significant impacts associated with increased demand for wastewater treatment plant facilities under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives to a **less-than-significant** level because an adequate wastewater treatment facilities would be documented before approval final maps and issuance of building permits.

Regarding expansion of the SRWTP, implementation of mitigation measures to reduce air quality impacts is the responsibility of SRCSD. Such measures would be implemented in accordance with the certified SRWTP 2020 Master Plan EIR. The No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives would indirectly contribute to impacts on air quality that would be **significant and unavoidable** after implementation of all feasible mitigation measures.

IMPACT 3A.16-4 **Increased Demand for EID Off-Site Wastewater Collection and Conveyance Facilities.** *The wastewater generated within the 189-acre EID service area would require off-site wastewater collection and conveyance facilities to the EID facility.*

On-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80, and no off-site water facilities would be constructed. These residences would require the use of on-site septic systems and the SPA would be under the jurisdiction of Sacramento County, not El Dorado County. Therefore, the 44 individual rural residences that could be built under the No Project Alternative would not increase demand for municipal wastewater collection and conveyance facilities and there would be **no direct** or **indirect** impacts. See Section 3A.7, "Geology, Soils, Mineral, and Paleontological Resources - Land," for a discussion of the suitability of soils for use with septic systems. ***[Lesser]***

NCP, PP, RIM, CD, RHD

Approximately 189 acres of the SPA east of Empire Ranch Road is within the EID service area and off-site wastewater collection and conveyance facilities would be provided by EID. The wastewater infrastructure plan (MacKay & Somps 2008a) has identified three possible points of connection (POCs) to the existing EID conveyance system as described below.

- POC 1 would be to an existing 6-inch sewer main at Winterfield Court approximately 100 feet east of the SPA boundary. POC 1 would eliminate the need for Pump Station 4.
- POC 2 would be to an existing 6-inch sewer main at the intersection of Stonebriar Drive and Prima Way. POC 2 would eliminate the need for Pump Station 3.
- POC 3 would be to an existing 6-inch sewer main at Ranch Bluff Way south of White Rock Road. POC 3 would reduce flow to the East Sanitary Sewer Pump Station.

Sewer flows from the EID service area would be conveyed to an existing pump station at the intersection of White Rock Drive and Winterfield Drive and ultimately conveyed to the El Dorado Hills WWTP (see Impact 3A.16-5).

The existing collection and conveyance facilities may not have the capacity to accommodate wastewater flows generated by the project and could require improvements to meet project demands. Potential improvements include expanding the capacity of existing sewer pipelines, upgrading or replacing the existing pump, and installing an additional manhole; however, it is not known at this time what specific improvements would be required. Any improvements to these facilities would require additional analysis in a subsequent CEQA document to identify specific impacts and any required mitigation measures. Impacts resulting from improvements to EID collection and conveyance facilities could include: temporary, short-term generation of criteria air pollutants, such as PM_{10} (e.g., respirable particulate matter with a diameter smaller than 10 microns) and emissions of ozone precursors (e.g., reactive organic gases and oxides of nitrogen) during construction; temporary lane closures; increased truck traffic and other roadway impacts during construction; exposure of sensitive receptors to noise levels above noise ordinances during construction; exposure of sensitive noise receptors to new stationary-source noise from potential pump station improvements; and exposure of construction crews and the public to hazardous materials used in construction.

Because it is not known at this time if existing EID collection and conveyance facilities have the capacity to accommodate wastewater flows generated by project development and what improvements would be required, the

No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives could result in **direct** and **indirect, potentially significant** impacts related to improvements to off-site EID collection and conveyance facilities. ***[Similar]***

Mitigation Measure 3A.16-4: Submit Proof of Adequate EID Off-Site Wastewater Conveyance Facilities and Implement EID Off-Site Infrastructure Service Systems or Ensure That Adequate Financing Is Secured.

Before the approval of the final map and issuance of building permits for all project phases, the project applicant(s) of all project phases shall obtain proof from EID that an adequate wastewater conveyance system either has been constructed or is ensured through the use of bonds or other sureties. The project applicants of all project phases shall submit this proof to the City of Folsom. EID off-site wastewater conveyance infrastructure sufficient to provide adequate service to project shall be in place for the amount of development identified in the tentative map before approval of the final map and issuance of building permits for all project phases, or their financing shall be ensured to the satisfaction of the City.

Implementation: The project applicant(s) of all project phases.

Timing: Before approval of final maps and issuance of building permits for any project phase.

Enforcement: City of Folsom Community Development Department and City of Folsom Public Works Department.

Off-Site Elements

Construction of the off-site freeway interchange improvements, sewer force main, and the detention basin in Sacramento County, and the two roadway connections into El Dorado Hills would not involve construction of new housing or development of new businesses that would increase demand for EID off-site wastewater collection and conveyance facilities. Therefore, the off-site elements would have **no direct** or **indirect** impacts.

Mitigation Measure: No mitigation measures are required.

Implementation of Mitigation Measure 3A.16-4 would reduce significant impacts associated with increased demand for EID off-site wastewater collection facilities under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives to a **less-than-significant** level because adequate EID off-site wastewater conveyance facilities would be documented or adequate financing would be secured before approval final maps and issuance of building permits.

However, it is unknown if existing collection and conveyance facilities have the capacity to accommodate wastewater flows generated by project development and the project could directly and indirectly contribute to the need for off-site EID wastewater facility improvements. Therefore, the Proposed Project, Resource Impact Minimization, Centralized Development, Reduced Hillside Development, and No USACE Permit Alternatives would contribute to the potentially significant environmental effects associated with improvements to these facilities for which feasible mitigation may not be available to reduce impacts to a less-than-significant level. Therefore, this would be a **potentially significant and unavoidable** impact.

IMPACT 3A.16-5 Increased Demand for El Dorado Hills Wastewater Treatment Plant Facilities. *Project implementation would result in increased generation of wastewater. Collected wastewater flows from the 189-acre EID portion of the SPA would ultimately be transported to the El Dorado Hills WWTP for treatment and disposal.*

On-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80, and no off-site water facilities would be constructed. These residences would require the use of on-site septic systems and the SPA would be under the jurisdiction of Sacramento County, not El Dorado County. Therefore, the 44 individual rural residences that could be built under the No Project Alternative would not increase demand for municipal wastewater treatment facilities and there would be **no direct** or **indirect** impacts. See Section 3A.7, "Geology, Soils, Mineral, and Paleontological Resources - Land," for a discussion of the suitability of soils for use with septic systems. ***[Lesser]***

NCP

As shown in Table 3A.16-3, implementation of the No USACE Permit Alternative would generate 0.31 mgd of average dry-weather flow and 0.78 mgd peak wet-weather flow within the EID service area (Zoller, pers. comm. 2009). The No USACE Permit Alternative average-dry weather flow would be 0.03 mgd and peak-wet weather flow would be 0.08 mgd more than the Proposed Project Alternative.

Collected wastewater flows from the EID portion of the SPA would ultimately be transported to the El Dorado Hills WWTP for treatment and disposal. Currently, the El Dorado Hills WWTP's design capacity is 3.0 mgd average dry-weather flow and 7.6 mdg peak wet-weather flow. As of 2007, the average dry weather flow is approximately 2.86 and the peak wet-weather flow is 8.04 mgd. Expansion of the WWTP is required to provide wastewater treatment capacity for land uses in El Dorado Hills as identified by the El Dorado County General Plan (2003), to meet anticipated regulatory requirements for water quality, and to help meet recycled water demands. The treatment plant is currently being expanded to 4.0 mgd, which is anticipated to be completed in December 2009. The full buildout of the treatment plant to 5.4 mgd is expected to occur by 2025.

The SPA was not included in the planned future capacity of the El Dorado Hills WWTP; therefore, the No USACE Permit Alternative would potentially result in increased in wastewater flows that exceed treatment plant capacity. Any improvements the treatment plant would require additional analysis in a separate CEQA document to identify specific impacts and any required mitigation measures. Potential impacts that could result from improvements to the El Dorado Hills WWTP are described above. Because it is not known at this time if the existing El Dorado Hills WWTP has the capacity to treat wastewater flows generated by project development and what improvements would be required, the No USACE Permit Alternative could result in **direct** and **indirect, potentially significant** impacts related to improvements to the El Dorado Hills WWTP. ***[Greater]***

Mitigation Measure 3A.16-5: Demonstrate Adequate El Dorado Hills Wastewater Treatment Plant Capacity.

The project applicant(s) of all project phases shall demonstrate adequate capacity at the El Dorado Hills WWTP for new wastewater flows generated by project development. This shall involve preparing a tentative map–level study and paying connection and capacity fees as identified by EID. Approval of the final map and issuance of building permits for all project phases shall not be granted until the City verifies adequate El Dorado Hills WWTP capacity is available for the amount of development identified in the tentative map.

Implementation: The project applicant(s) of all project phases.

Timing: Before approval of final maps and issuance of building permits for any project phases involving the El Dorado Hills WWTP.

Enforcement: City of Folsom Community Development Department and City of Folsom Public Works Department.

PP

As shown in Table 3A.16-3, implementation of the Proposed Project Alternative would generate 0.28 mgd of average dry-weather flow and 0.70 mgd peak wet-weather flow within the EID service area (MacKay & Somps 2008b). Collected wastewater flows from the EID portion of the SPA would ultimately be transported to the El Dorado Hills WWTP for treatment and disposal.

Currently, the design capacity of the El Dorado Hills WWTP is 3.0 mgd average dry-weather flow and 7.6 mdg peak wet-weather flow. As of 2007, the average dry weather flow is approximately 2.86 and the peak wet-weather flow is 8.04 mgd. Expansion of the WWTP is required to provide wastewater treatment capacity for land uses in El Dorado Hills as identified by the El Dorado County General Plan (2003), to meet anticipated regulatory requirements for water quality, and to help meet recycled water demands. The treatment plant is currently being expanded to 4.0 mgd, which is anticipated to be completed in December 2009. The full buildout of the treatment plant to 5.4 mgd is expected to occur by 2025.

The SPA was not included in the planned future capacity of the El Dorado Hills WWTP; therefore, the Proposed Project Alternative would potentially result in increased in wastewater flows that exceed treatment plant capacity. Any improvements the treatment plant would require additional analysis in a separate CEQA document to identify specific impacts and any required mitigation measures. Impacts resulting from improvements to the El Dorado Hills WWTP could include: temporary, short-term generation of criteria air pollutants, such as PM_{10} and emissions of ozone precursors (e.g., reactive organic gases and oxides of nitrogen) during construction; generation of new odors from operation of expanded treatment plant facilities; degradation of water quality from increased discharges to Carson Creek; temporary roadway lane closures, increased truck traffic, and other roadway impacts during construction; exposure of sensitive receptors to noise levels above noise ordinances during construction; and exposure of construction crews and the public to hazardous materials used in construction.

Because it is not known at this time if the existing El Dorado Hills WWTP has the capacity to treat wastewater flows generated by project development and what improvements would be required, the Proposed Project Alternative could result in **direct** and **indirect, potentially significant** impacts related improvements to the El Dorado Hills WWTP.

Mitigation Measure: Implement Mitigation Measure 3A.16-5.

RIM

As shown in Table 3A.16-3, implementation of the Resource Impact Minimization Alternative would generate 0.22 mgd of average dry-weather flow and 0.55 mgd peak wet-weather flow within the EID service area (MacKay & Somps 2008b). The Resource Impact Minimization Alternative average-dry weather flow would be 0.06 mgd and peak-wet weather flow would be 0.15 mgd less than the Proposed Project Alternative.

Collected wastewater flows from the EID portion of the SPA would ultimately be transported to the El Dorado Hills WWTP for treatment and disposal. Currently, the design capacity of the El Dorado Hills WWTP is 3.0 mgd average dry-weather flow and 7.6 mgd peak wet-weather flow. As of 2007, the average dry weather flow is approximately 2.86 and the peak wet-weather flow is 8.04 mgd. Expansion of the WWTP is required to provide wastewater treatment capacity for land uses in El Dorado Hills as identified by the El Dorado County General Plan (2003), to meet anticipated regulatory requirements for water quality, and to help meet recycled water demands. The treatment plant is currently being expanded to 4.0 mgd, which is anticipated to be completed in December 2009. The full buildout of the treatment plant to 5.4 mgd is expected to occur by 2025.

The SPA was not included in the planned future capacity of the El Dorado Hills WWTP; therefore, the Resource Impact Minimization Alternative would potentially result in increased in wastewater flows that exceed treatment plant capacity. Any improvements the treatment plant would require additional analysis in a separate CEQA document to identify specific impacts and any required mitigation measures. Potential impacts that could occur as a result of improvements to the El Dorado Hills WWTP are described above. Because it is not known at this time if the existing El Dorado Hills WWTP has the capacity to treat wastewater flows generated by project development and what improvements would be required, the Resource Impact Minimization Alternative could result in **direct** and **indirect, potentially significant** impacts related to improvements to the El Dorado Hills WWTP. ***[Lesser]***

Mitigation Measure: Implement Mitigation Measure 3A.16-5.

CD

As shown in Table 3A.16-3, implementation of the Centralized Development Alternative would generate 0.05 mgd of average dry-weather flow and 0.14 mgd peak wet-weather flow within the EID service area (Zoller, pers. comm. 2009). The Centralized Development Alternative average-dry weather flow would be 0.23 mgd and peak-wet weather flow would be 0.56 mgd less than the Proposed Project Alternative.

Collected wastewater flows from the EID portion of the SPA would ultimately be transported to the El Dorado Hills WWTP for treatment and disposal. Currently, the design capacity of the El Dorado Hills WWTP is 3.0 mgd average dry-weather flow and 7.6 mgd peak wet-weather flow. As of 2007, the average dry weather flow is approximately 2.86 and the peak wet-weather flow is 8.04 mgd. Expansion of the WWTP is required to provide wastewater treatment capacity for land uses in El Dorado Hills as identified by the El Dorado County General Plan (2003), to meet anticipated regulatory requirements for water quality, and to help meet recycled water demands. The treatment plant is currently being expanded to 4.0 mgd, which is anticipated to be completed in December 2009. The full buildout of the treatment plant to 5.4 mgd is expected to occur by 2025.

The SPA was not included in the planned future capacity of the El Dorado Hills WWTP; therefore, the Centralized Development Alternative would potentially result in increased in wastewater flows that exceed treatment plant capacity. Any improvements the treatment plant would require additional analysis in a separate CEQA document to identify specific impacts and any required mitigation measures. Potential impacts that could result from improvements to the El Dorado Hills WWTP are described above. Because it is not known at this time if the existing El Dorado Hills WWTP has the capacity to treat wastewater flows generated by project development and what improvements would be required, the Centralized Development Alternative could result in **direct** and **indirect, potentially significant** impacts related to improvements to the El Dorado Hills WWTP. ***[Lesser]***

Mitigation Measure: Implement Mitigation Measure 3A.16-5.

RHD

As shown in Table 3A.16-3, implementation of the Reduced Hillside Development Alternative would generate 0.23 mgd of average dry-weather flow and 0.59 mgd peak wet-weather flow within the EID service area (Zoller, pers. comm. 2009). The Reduced Hillside Development Alternative average-dry weather flow would be 0.05 mgd and peak-wet weather flow would be 0.11 mgd less than the Proposed Project Alternative.

Collected wastewater flows from the EID portion of the SPA would ultimately be transported to the El Dorado Hills WWTP for treatment and disposal. Currently, the El Dorado Hills WWTP's design capacity is 3.0 mgd average dry-weather flow and 7.6 mdg peak wet-weather flow. As of 2007, the average dry weather flow is approximately 2.86 and the peak wet-weather flow is 8.04 mgd. Expansion of the WWTP is required to provide wastewater treatment capacity for land uses in El Dorado Hills as identified by the El Dorado County General

Plan (2003), to meet anticipated regulatory requirements for water quality, and to help meet recycled water demands. The treatment plant is currently being expanded to 4.0 mgd, which is anticipated to be completed in December 2009. The full buildout of the treatment plant to 5.4 mgd is expected to occur by 2025.

The SPA was not included in the planned future capacity of the El Dorado Hills WWTP; therefore, the Reduced Hillside Development Alternative would potentially result in increased in wastewater flows that exceed treatment plant capacity. Any improvements the treatment plant would require additional analysis in a separate CEQA document to identify specific impacts and any required mitigation measures. Potential impacts that could result from improvements to the El Dorado Hills WWTP are described above. Because it is not known at this time if the existing El Dorado Hills WWTP has the capacity to treat wastewater flows generated by project development and what improvements would be required, the Reduced Hillside Development Alternative could result in **direct** and **indirect, potentially significant** impacts related to improvements to the El Dorado Hills WWTP. ***[Lesser]***

Mitigation Measure: Implement Mitigation Measure 3A.16-5.

Off-Site Elements

Construction of the off-site freeway interchange improvements, sewer force main, and the detention basin in Sacramento County, and the two roadway connections into El Dorado Hills would not involve construction of new housing or development of new businesses that would increase demand for off-site EID wastewater collection and conveyance facilities. Therefore, **no direct** or **indirect** impacts would occur.

Mitigation Measure: No mitigation measures are required.

Implementation of Mitigation Measure 3A.16-5 would reduce significant impacts associated with increased demand for wastewater treatment plant facilities under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives to a **less-than-significant** level because adequate wastewater treatment facilities would be documented before approval final maps and issuance of building permits.

However, it is unknown if existing the El Dorado Hills WWTP has the capacity to accommodate wastewater flows generated by project development, and the project could directly and indirectly contribute to the need for El Dorado Hills WWTP improvements. Therefore, the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives could contribute to the potentially significant environmental effects associated with improvements to treatment plant facilities for which feasible mitigation may not be available to reduce impacts to a less-than-significant level. Therefore, this would be a **potentially significant and unavoidable** impact.

IMPACT 3A.16-6 Short-Term Generation of Solid Waste during Project Construction. *Project construction would generate short-term construction-related debris and waste.*

On-Site and Off-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80, and no off-site water facilities would be constructed. Construction of 44 individual rural residences within a 3,500-acre area would represent a very small amount of construction-related debris and waste in the SPA. Solid waste generate from construction of these rural residences would be disposed of at the Keifer Landfill, and the Kiefer Landfill has sufficient permitted capacity to accommodate the disposal needs that would be generated under the No Project Alternative. Therefore, the 44 individual rural residences that could be built under the No Project Alternative would have a **direct, less-than-**

significant impact on short-term construction-related debris and waste; **no indirect** impacts would occur. ***[Lesser]***

NCP, PP, RIM, CD, RHD

Project construction activities would occur at intervals over the 19-year buildout period. CIWMB calculates solid waste business generation rates based on Federal standard industrial classifications and averages of samples from individual businesses throughout California. CIWMB estimates that construction activities typically generate an average of approximately 3,258 tons per year of solid waste; therefore, construction activities would generate a total of 61,902 tons per year (19 × 3,258) or 169.5 tpd over the buildout period (2011–2030) (CIWMB 2008e).

Solid waste generated by construction activities in the SPA and by construction of the off-site freeway interchanges improvements, the sewer force main, and the detention basin in Sacramento County and Folsom would be disposed of at the Kiefer Landfill. The landfill is permitted to accept 10,800 maximum tpd of solid waste with an average intake of 6,000 tpd. The estimated range of solid waste generated by construction activities (169.5 tpd) during the 19-year buildout period would be approximately 1.6% of the 10,800 maximum tpd that could be received at the landfill. The landfill has a total capacity of 117 million cubic yards, and a remaining capacity of 113 million cubic yards. Currently, the landfill has a closure date of 2064.

In addition, the project would be required to comply with the County's Construction and Demolition Ordinance (Title 6, Chapter 6.20) and City's Construction and Demolition Recycling Ordinance (Title 8, Chapter 8.30). Contractors are required to document types of building materials and estimated quantities on a "Waste Management Plan" before obtaining building permits; within 30 days of project completion contractors must complete the "Waste Management Plan" to document the actual quantity of construction or demolition waste generated and demonstrate the actual quantities recycled, salvaged or reused, and/or disposed.

Any solid waste generated by construction of the two roadway connections into El Dorado Hills would be disposed of at the Lockwood Regional Landfill located in Sparks, Nevada. The Lockwood Regional Landfill receives 1.4 million tons of solid waste per year, with a daily average of 7,700 tons. The existing permit does not restrict the maximum daily and yearly tonnage that may be received by the landfill and the facility has a remaining capacity of 32.5 million tons. Currently, the landfill has a projected closure date of 2035. In addition, the roadway connections into El Dorado County would be required to comply with the County's Construction and Demolition Debris Recycling Ordinance (Title 8, Chapter 8.43). This ordinance requires that a "Debris Recycling Acknowledgment" be submitted for review and approval at the time of submitting an application for a building permit. Within 60 days after completion and/or occupancy, contractors must submit a "Debris Recycling Report" to document the actual quantity of construction or demolition wastes generated and demonstrate the actual quantities recycled, salvaged or reused, and/or disposed.

Because the Kiefer Landfill and the Lockwood Landfill have sufficient permitted capacity to accommodate short-term construction-related disposal needs for the on-site and off-site elements, and because the project would comply with the City's Construction and Demolition Debris Recycling Ordinance and County's Construction and Demolition Debris Recycling Ordinance, this **direct** impact is **less than significant**. **No indirect** impacts would occur. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.16-7 Increased Long-Term Generation of Solid Waste. *Project implementation would increase long-term solid-waste generation.*

On-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80, and no off-site water facilities would be constructed. Construction of 44 individual rural residences could potentially generate an increased population of 128 persons in Sacramento County. Based on CIWMB's generation rates for Sacramento County (0.36 ton per resident per year), the estimated total population for the No Project Alternative (128 persons) would generate approximately 46.1 tons of solid waste per year (0.36 × 128), or 0.1 tpd, which would be 32,493 tons per year (89.0 tpd) less than would be generated under the Proposed Project Alternative.

As described above, solid waste collected from the SPA would be hauled to the Kiefer Landfill, which is permitted to accept 10,800 maximum tpd of solid waste. The estimated 0.1 tpd of solid waste generated by the No Project Alternative would be approximately 0.0001% of the 10,800 maximum tpd that could be received at the landfill. Therefore, this landfill has sufficient permitted capacity to accommodate solid-waste disposal needs for the No Project Alternative, and this would be a **direct, less-than-significant** impact on construction-related soil erosion; **no indirect** impacts would occur. ***[Lesser]***

NCP

Based on the CIWMB's generation rates for Sacramento County, the estimated total population for the No USACE Permit Alternative (15,808) would generate approximately 5,691 tons of solid waste per year (0.36 × 15,808), or 15.6 tpd. The No USACE Permit Alternative would generate a maximum of approximately 13,021 jobs over the 19-year buildout period. Based on an average generation rate of 1.8 tons per employee per year, the No USACE Permit Alternative would generate 23,438 tons of waste per year (1.8 × 13,021) or 64.2 tpd in the SPA. As shown on Table 3A.16-4, combining residential and business solid-waste generation, the total solid-waste generation for the No USACE Permit Alternative would be approximately 29,399 tons per year (80.7 tpd), which would be 3,140 tons per year (9.3 tpd) less than would be generated under the Proposed Project Alternative. Much lower generation rates would occur at project initiation, with gradual increases in the rate as development progressed.

Solid waste collected from the SPA would be hauled to the Kiefer Landfill, which is permitted to accept 10,800 maximum tpd of solid waste. The estimated 79.8 tpd of solid waste generated by the No USACE Permit Alternative would be approximately 0.7% of the 10,800 maximum tpd that could be received at the landfill. Therefore, this landfill has sufficient permitted capacity to accommodate solid-waste disposal needs for the No USACE Permit Alternative. Development of the No USACE Permit Alternative would also be required to comply with all Federal, state, and local statutes and regulations related to solid-waste reduction and recycling. Therefore, this **direct** impact is considered **less than significant**. **No indirect** impacts would occur. ***[Lesser]***

Mitigation Measure: No mitigation measures are required.

PP

Based on CIWMB's generation rates for Sacramento County (0.36 ton per resident per year), the estimated total population for the Proposed Project Alternative (24,335 persons) would generate approximately 8,761 tons of solid waste per year (0.36 × 24,335), or 24.0 tpd.

The Proposed Project Alternative would generate a maximum of approximately 13,210 jobs over the 19-year buildout period. The employees in the SPA would be working in jobs within designated waste categories such as commercial/retail stores (0.3 ton of waste per employee per year), other professional services (1.2 tons of waste per employee per year), business services (1.7 tons of waste per employee per year), and restaurants (3.1 tons of waste per employee per year). To estimate a single business waste–disposal rate for project development, the two anticipated extremes among the categories (0.3 ton and 3.1 tons per employee per year) were averaged, resulting in a generation rate of 1.8 tons per employee per year. An average business waste disposal rate of 1.8 tons per employee per year results in generation of 23,778 tons of waste per year (1.8 × 13,210) or 65.1 tpd in the SPA.

As shown on Table 3A.16-4, combining residential and business solid-waste generation, total solid-waste generation for the Proposed Project Alternative would be approximately 32,539 tons per year (89.1 tpd). Much lower generation rates would occur at project initiation, with gradual increases in the rate as development progressed. As described above, solid waste collected from the SPA would be hauled to the Kiefer Landfill, which is permitted to accept 10,800 maximum tpd of solid waste. The estimated 89.1 tpd of solid waste generated by the Proposed Project Alternative would be approximately 0.8% of the 10,800 maximum tpd that could be received at the landfill. Therefore, this landfill has sufficient permitted capacity to accommodate solid-waste disposal needs for the Proposed Project Alternative. Development of the Proposed Project Alternative would also be required to comply with all Federal, state, and local statutes and regulations related to solid-waste reduction and recycling. Therefore, this **direct** impact is considered **less than significant**. **No indirect** impacts would occur.

Mitigation Measure: No mitigation measures are required.

RIM

Based on the CIWMB's generation rates for Sacramento County, the estimated total population for the Resource Impact Minimization Alternative (19,584 people) would generate approximately 7,050 tons of solid waste per year (0.36 × 19,584), or 19.3 tpd. The Resource Impact Minimization Alternative would generate a maximum of approximately 9,749 jobs over the 19-year buildout period. Based on an average generation rate of 1.8 tons per employee per year, the Resource Impact Minimization Alternative would generate 17,548 tons of waste per year (1.8 × 9,749) or 48.0 tpd in the SPA. As shown on Table 3A.16-4, combining residential and business solid-waste generation, the total solid-waste generation for the Resource Impact Minimization Alternative would be approximately 24,598 tons per year (67.3 tpd), which would be 7,950 tons per year (21.8 tpd) less than would be generated under the Proposed Project Alternative. Much lower generation rates would occur at project initiation, with gradual increases in the rate as development progressed.

Solid waste collected from the SPA would be hauled to the Kiefer Landfill, which is permitted to accept 10,800 maximum tpd of solid waste. The estimated 67.3 tpd of solid waste generated by the Resource Impact Minimization Alternative would be approximately 0.6% of the 10,800 maximum tpd that could be received at the landfill. Therefore, this landfill has sufficient permitted capacity to accommodate solid-waste disposal needs for the Resource Impact Minimization Alternative. Development of the Resource Impact Minimization Alternative would also be required to comply with all Federal, state, and local statutes and regulations related to solid-waste reduction and recycling. Therefore, this **direct** impact is considered **less than significant**. **No indirect** impacts would occur. ***[Lesser]***

Mitigation Measure: No mitigation measures are required.

CD

Based on the CIWMB's generation rates for Sacramento County, the estimated total population for the Centralized Development Alternative (20,689) would generate approximately 7,448 tons of solid waste per year (0.36 × 20,689), or 20.4 tpd. The Centralized Development Alternative would generate a maximum of approximately 16,860 jobs over the 19-year buildout period. Based on an average generation rate of 1.8 tons per

employee per year, the Centralized Development Alternative would generate 30,348 tons of waste per year (1.8 × 16,860) or 83.1 tpd in the SPA. As shown on Table 3A.16-4, combining residential and business solid-waste generation, the total solid-waste generation for the Centralized Development Alternative would be approximately 37,796 tons per year (103.5 tpd), which would be 5,257 tons per year (14.4 tpd) more than would be generated under the Proposed Project Alternative. Much lower generation rates would occur at project initiation, with gradual increases in the rate as development progressed.

Solid waste collected from the SPA would be hauled to the Kiefer Landfill, which is permitted to accept 10,800 maximum tpd of solid waste. The estimated 103.5 tpd of solid waste generated by the Centralized Development Alternative would be approximately 1.0% of the 10,800 maximum tpd that could be received at the landfill. Therefore, this landfill has sufficient permitted capacity to accommodate solid-waste disposal needs for the Centralized Development Alternative. Development of the Centralized Development Alternative would also be required to comply with all Federal, state, and local statutes and regulations related to solid-waste reduction and recycling. Therefore, this **direct** impact is considered **less than significant**. **No indirect** impacts would occur. ***[Greater]***

Mitigation Measure: No mitigation measures are required.

RHD

Based on the CIWMB's generation rates for Sacramento County, the estimated total population for the Reduced Hillside Development Alternative (25,022) would generate approximately 9,008 tons of solid waste per year (0.36 × 25,022), or 24.7 tpd. The Reduced Hillside Development Alternative would generate a maximum of approximately 17,484 jobs over the 19-year buildout period. Based on an average generation rate of 1.8 tons per employee per year, the Reduced Hillside Development Alternative would generate 31,471 tons of waste per year (1.8 × 17,484) or 86.2 tpd in the SPA. As shown on Table 3A.16-4, combining residential and business solid-waste generation, the total solid-waste generation for the Reduced Hillside Development Alternative would be approximately 40,479 tons per year (110.9 tpd), which would be 7,940 tons per year (21.8 tpd) more than would be generated under the Proposed Project Alternative. Much lower generation rates would occur at project initiation, with gradual increases in the rate as development progressed.

Solid waste collected from the SPA would be hauled to the Kiefer Landfill, which is permitted to accept 10,800 maximum tpd of solid waste. The estimated 110.9 tpd of solid waste generated by the Reduced Hillside Development Alternative would be approximately 1.0% of the 10,800 maximum tpd that could be received at the landfill. Therefore, this landfill has sufficient permitted capacity to accommodate solid-waste disposal needs for the Reduced Hillside Development Alternative. Development of the Reduced Hillside Development Alternative would also be required to comply with all Federal, state, and local statutes and regulations related to solid-waste reduction and recycling. Therefore, this **direct** impact is considered **less than significant**. **No indirect** impacts would occur. ***[Greater]***

Mitigation Measure: No mitigation measures are required.

Off-Site Elements

Construction of the off-site freeway interchange improvements, the sewer force main, the detention basin in Sacramento County, and the two roadway connections into El Dorado Hills would not involve construction of new housing or development of new businesses. Therefore, the off-site elements would have **no direct** or **indirect** impact on increased long-term generation of solid waste.

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.16-8 Increased Demand for Electricity and Infrastructure. *Project implementation would increase the demand for electricity and electrical infrastructure.*

On-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80, and no off-site water facilities would be constructed. Construction of 44 individual rural residences within a 3,500-acre area would represent a very small increase in demand for electricity. The proposed dwelling units would require an average of 0.1 MVA (megavolt amperes) and a peak demand of 0.2 MVA. The average electrical demands of the No Project Alternative would be 39.6 MVA and peak electrical demands would be 87.1 MVA less than the Proposed Project Alternative.

Individual property owners would be required to coordinate with SMUD to obtain electrical service. Because the 44 individual rural residences that could be built under the No Project Alternative would result in minimal increases in demand for electricity and because individual property owners would coordinate with SMUD regarding service, this **direct** impact is considered **less than significant**. **No indirect** impacts would occur. ***[Lesser]***

NCP

Buildout of the No USACE Permit Alternative would increase electrical demand in the SMUD service area by an average of 35.7 MVA with a peak demand of 78.0 MVA (Table 3A.16-5). This alternative would have an average electrical demand of 4.0 MVA and peak electrical demand of 9.3 MVA less than the Proposed Project Alternative.

SMUD currently has existing capacity to serve the project from its electrical distribution system north of U.S. 50. To serve the remainder of the SPA, SMUD has determined that a minimum of three distribution substations would be required to serve project development as described above (Kim, pers. comm., 2009). The on-site service lines would be sized to meet the demands of project development, and public utility easements would be dedicated for all underground facilities. SMUD would extend lines and construct facilities to serve the SPA concurrently with development phases, and the location of this infrastructure would be identified in the final project design. As part of the project approval process, the project applicants of all project phases would coordinate with and meet the requirements of SMUD regarding the extension and locations of on-site infrastructure.

The proposed electrical-utility improvements would be required to comply with all existing City and SMUD requirements, and applicable requirements of the California Building Standards Code. Because SMUD would meet the electrical demands of the No USACE Permit Alternative and provide new electrical infrastructure to the SPA, this **direct** impact is **less than significant**. The **indirect** physical impacts of constructing these facilities are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development. ***[Lesser]***

Mitigation Measure: No mitigation measures are required.

PP

Implementation of the Proposed Project Alternative would increase electrical demand in the SPA. Electrical service in Folsom is provided by SMUD through 473 miles of transmission lines (110 kV or more) and 9,784 miles of distribution lines (typically 12 kV). As shown on Table 3A.16-5, buildout of the Proposed Project Alternative would increase in electrical demand in the SMUD service area by an average of 39.7 MVA with and a peak demand of 87.3 MVA (Capitol Utilities Specialists 2009:4). SMUD concurs with this assessment; however,

SMUD has calculated the worst-case scenario as increasing electrical demand by a total of 120 MVA (Capitol Utilities Specialists 2009:5; Kim, pers. comm., 2009).

SMUD currently has the following electrical infrastructure on and in the vicinity of the SPA: a 69-kV overhead single-circuit transmission line located in the south-central portion of the SPA, a 69-kV single-circuit transmission line that extends south and west along Prairie City Road until it reaches White Rock Road, a 69-kV single-circuit transmission line that extends south from U.S. 50 on the east side of Placerville Road where it terminates just within the SPA, and a 12-kV overhead transmission line that extends north from White Rock Road along the east side of Placerville Road to U.S. 50.

SMUD currently has existing capacity to serve the Proposed Project Alternative from its electrical distribution system north of U.S. 50 (Capitol Utility Specialists 2009:5). To serve the remainder of the SPA, SMUD has determined that a minimum of three distribution substations would be required to serve the proposed development (Kim, pers. comm., 2009). These substations would be located in the vicinity of Easton Valley Parkway and Rowberry Drive, near the intersection of White Rock Road and Scott Road, and along Placerville Road just north of Easton Valley Road. Each substation would have two 25 MVA and eight underground 12-kV mainline circuits. Electrical distribution feeders would extend from these substations to serve the SPA (Capitol Utility Specialists 2009:4).

A new 69-kV overhead transmission line would be constructed along Placerville Road from U.S. 50 to White Rock Road. Additional overhead transmission lines may be required depending on the location of the distribution substations (Kim, pers. comm., 2009). SMUD would install new electrical mainline facilities and underground the existing 12-kV overhead transmission line concurrently with improvements to White Rock Road (Capitol Utility Specialists 2009:3). SMUD would conduct a separate CEQA analysis to analyze specific impacts and identify any required mitigation measures for construction and operation of new off-site electrical facilities.

The on-site service lines would be sized to meet the demands of project development, and public utility easements would be dedicated for all underground facilities. SMUD would extend lines and construct facilities to serve the SPA concurrently with development phases, and the location of this infrastructure would be identified in the final project design. As part of the project approval process, the project applicant(s) of all project phases would coordinate with and meet the requirements of SMUD regarding the extension and locations of on-site infrastructure (as more fully described in Chapter 2, “Alternatives”).

The proposed electrical-utility improvements would be required to comply with all existing City and SMUD requirements, and applicable requirements of the California Building Standards Code. Because SMUD would meet the electrical demands of the Proposed Project Alternative and provide new electrical infrastructure to the SPA, this **direct** impact is **less than significant**. The **indirect** physical impacts of constructing these facilities are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development.

Mitigation Measure: No mitigation measures are required.

RIM

Buildout of the Resource Impact Minimization Alternative would increase electrical demand in the SMUD service area by an average of 34.5 MVA with a peak demand of 75.9 MVA (Table 3A.16-5). This alternative would have an average electrical demand of 5.2 MVA and peak electrical demand of 11.4 MVA less than the Proposed Project Alternative.

SMUD currently has existing capacity to serve the project from its electrical distribution system north of U.S. 50. To serve the remainder of the SPA, SMUD has determined that a minimum of three distribution substations would be required to serve the project development, as described above (Kim, pers. comm., 2009). The on-site service lines would be sized to meet the demands of project development, and public utility easements would be

dedicated for all underground facilities. SMUD would extend lines and construct facilities to serve the SPA concurrently with development phases, and the location of this infrastructure would be identified in the final project design. As part of the project approval process, the project applicants of all project phases would coordinate with and meet the requirements of SMUD regarding the extension and locations of on-site infrastructure.

The proposed electrical-utility improvements would be required to comply with all existing City and SMUD requirements, and applicable requirements of the California Building Standards Code. Because SMUD would meet the electrical demands of the Resource Impact Minimization Alternative and provide new electrical infrastructure to the SPA, this **direct** impact is **less than significant**. The **indirect** physical impacts of constructing these facilities are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development. ***[Lesser]***

Mitigation Measure: No mitigation measures are required.

CD

Buildout of the Centralized Development Alternative would increase electrical demand in the SMUD service area by an average of 45.1 MVA with a peak demand of 97.1 MVA (Table 3A.16-5). This alternative would have an average electrical demand of 5.4 MVA and peak electrical demand of 9.8 MVA more than the Proposed Project Alternative.

SMUD currently has existing capacity to serve the project from its electrical distribution system north of U.S. 50. To serve the remainder of the SPA, SMUD has determined that a minimum of three distribution substations would be required to serve the project development as described above (Kim, pers. comm., 2009). The on-site service lines would be sized to meet the demands of project development, and public utility easements would be dedicated for all underground facilities. SMUD would extend lines and construct facilities to serve the SPA concurrently with development phases, and the location of this infrastructure would be identified in the final project design. As part of the project approval process, the project applicants of all project phases would coordinate with and meet the requirements of SMUD regarding the extension and locations of on-site infrastructure.

The proposed electrical-utility improvements would be required to comply with all existing City and SMUD requirements, and applicable requirements of the California Building Standards Code. Because SMUD would meet the electrical demands of the Centralized Development Alternative and provide new electrical infrastructure to the SPA, this **direct** impact is **less than significant**. The **indirect** physical impacts of constructing these facilities are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development. ***[Greater]***

Mitigation Measure: No mitigation measures are required.

RHD

Buildout of the Reduced Hillside Development Alternative would increase electrical demand in the SMUD service area by an average of 52.0 MVA with a peak demand of 111.5 MVA (Table 3A.16-5). This alternative would have an average electrical demand of 12.3 MVA and peak electrical demand of 24.2 MVA more than the Proposed Project Alternative.

SMUD currently has existing capacity to serve the project from its electrical distribution system north of U.S. 50. To serve the remainder of the SPA, SMUD has determined that a minimum of three distribution substations would be required to serve project developed as described above (Kim, pers. comm., 2009). The on-site service lines would be sized to meet the demands of project development, and public utility easements would be

dedicated for all underground facilities. SMUD would extend lines and construct facilities to serve the SPA concurrently with development phases, and the location of this infrastructure would be identified in the final project design. As part of the project approval process, the project applicants of all project phases would coordinate with and meet the requirements of SMUD regarding the extension and locations of on-site infrastructure.

The proposed electrical-utility improvements would be required to comply with all existing City and SMUD requirements, and applicable requirements of the California Building Standards Code. Because SMUD would meet the electrical demands of the Reduced Hillside Development Alternative and provide new electrical infrastructure to the SPA, this **direct** impact is **less than significant**. The **indirect** physical impacts of constructing these facilities are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development. ***[Greater]***

Mitigation Measure: No mitigation measures are required.

Off-Site Elements

Construction of the off-site freeway interchange improvements, the sewer force main, the detention basin in Sacramento County, and the two roadway connections into El Dorado Hills would not involve construction of new housing or development of new businesses. Therefore, there would be no increased demand for electricity and infrastructure, and **no direct** or **indirect** impacts would occur.

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.16-9 Increased Demand for Natural Gas and Infrastructure. *Project implementation would increase the demand for natural gas and infrastructure and would include the extension of existing natural gas pipelines.*

On-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80, and no off-site water facilities would be constructed. Construction of 44 individual rural residences within a 3,500-acre area would represent a very small increase in demand for natural gas. The proposed dwelling units would require 2.2 thousand cubic feet per hour (MCFH) of natural gas, which is approximately 816.1 MCFH less than the Proposed Project Alternative.

Individual property owners would be required to coordinate with PG&E to obtain natural gas service. Because the 44 individual rural residences that could be built under the No Project Alternative would result in minimal increases in demand for natural gas and because individual property owners would coordinate with PG&E regarding service, this **direct** impact is considered **less than significant**. **No indirect** impacts would occur. ***[Lesser]***

NCP

Buildout of the No USACE Permit Alternative would increase natural gas demands by 655.9 MCFH in the PG&E service area (Table 3A.16-5). This would be approximately 162.4 MCFH less than the Proposed Project Alternative.

Project implementation would require connection to the existing service lines with the ultimate configuration to be approved by PG&E. Two additional transmission mains and two natural gas regulator stations would also be

installed by PG&E to provide service to the project at full build-out. PG&E currently has capacity in its system to serve the SPA (Capitol Utilities Specialists 2009:6).

It is anticipated that 4-inch, 6-inch, and 8-inch transmission mains would be installed in major roadways throughout the SPA and 2-inch transmission mains would be installed in residential areas (Capitol Utilities Specialists 2009:7). The on-site service lines would be sized to meet the project demands, and public utility easements would be dedicated for all underground facilities. PG&E would extend lines and construct facilities to serve the SPA concurrently with development phases, and the location of this infrastructure would be identified in the final project design. As part of the project approval process, the project applicant(s) of all project phases would coordinate with and meet the requirements of PG&E regarding the extension and locations of on-site infrastructure.

Because PG&E is able to provide natural gas and associated infrastructure to the SPA under the No USACE Permit Alternative, and because the increase in demand for natural gas would not be substantial in relation to existing natural-gas consumption in PG&E's service area, this impact would be considered **direct** and **less than significant**. The **indirect** physical impacts of constructing these facilities are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development. ***[Lesser]***

Mitigation Measure: No mitigation measures are required.

PP

Implementation of the Proposed Project Alternative would increase natural gas demand in the SPA. Natural gas service in Folsom is provided by PG&E through portions of PG&E's 46,000 miles of natural gas distribution pipelines. Buildout of the Proposed Project Alternative would increase natural gas demands by 818.3 MCFH in the PG&E service area (Table 3A.16-5).

PG&E currently has capacity in its system to serve the SPA (Capitol Utilities Specialists 2009:6). Existing natural gas transmission mains in the vicinity of the SPA include: a 6-inch transmission main on the west side of Prairie City Road north of U.S. 50, a 4-inch transmission main on Oak Avenue north of U.S. 50, a 6-inch transmission main at the intersection of East Bidwell Street and Iron Point Road, an 8-inch transmission main on Placerville Road north of U.S. 50, and a 6-inch transmission main at Stonebriar Road and White Rock Road. As described in detail in Chapter 2, "Alternatives," project implementation would require extensions of these existing service lines with the ultimate configuration to be approved by PG&E. Two additional transmission mains and two natural gas regulator stations would also be installed by PG&E to provide service to the project at full build-out.

It is anticipated that 4-inch, 6-inch, and 8-inch transmission mains would be installed in major roadways throughout the SPA and 2-inch transmission mains would be installed in residential areas (Capitol Utilities Specialists 2009:7). Public utility easements would be dedicated for all underground facilities. PG&E would extend lines and construct facilities to serve the SPA concurrently with development phases, and the location of this infrastructure would be identified in the final project design. As part of the project approval process, the project applicant(s) of all project phases would coordinate with and meet the requirements of PG&E regarding the extension and locations of on-site infrastructure.

Because PG&E is able to provide natural gas and associated infrastructure to the SPA under the Proposed Project Alternative, and because the increase in demand for natural gas would not be substantial in relation to existing natural-gas consumption in PG&E's service area, this impact would be considered **direct** and **less than significant**. The **indirect** physical impacts of constructing these facilities are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development.

Mitigation Measure: No mitigation measures are required.

RIM

Buildout of the Resource Impact Minimization Alternative would increase natural gas demands by 694.2 MCFH in the PG&E service area (Table 3A.16-5). This would be approximately 124.1 MCFH less than the Proposed Project Alternative.

Project implementation would require connections to the existing service lines with the ultimate configuration to be approved by PG&E. Two additional transmission mains and two natural gas regulator stations would also be installed by PG&E to provide service to the project at full build-out. PG&E currently has capacity in its system to serve the SPA (Capitol Utilities Specialists 2009:6).

It is anticipated that 4-inch, 6-inch, and 8-inch transmission mains would be installed in major roadways throughout the SPA and 2-inch transmission mains would be installed in residential areas (Capitol Utilities Specialists 2009:7). The on-site service lines would be sized to meet the project demands, and public utility easements would be dedicated for all underground facilities. PG&E would extend lines and construct facilities to serve the SPA concurrently with development phases, and the location of this infrastructure would be identified in the final project design. As part of the project approval process, the project applicant(s) of all project phases would coordinate with and meet the requirements of PG&E regarding the extension and locations of on-site infrastructure.

Because PG&E is able to provide natural gas and associated infrastructure to the SPA under the Resource Impact Minimization Alternative, and because the increase in demand for natural gas would not be substantial in relation to existing natural-gas consumption in PG&E's service area, this impact would be considered **direct** and **less than significant**. The **indirect** physical impacts of constructing these facilities are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development. ***[Lesser]***

Mitigation Measure: No mitigation measures are required.

CD

Buildout of the Centralized Development Alternative would increase natural gas demands by 837.7 MCFH in the PG&E service area (Table 3A.16-5). This would be approximately 19.4 MCFH more than the Proposed Project Alternative.

Project implementation would require connections to the existing service lines with the ultimate configuration to be approved by PG&E. Two additional transmission mains and two natural gas regulator stations would also be installed by PG&E to provide service to the project at full build-out. PG&E currently has capacity in its system to serve the SPA (Capitol Utilities Specialists 2009:6).

It is anticipated that 4-inch, 6-inch, and 8-inch transmission mains would be installed in major roadways throughout the SPA and 2-inch transmission mains would be installed in residential areas (Capitol Utilities Specialists 2009:7). The on-site service lines would be sized to meet the project demands, and public utility easements would be dedicated for all underground facilities. PG&E would extend lines and construct facilities to serve the SPA concurrently with development phases, and the location of this infrastructure would be identified in the final project design. As part of the project approval process, the project applicant(s) of all project phases would coordinate with and meet the requirements of PG&E regarding the extension and locations of on-site infrastructure.

Because PG&E is able to provide natural gas and associated infrastructure to the SPA under the Centralized Development Alternative, and because the increase in demand for natural gas would not be substantial in relation to existing natural-gas consumption in PG&E's service area, this impact would be considered **direct** and **less than**

significant. The **indirect** physical impacts of constructing these facilities are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development. ***[Greater]***

Mitigation Measure: No mitigation measures are required.

RHD

Buildout of the Reduced Hillside Development Alternative would increase natural gas demands by 978.6 MCFH in the PG&E service area (Table 3A.16-5). This would be approximately 160.3 MCFH more than the Proposed Project Alternative.

Project implementation would require connections to the existing service lines with the ultimate configuration to be approved by PG&E. Two additional transmission mains and two natural gas regulator stations would also be installed by PG&E to provide service to the project at full build-out. PG&E currently has capacity in its system to serve the SPA (Capitol Utilities Specialists 2009:6).

It is anticipated that 4-inch, 6-inch, and 8-inch transmission mains would be installed in major roadways throughout the SPA and 2-inch transmission mains would be installed in residential areas (Capitol Utilities Specialists 2009:7). The on-site service lines would be sized to meet the project demands, and public utility easements would be dedicated for all underground facilities. PG&E would extend lines and construct facilities to serve the SPA concurrently with development phases, and the location of this infrastructure would be identified in the final project design. As part of the project approval process, the project applicant(s) of all project phases would coordinate with and meet the requirements of PG&E regarding the extension and locations of on-site infrastructure.

Because PG&E is able to provide natural gas and associated infrastructure to the SPA under the Reduced Hillside Development Alternative, and because the increase in demand for natural gas would not be substantial in relation to existing natural-gas consumption in PG&E's service area, this impact would be considered **direct** and **less than significant**. The **indirect** physical impacts of constructing these facilities are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development. ***[Greater]***

Mitigation Measure: No mitigation measures are required.

Off-Site Elements

Construction of the off-site freeway interchange improvements, the sewer force main, the drainage basin in Sacramento County, and the two roadway connections into El Dorado Hills would not involve construction of new housing or development of new businesses. Therefore, there would be no increased demand for natural gas and infrastructure, and **no direct** or **indirect** impacts would occur.

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.16-10 Increased Demand for Telecommunications Service and Infrastructure. *Project implementation would increase the demand for telecommunications service and infrastructure and would include the extension of existing telecommunication lines.*

On-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80, and no off-site water facilities would be

constructed. Construction of 44 individual rural residences within a 3,500-acre area would represent a very small increase in demand for telecommunications service in the SPA. Individual property owners would be required to coordinate with AT&T or other service provider to obtain telecommunications service. Because the 44 individual rural residences that could be built under the No Project Alternative would result in minimal increases in communications service and because individual property owners would coordinate with the service provider(s) regarding service, this **direct** impact is considered **less than significant**. **No indirect** impacts would occur. ***[Lesser]***

NCP, PP, RIM, CD, RHD

AT&T would provide telecommunications service and associated infrastructure to the SPA. Currently, there are no existing telephone lines in the SPA. AT&T has existing underground telephone lines extending east from Prairie City Road along both side of White Rock Road. In addition, AT&T has existing overhead fiber optic cable that extends west from the El Dorado County line and parallels U.S. 50 on the south side, where it connects to SMUD's 12kV overhead transmission line.

The project would receive service from the Folsom Nimbus Wire Center and the El Dorado Wire Center. Residential service would be provided via fiber-optic cable and commercial and retail service would be provided via copper or fiber-optic cable (Capitol Utility Specialists 2009:7). New infrastructure would generally be placed within the rights-of-way of on-site streets. Extension of lines to serve the SPA would occur concurrently with development phases, and the location of this infrastructure would be identified in the final project design as part of the project approval process.

Because AT&T has capacity to provide service and because the project applicant(s) of all project phases would coordinate with AT&T regarding the extension and locations of on-site infrastructure, this **direct** impact is **less than significant**. The **indirect** physical impacts of constructing these facilities are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

Off-Site Elements

Construction of the off-site freeway interchange improvements, the sewer force main, the detention basin in Sacramento County, and the two roadway connections into El Dorado Hills would not involve construction of new housing or development of new businesses. Therefore, there would be no increased demand for telecommunications service and infrastructure, and **no direct** or **indirect** impacts would occur.

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.16-11 Increased Demand for Cable Television and Communications Service and Infrastructure. *Project implementation would increase the demand for cable television service and infrastructure and would include the extension of existing cable television lines.*

On-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80, and no off-site water facilities would be constructed. Construction of 44 individual rural residences within a 3,500-acre area would represent a very small increase in demand for cable television service in the SPA. Individual property owners would be required to coordinate with the cable television and communications service provider to obtain cable television service.

Because the 44 individual rural residences that could be built under the No Project Alternative would result in minimal increases in cable television service and because individual property owners would coordinate with the cable television/communications service provider regarding service, this **direct** impact is considered **less than significant**. **No indirect** impacts would occur. ***[Lesser]***

NCP, PP, RIM, CD, RHD

Cable television, communications, and infrastructure would be provided by Comcast. Currently, there are no existing cable television facilities in the SPA. In the vicinity of the SPA, Comcast has existing facilities on Prairie City Road and along Iron Point Road north of U.S. 50. These facilities could be extended to serve the SPA. Another service option could include extending overhead on SMUD's existing 12kV overhead transmission line near U.S. 50 and Empire Ranch Road (Capitol Utility Specialists 2009:8).

Comcast would install a fiber-optic/coaxial cable hybrid system in the SPA. New infrastructure would generally be placed within the rights-of-way of on-site streets. Extension of lines to serve the SPA would occur concurrently with development phases, and the location of this infrastructure would be identified in the final project design as part of the project approval process. Because Comcast has the capacity to serve project development, and because the project applicant(s) of all project phases would coordinate with Comcast regarding the extension and locations of on-site infrastructure, this **direct** impact is considered **less than significant**. The **indirect** physical impacts of constructing these facilities are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

Off-Site Elements

Construction of the off-site freeway interchange improvements, the sewer force main, the detention basin in Sacramento County, and the two roadway connections into El Dorado Hills would not involve construction of new housing or development of new businesses. Therefore, there would be no increased demand for cable television and communications service and infrastructure, and **no direct** or **indirect** impacts would occur.

Mitigation Measure: No mitigation measures are required.

IMPACT 3A.16-12 Increased Energy Demand. *Project implementation would increase energy consumption during construction and operation.*

On-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80, and no off-site water facilities would be constructed. Construction of 44 individual rural residences within a 3,500-acre area would increase the consumption of energy during project-related construction activities. Energy in the form of fuel and electricity would be consumed during this period by construction vehicles and equipment, trucks delivering equipment and supplies, and construction worker commute trips. No unusual characteristics are expected that would necessitate the use of construction equipment that would be less energy-efficient than at comparable construction sites in other parts of the Sacramento region. The 44 individual rural residences that could be built under the No Project Alternative would result in minimal increases in demand for energy related to heating and cooling systems, lighting, appliances, and other miscellaneous energy requirements. Therefore, this **direct** impact is considered **less than significant**. **No indirect** impacts would occur. ***[Lesser]***

Project implementation would increase the consumption of energy for the duration of the project's construction and operation in the form of electricity, natural gas, and petroleum products. The primary energy demands during construction would be associated with construction vehicle fueling over the 19-year construction period. Energy in the form of fuel and electricity would be consumed during this period by construction vehicles and equipment operating on the site, trucks delivering equipment and supplies to the site, and construction workers driving to and from the site. There are no unusual project characteristics that would necessitate the use of construction equipment that would be less energy-efficient than at comparable construction sites in other parts of the Sacramento region. Therefore, it is expected that construction fuel consumption associated with the project would not be any more inefficient, wasteful, or unnecessary than at other construction sites in the region.

Energy would also be used for project operation related to heating and cooling systems, lighting, appliances, and other miscellaneous energy requirements. Design guidelines incorporated into the project identify energy conservation measures that would minimize inefficient energy usage and promote conservation of energy resources. These measures include:

- Incorporating site design measures that reduce heating and cooling needs by effectively orienting buildings toward southern exposures;
- Incorporating high-quality, energy efficient glazing to reduce heat loss and gain;
- Installing energy efficient appliances, windows, insulation; solar technology such as rooftop photovoltaic cell arrays; automatic lighting and thermostat features; and other available technologies to reduce energy demands; and
- Designing commercial and civic building and residential dwelling unit to allow for the possible installation of alternative energy technologies including active solar, wind, or other emerging technologies.

The project would comply with Building Energy Efficiency Standards included in Title 24 of the California Code of Regulations. Title 24 identifies specific energy efficiency requirements for building construction and systems operations that are intended to provide for efficient energy usage over the long-term.

Energy consumption would also be associated with vehicle trips resulting from residents and workers commuting on and off the SPA to jobs and commercial services. The project would provide residential land uses and a wide range of commercial services and employment opportunities for future residents in the SPA, reducing the need to travel outside the SPA. The design and placement of commercial and industrial land uses would result in the ability of employees to walk to convenience services and would provide nearby access to a system of walking trails and public transportation. An Air Quality Management Plan is currently being prepared that identifies measures that are intended to minimize air quality impacts associated with the project's vehicle trip generation. In addition to reducing the project's air quality impacts, these measures would also reduce the project's overall energy consumption.

Because the project would incorporate the design measures described above, comply with Building Energy Efficiency Standards (Title 24 of the California Code of Regulations), and implement an Air Quality Management Plan, the project would not be expected to cause the inefficient, wasteful or unnecessary consumption of energy, and this **direct** impact is considered **less than significant**. The **indirect** impacts associated with consumption of energy (e.g., construction of additional power generation plants and impacts associated therewith such as increased consumption of water at the plants, loss of biological habitat or cultural resources as result of power plant construction, etc.) are **uncertain** and are too far removed in place and time from the project to allow for a meaningful evaluation of impacts. Therefore, it would be too speculative to reach an impact conclusion regarding these indirect impacts. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

Off-Site Elements

Construction of the off-site freeway interchange improvements, the sewer force main, the detention basin, and the two roadway connections into El Dorado Hills would increase the consumption of energy during project-related construction activities. Energy in the form of fuel and electricity would be consumed during this period by construction vehicles and equipment, trucks delivering equipment and supplies, and construction worker commute trips. There are no unusual project characteristics that would necessitate the use of construction equipment that would be less energy-efficient than at comparable construction sites in other parts of the Sacramento region. Therefore, it is expected that construction fuel consumption associated with the project-related off-site elements would not be any more inefficient, wasteful, or unnecessary than at other construction sites in the region.

The off-site freeway interchange improvements, the sewer force main, the detention basin, and the two roadway connections into El Dorado Hills would not involve construction of new housing or development of new businesses that would lead to an increase in residents or employees in the area and thus result in an increase in energy consumption. Therefore, there would be minimal amounts of increased energy demand during construction, and this **direct** impact is considered **less than significant**. **No indirect** impacts would occur.

Mitigation Measure: No mitigation measures are required.

3A.16.4 Residual Significant Impacts

Impacts associated with increased demand for SRCSD off-site wastewater collection and conveyance facilities; increased temporary and short-term and long-term generation of solid waste; and increased demands for electrical, natural gas, and ommunications service and infrastructure are considered less than significant. Therefore, there would be no residual significant impacts with respect to these issue areas. Implementation of mitigation measures contained in this section would reduce impacts associated with increased demand for on-site wastewater collection and conveyance facilities and the off-site force main to a less-than-significant level.

The project would increase demand for EID wastewater collection and conveyance facilities and the El Dorado Hills WWTP facilities. It is unknown if existing EID wastewater collection and conveyance facilities and El Dorado Hills WWTP facilities have the capacity to accommodate wastewater flows generated by project development, and project development could directly and indirectly contribute to the need for wastewater collection and conveyance facilities and treatment plant improvements. Therefore, the project could contribute to currently unknown but potentially significant environmental impacts associated with improvements to treatment plant facilities for which feasible mitigation may not be available to reduce impacts to a less-than-significant level, resulting in potentially significant and unavoidable residual impacts.

In addition, project implementation would increase demand for SRWTP facilities and would contribute to the need to expand the SRWTP; therefore, the project would contribute indirectly to one significant and unavoidable impact (related to air quality) identified in the 2020 Master Plan EIR. Therefore, a residual significant and unavoidable impact would occur.

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This section was prepared by RMC Water and Environment.

3B.16 UTILITIES AND SERVICE SYSTEMS – WATER

3B.16.1 AFFECTED ENVIRONMENT

This discussion places an emphasis on describing the affected environment for locations where physical environmental impacts would occur as a result of the construction and operation of the Off-site Water Facilities. For this issue area, the discussion is focused to Zone 4 of the "Water" Study Area.

POTABLE WATER DISTRIBUTION

Potable water supplies for the "Water" Study Area are provided by numerous public and private wholesale and retail water service providers. These public and private entities acquire water from surface and groundwater supplies, treat the water, and distribute the treated water to users. Within Sacramento County, there are 28 water purveyors that are responsible for treating and distributing local sources of surface water and groundwater to their respective customer bases. The Sacramento County Water Agency (SCWA) is responsible for providing water to all areas within the County not served by one of the 28 purveyors and serves areas in Zone 40, which overlaps portions of Zone 4 of the Off-site Water Facilities Study Area. The City is responsible for providing potable water to users within its city limits and would be responsible for supplying water to SPA.

New water supply infrastructure proposed as part of the Off-site Water Facilities would be constructed to serve areas within the SPA and, therefore, would be under the purview of the City. The new water system constructed in conjunction with the project would be separate from the City's system to the north of U.S. 50. The City's current total water demand (2006) for areas within the city limits is 27,392 acre-feet per year (AFY) and includes non-potable industrial water use at Aerojet. The 5,600 AFY of demand for the SPA is separate from the City's current demand and would be served by separate infrastructure. Water use within the current city limits is projected to experience a slight decrease by 2030 to 27,069 AFY based on average unit water demand factors applied to City land uses assumed in the City's 2005 Urban Water Management Plan (UWMP). This minor decrease in water use is largely attributed to a decrease in water use for construction activities. However, with the recent passage of Senate Bill (SB) 7 – Statewide Water Conservation, the estimates are likely to be further reduced depending on the City's established baseline usage.

Pursuant to an agreement between the City and Aerojet, industrial water demands for Aerojet will be met through either treated groundwater from Aerojet's Groundwater Extraction and Treatment (GET) Program or from a new source of water that Aerojet would pay the City to acquire and deliver. This agreement would effectively reduce projected potable water demands within the City by 2,731 AFY in 2030 to 24,338 AFY.

Central Valley Project

Water supplies that the City proposes to acquire from NCMWC are derived from the Central Valley Project (CVP), which is operated by U. S. Bureau of Reclamation (Reclamation). The CVP consists of 20 dams and reservoirs, 11 power plants, and 500 miles of major canals, as well as conduits, tunnels, and related facilities and are described in further detail in Section 3B. 9, "Hydrology and Water Quality – Water."

Water supplies managed as part of the CVP include approximately 9 million AFY (MAF) of water with annual deliveries averaging approximately 7 MAF of water for agricultural, urban, and wildlife uses. Of this total, approximately 600,000 AFY is allocated for municipal and industrial uses. In addition, approximately 800,000 AFY is allocated to fish and wildlife habitat and 410,000 AFY to state and Federal wildlife refuges and wetlands, pursuant to the Central Valley Project Improvement Act (CVPIA).

SANITARY SEWER COLLECTION

Sanitary sewer collection and treatment service within eastern portions of Sacramento County, including the City, is provided by the Sacramento Regional County Sanitation District (SRCSD) and its cooperating agency Sacramento Area Sewer District (SASD), formerly County Sanitation District No. 1 (CSD-1). The current SASD service area is approximately 286 square miles with more than 2,700 miles of sewer lines and serves over 950,000 people (CSD-1 2006). Zone 4 of the "Water" Study Area traverses the Aerojet Trunk Shed, which is served by the Folsom East and Aerojet Interceptors. These interceptors connect into the Bradshaw Interceptor, which conveys wastewater to the Sacramento Regional Wastewater Treatment Plant, west of Elk Grove, south of Sacramento.

The 2006 SASD Draft Master Plan Update (master plan) identifies the need for several new sewers in the vicinity of Zone 4 of the "Water" Study Area, including a new trunk line to serve the Aerojet property SRCSD is also proposing to upgrade the Mather Interceptor along Douglas Road and Sunrise Boulevard.

ELECTRICAL GENERATION AND TRANSMISSION

The Sacramento Municipal Utility District (SMUD) provides electrical service to Sacramento County. SMUD operates several 12- and 69-kilovolt (kV) overhead electrical lines along portions of Folsom Boulevard, Prairie City Road, Sunrise Boulevard, White Rock Road, Excelsior Road, Florin Road, and Douglas Road. In the eastern portion of the Off-site Water Facilities Study Area, SMUD operates a series of 230-kV electrical transmission lines that roughly parallel Grant Line Road and are part of the state's larger electrical transmission grid.

NATURAL GAS

Pacific Gas and Electric Company (PG&E) is the natural gas service provider for most of Sacramento County. Natural gas is delivered to Zone 4 of the "Water" Study Area through PG&E's existing network of underground natural gas pipelines. These pipelines are generally less than eight inches in diameter and housed in major roadways including Folsom Boulevard, Mather Boulevard, Sunrise Boulevard, Douglas Road, and Florin Road.

SOLID WASTE

Solid waste generated within Zone 4 of the "Water" Study Area is collected by the County or private carrier and transported to local transfer station(s) prior to disposal at Kiefer Landfill, which is located on 1,084 acres east of the intersection of Kiefer Boulevard and Grant Line Road. Kiefer Landfill has a permitted capacity to receive 10,800 tons of solid waste per day, and its estimated closure date is in 2064 (California Integrated Waste Management Board 2007). Kiefer Landfill is classified as a Class III municipal solid waste landfill facility and is permitted to accept general residential, commercial, and industrial refuse for disposal and has a total capacity of 117 million cubic yards – or 58 million tons. Currently, the landfill is operating below permitted capacity and will have capacity for the next 40 years based on current disposal rates (Sacramento County 2008b).

All non-recyclable solid waste generated during construction and operation of the Off-site Water Facilities is expected to ultimately be disposed of at Kiefer Landfill.

3B.16.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

There are no Federal plans, policies, regulations, or laws related to utilities and service systems that apply to the Off-site Water Facility Alternatives under consideration.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

The following state plans, policies, regulations, and laws related to public utilities are relevant to the Off-site Water Facilities alternatives, and are described in detail in Section 3A.16, "Utilities and Service Systems – Land:"

- California Integrated Waste Management Act
- California Public Utilities Commission Decision 95-08-038
- California Building Energy Efficiency Standards

California Green Building Standards

The draft 2010 California Green Building Standards (CALGREEN) Code was unanimously adopted by the California Building Standards Commission and requires all new buildings in the state to be more energy efficient and environmentally responsible. CALGREEN will require that every new building constructed in California reduce water consumption by 20%, divert 50% of construction waste from landfills and install low pollutant-emitting materials. It also requires separate water meters for nonresidential buildings' indoor and outdoor water use, with a requirement for moisture-sensing irrigation systems for larger landscape projects and mandatory inspections of energy systems (e.g., heat furnace, air conditioner and mechanical equipment) for nonresidential buildings over 10,000 square feet to ensure that all are working at their maximum capacity and according to their design efficiencies. CALGREEN is scheduled to become effective on January 1, 2011, the current draft is provided for informational purposes only pending publication.

Senate Bill 7, Statewide Water Conservation

The goal of Senate Bill (SB) 7 is to require state to achieve a 20% reduction in urban per capita water use in California by December 31, 2020. SB 7 also includes an incremental goal of reducing per capita water use by 10% by December 31, 2015. The supplier must use one of the following methods for developing its urban water use target:

- 80% of the baseline per capita daily water use.
- Per capita daily water use that is estimated using the sum of an indoor residential use of 55 gallons per capital per day (gpcd) for landscape irrigated through dedicated or residential meters or connections, the model water efficient landscaping ordinance water efficiency equivalent + CII use equivalent to 90% of baseline CII water use by 2020.
- 95% of applicable state hydrologic region target as set forth in state's draft 20x2020 Water Conservation Plan.
- Other methods identified and developed by the California Department of Water Resources (DWR) through a public process and reported to the legislature no later than December 31, 2010.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

Water Supply

The Sacramento County General Plan Public Facilities Element encourages new development to be served by existing public water systems, either by annexation to an existing water purveyor's service area or by extension or creation of a benefit zone of the SCWA (Sacramento County 1993). Objectives of the General Plan policies include minimizing impacts on in-stream water flows in the Sacramento and American Rivers and consolidating water service under existing public water systems.

Pursuant to California Water Code Section 10610, the City of Folsom adopted its 2005 UWMP in April 2006 (City of Folsom 2006). The UWMP provides information on existing and projected water supplies, assesses the

reliability of these supplies given a range of hydrologic conditions, identifies the various customer types and their existing and projected demands, and provides a variety of water management strategies to reduce demand and conserve water resources. Although the "Water" Study Area does not include the city limits, it does include portions of the City's water service area south of Folsom Boulevard. Additionally, the Off-site Water Facilities water supplies and demands from the Folsom South of 50 SPA were not considered in the 2005 UWMP.

The City signed the January 2000 Water Forum Agreement (WFA), a nonbinding memorandum of understanding (MOU) with two coequal objectives: 1) to provide a reliable and safe water supply for the region's economic health and planned development to the year 2030; and 2) to preserve the fishery, wildlife, recreational, and aesthetic values of the Lower American River. The MOU includes a Purveyor Specific Agreement for the City that identifies actions for achieving reductions in surface water diversion in dry years.

Solid Waste

The California Integrated Waste Management Act (CIWMA) of 1989, also commonly known as Assembly Bill (AB) 939, requires local agencies to implement source reduction, recycling, and composting in efforts to divert 50% of their solid waste from landfills by the end of 2000. This act further required every city and county in California to prepare a Source Reduction and Recycling Element, a report describing (1) the chief characteristics of each jurisdiction's waste, (2) existing waste diversion programs and rates of waste diversion, and (3) the new or expanded programs the jurisdiction intends to implement to achieve the mandated rates of diversion. Waste diversion rates within the City have ranged from 27 to 32% since 2003 (CIWMB 2008).

3B.16.3 Environmental Consequences and Mitigation Measures

Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. These thresholds also encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. For the purposes of this analysis, an impact to existing and proposed utilities and service systems would be significant if the Off-site Water Facilities would:

- exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- require or result in the construction of new water, drainage, or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- require new or expanded water supply entitlements available to serve the project;
- result in a determination by the wastewater treatment provider, which serves or may serve the project, that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- result in substantial disruption(s) to existing public and/or provide utility service providers and supporting infrastructure;
- be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs; or
- not comply with Federal, state, and local statutes and regulations related to solid waste.

Energy Efficiency

In accordance with criteria adopted from Appendix F of the State CEQA Guidelines, and encompassing the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts, Off-site Water Facilities-related impacts to energy resources are considered to be potentially significant if the Off-site Water Facilities would:

- Result in wasteful, inefficient, and unnecessary consumption of energy during the project construction, operation, maintenance, and/or removal that cannot be feasibly mitigated; or
- Preempt future energy development or future energy conservation.

ANALYSIS METHODOLOGY

This analysis provides an evaluation of the potential impacts to existing utilities and service systems based on actions outlined in Chapter 2, "Alternatives." Findings and conclusions presented in the impact analysis are based on foreseeable changes to existing conditions as result of the Off-site Water Facilities and the significance criteria presented above. Given that implement of the Off-site Water Facility Alternatives involves the construction of water supply conveyance and treatment facilities, the "B," or "Water" sections of Chapter 3 provide a comprehensive analysis of the range of potential environmental effects of the Off-site Water Facility Alternatives currently under consideration.

ISSUES NOT DISCUSSED FURTHER IN THIS EIR/EIS

The Off-site Water Facilities as described in Chapter 2, "Alternatives" include the construction of new water supply conveyance and treatment infrastructure. The specific impacts associated with construction, such as air quality degradation and noise generation, as well as other construction-related impacts are addressed in each technical section throughout the "B," or "Water" sections of Chapter 3 and Chapter 4, "Other Statutory Requirements."

IMPACT ANALYSIS

Impacts that would occur under each of the Off-site Water Facility Alternatives are identified as follows:

NCP (No USACE Permit Alternative)

PA (Proposed Off-site Water Facility Alternative)

1 (Off-site Water Facility Alternative 1 – Raw Water Conveyance – Gerber/Grant Line Road Alignment and White Rock WTP)

1A (Off-site Water Facility Alternative 1A Raw Water Conveyance – Gerber/Grant Line Road Alignment Variation and White Rock WTP)

2 (Off-site Water Facility Alternative 2 Treated Water Conveyance – Douglas Road Alignment and Vineyard SWTP)

2A (Off-site Water Facility Alternative 2A Treated Water Conveyance – Excelsior Road Alignment Variation and Vineyard SWTP)

2B (Off-site Water Facility Alternative 2B Treated Water Conveyance – North Douglas Tanks Variation and Vineyard SWTP)

3 (Off-site Water Facility Alternative 3 Raw Water Conveyance – Excelsior Road Alignment and White Rock WTP)

3A (Off-site Water Facility Alternative 3A Raw Water Conveyance – Excelsior Road Alignment Variation and White Rock WTP)

4 (Off-site Water Facility Alternative 4 Raw Water Conveyance – Easton Valley Parkway Alignment and Folsom Boulevard WTP)

4A (Off-site Water Facility Alternative 4A Raw Water Conveyance – Easton Valley Parkway Alignment Variation and Folsom Boulevard WTP).

The impacts for each alternative are compared relative to the PA at the end of each impact conclusion (i.e., similar, greater, lesser).

IMPACT 3B.16-1 Generation of Wastewater. *The operation of the Off-site Water Facility Alternatives would generate wastewater that would require off-site conveyance and treatment.*

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A

Implementation of the Off-site Water Facility Alternatives would not directly or indirectly exceed wastewater treatment requirements of the Central Valley RWQCB, or exceed the capacity of the SRCSD's Folsom Interceptor. The Off-site Water Facility Alternatives would involve the use of surface water supplies, which currently meets strict drinking water standards, and therefore, the Off-site Water Facilities would not involve the use of a water supply that could otherwise contribute to a violation of any water quality standards or WDRs for SRCSD. Potential indirect effects to SRCSD's ability to meet future WDRs and water quality standards as a consequence of growth within the SPA is broadly evaluated at a programmatic level in Section 3A.16.3 and in the context of growth-inducing impacts in Chapter 4, "Other Statutory Requirements."

Once operational, the WTP would generate a very minor quantities of wastewater and as described and analyzed in more detail in Section 3B.9, "Hydrology and Water Quality – Water," all solids generated from treatment-related operations would be hauled off-site and not into the sanitary sewer system. Further and in the context of the SPA and the amount of sanitary sewer conveyance and treatment capacity required to service the SPA at full buildout, the Off-site Water Facilities WTP's additional contribution would be negligible and ultimate connection would need to occur through the trunk system constructed for the SPA. For this reason, the Off-site Water Facility Alternatives are not expected to interfere with SRCSD's existing commitments for wastewater service and the **direct** and **indirect** impacts to existing and planned wastewater infrastructure are expected to be **less than significant**. This issue is discussed further in the context of growth-inducing impacts in Chapter 4, "Other Statutory Requirements." ***[Similar]***

The Off-site Water Facilities constructed under these alternative would connect with existing or planned sanitary sewer infrastructure and would not require additional off-site wastewater conveyance or treatment infrastructure. Therefore, no additional off-site impacts beyond those identified in "B" or "Water" sections of Chapter 3 for all the Off-site Water Facility Alternative would occur. Because the alternatives would connect with existing or planned sanitary sewer infrastructure, the **direct** and **indirect** impacts would be **less than significant**. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

IMPACT 3B.16-2 Changes in Operation of the Central Valley Project Water Supply Entitlement. *The operation of the Off-site Water Facility Alternatives would not infringe upon the water rights of other legal users of water.*

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A

The Off-site Water Facility Alternatives would involve a slight change in operation of the CVP service system to deliver water to City through the Freeport Project service area instead of NCMWC. The assigned CVP water entitlement would continue to be stored in upstream reservoirs, but would be delivered under an M&I schedule as opposed to the existing agricultural delivery schedule. Instead of diverting water at NCMWC's service area, the Off-site Water Facilities would divert CVP water at the Freeport Project intake approximately 20 miles downstream.

As described in more detail in Section 3B.9, "Hydrology and Water Quality – Water," and shown in Table 3B.9-3, the change in the current delivery schedule would result in a minor increase in the diversion of surface water during winter and spring months, however, this increase equates to less than 0.04% in relation to the minimum flows at Freeport during these months. This increase would be offset by a more substantial decrease in diversions during the months of July and August, which is the height of the irrigation season or when demands for surface water are at their highest. Notwithstanding this change in the CVP delivery schedule, the remaining changes to flows within the Sacramento River as a result of the Off-site Water Facilities area are largely attributed to the lower quantity of return water that makes it back to the river following use within the SPA as compared to the NCMWC. However, given that this minor increase would occur during periods when higher flows are present within the Sacramento River, the operation of the Off-site Water Facilities would not significantly affect other diversions within the Sacramento River and Delta, including SWP and CVP water exports. These **direct** and **indirect** impacts are considered **less than significant**. ***[Similar]***

As described in Chapter 2, "Alternatives," all build-out alternatives for the SPA would require less than 5,600 AFY to supply both potable and non-potable water demands during normal and dry years. As provided in Table 3B.9-3, the purchasing and acquisition of 8,000 AFY of CVP water from NCMWC would be sufficient to accommodate demands from all uses within the SPA, including demands during dry years. The conclusions contained in the Water Supply Assessment in Appendix M further confirm these findings and provide a level of conservation that could foreseeable be less than required in the future with the passage of SB 7 in 2009. The CVP supply in question has been delivered for over the past 50 years and given that the Freeport Project diversion is an existing diversion facility north of the Delta, this supply is not subject to the controversy currently centered around conveyance through and diversion of CVP water supplies from the Delta. Additionally and as support in Chapter 2, "Alternatives," the City has entered into preliminary MOUs with the necessary parties (e.g., SCWA) required to facilitate wheeling of the secured CVP supplies. Based on these considerations, the CVP supply and conveyance agreements are considered reliable and sufficient to meet all water demands generated from uses within the SPA. Based on these circumstances, these **direct** and **indirect** impacts are considered **less than significant**. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

IMPACT 3B.16-3 Potential Disruption to Existing Utilities and Infrastructure. *Construction of the Off-site Water Facilities has the potential to disrupt existing public and private utilities and infrastructure.*

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A

Several municipal and private utilities, including those owned and operated by SCWA, PG&E, SMUD, SRCSD, and CSD-1, have existing underground utilities and future projects proposed within Zone 4 of the Off-site Water Facilities Study Area. Construction activities associated with the Off-site Water Facility Alternatives could

potentially result in a disturbance of existing utilities or conflict with planned utility projects. Without a clear understanding of the location and placement of existing utilities, including existing sanitary sewer, natural gas, and potable water lines, Off-site Water Facilities-related trenching operations could come into contact with such utilities thereby disrupting service and potentially endangering construction workers. This **direct** impact is considered **potentially significant**. **Indirect** impacts from potential service disruptions would also be **potentially significant** if the duration of the outage extend for longer than few days. ***[Similar]***

Potential impacts to SCWA as a result of a reduced conveyance capacity within the Freeport Project would be minimized through the compliance with the conditions contained within the MOU between the City and SCWA as provided in Appendix M-III. Even though the MOU is a non-binding agreement, without it the Off-site Water Facility Alternatives could not occur. For this reason, **direct** and **indirect** operational impacts to SCWA would be **less than significant**. ***[Similar]***

Mitigation Measure 3B.16-3a: Minimize Utility Conflicts by Implementing an Underground Services Alert.

Underground utilities and service connections shall be identified prior to commencing any excavation work through the implementation of an Underground Services Alert (USA). The exact utility locations will be determined by hand-excavated test pits dug at locations determined and approved by the construction manager (also referred to as "pot-holing"). Temporary disruption of service may be required to allow for construction. No service on such lines would be disrupted until prior approval is received from the construction manager and the service provider.

Implementation: City of Folsom Utilities Department

Timing: Prior to construction of all Off-site Water Facilities

Enforcement: Public and Private Utilities, where applicable, including: Sacramento County Sanitation District, Pacific Gas and Electric, Sacramento Municipal Utility District, City of Folsom Public Works Department, Sacramento County Department of Water Resources, Sacramento County Water Agency, City of Rancho Cordova Public Works Department, Sacramento County Roads and Airports, and Aerojet Corporation.

Mitigation Measure 3B.16-3b: Coordinate with Utility Providers and Implement Appropriate Installation Methods to Minimize Potential Utility Service Disruptions.

Prior to installation, the City shall consult with SCWA, SRCSD, CSD-1, and PG&E to determine proper installation methods and final design criteria to minimize the potential for disruptions to existing and planned utilities.

Implementation: City of Folsom Utilities Department

Timing: Prior to construction of all Off-site Water Facilities

Enforcement: Public and Private Utilities, where applicable, including: Sacramento County Sanitation District, Pacific Gas and Electric, Sacramento Municipal Utility District, City of Folsom Public Works Department, Sacramento County Department of Water Resources, Sacramento County Water Agency, City of Rancho Cordova Public Works Department, Sacramento County Roads and Airports, Golden State Water Company and Aerojet Corporation.

Implementation of Mitigation Measures 3B.16-3a and 3B.16-3b would reduce potentially significant impacts under Alternatives PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A to a **less-than-significant** level by requiring consultation with the respective utility operators to determine potential utility conflicts.

IMPACT 3B.16-4 Increased Generation of Solid Waste. *Construction and operation of the Off-site Water Facilities would generate solid waste, which could impact the City's ability to comply with solid waste diversion requirements of the state.*

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A

Construction of the Off-site Water Facilities would generate substantial amounts of construction debris, especially during the construction of the structural foundations, and to a lesser extent, during the installation of the conveyance pipeline. Some materials excavated during Off-site Water Facilities trenching would be used as fill materials at the WTP or storage tanks sites(s). Once collected, non-reusable solid wastes generated during construction (including recyclable materials) would be taken to the nearest Materials Recovery Facility/transfer station with non-recyclables being transferred to the Class III, Kiefer Landfill.

As provided in the affected environment discussion, Kiefer Landfill has 40 years of remaining capacity based on current disposal rates. The quantity of solid wastes generated during WTP operations would be minor, consisting primarily of domestic-type wastes, and managed on-site by the City. Sludge-handling following dewatering and drying would be land-applied as agricultural fertilizer to willing buyers or hauled to the Kiefer Landfill. Neither the total annual solid waste generated by the Off-site Water Facilities, nor the degree of increase from existing conditions, would be considered a significant level that would potentially exceed landfill capacity.

The City as part of the operation of the Off-site Water Facilities would, to the extent applicable, participate in existing recycling and waste diversion programs. The Off-site Water Facilities would ensure suitable storage locations and containers for recyclable materials in or around the project buildings and public outdoor spaces, and the design, location, and maintenance of recycling collection and storage areas. Therefore, the contribution of the Off-site Water Facilities to the overall waste stream in and of itself is not considered significant, and with continued participation and adherence to these programs, implementation of the Off-site Water Facilities would not require or result in new or expanded landfill facilities or impede the City's ability to meet mandated waste diversion requirements. These **direct** and **indirect** impacts are considered **less than significant**. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

IMPACT 3B.16-5 Potential Inefficient Energy Consumption. *Construction and operation of the Off-site Water Facilities could result in the inefficient consumption of energy thereby adversely affecting current and future energy conservation efforts.*

NCP, PA 1, 1A, 3, 3A, 4, and 4A

During construction, the Off-site Water Facility Alternatives would consume energy in two general forms: 1) the fuel energy consumed by construction vehicles and equipment; and 2) bound energy used in the manufacturing and processing of construction materials such as steel, concrete, pipes, lumber, and glass. Energy in the form of fuels used for construction vehicles and other equipment would be used during site clearing, grading, and construction. Such fuel energy use would be temporary and not represent a significant or permanent commitment to the use of energy. In addition, given high fuel prices, contractors have a strong financial incentive to avoid wasteful, inefficient, and unnecessary consumption of energy during construction.

Though Off-site Water Facilities construction is not anticipated to occur until 2010, substantial reductions in energy inputs for construction materials can be achieved by selecting building and construction materials composed of recycled materials, which require substantially less energy to produce than from non-recycled materials. Examples of recycled building materials include the use of: 1) recycled nylon in interior carpeting; 2) recycled plastic for moldings and interior finishes; 3) fly ash in concrete; and 4) recycled rubber in asphalt. The extent to which recycled materials would be used during construction of the Off-site Water Facilities has not yet been determined.

There would also be some non-renewable petroleum-based fuel savings resulting from Mitigation Measures 3B.2-1a and 3B.2-1b in Section 3B.2, "Air Quality – Water," which would prevent the unnecessary idling of vehicles and equipment and require that vehicles and equipment be properly maintained. In addition, a Solid Waste Diversion and Recycling Plan (or such other documentation to the satisfaction of the City) would be required to be in place that demonstrates the diversion from landfills and recycling of all non-hazardous, salvageable, and re-useable wood, metal, plastic, and paper products during construction and demolition activities. This would minimize the waste of bound energy used in the original manufacturing and processing of construction materials. Taken together, these Off-site Water Facilities characteristics and mitigation measures demonstrate that the proposed Off-site Water Facilities would assist the region in increasing its reliance on renewable, non-petroleum-based energy resources. This **direct** impact would be **potentially significant**. ***[Similar]***

Off-Site Water Facilities Operations

The Off-site Water Facilities WTP, booster pump station, and distribution infrastructure would increase demands for electricity within the "Water" Study Area. Based on energy consumption calculations used to quantify greenhouse gas emissions (GHGs) and provided in Appendix M, operations of the collective Off-site Water Facilities at build-out within the SPA could require upwards of 20.7 megawatts hours (MWh) annually. This increase in energy use would represent a new demand for electricity. With the implementation of measures recommended in Mitigation Measure 3B.4-1b to minimize the generation of GHGs, these measures would also promote energy efficiency consistent with standards contained in Title 24 of the California Code of Regulations (2007) and CALGREEN, aimed at the incorporation of energy-conserving design and construction.

Existing electrical distribution infrastructure exists adjacent each of the WTP sites, and any improvements and extensions required to accommodate the Off-site Water Facilities would be limited to on-site locations and performed in consultation with SMUD prior to installation.

Because the Off-site Water Facilities would not result in an extended disruption in service provided by a utility and would be operated in the most efficient manner possible, the **potentially significant direct** impact generated by additional power supply requirements and would be reduced to a less-than-significant level. ***[Similar]***

Mitigation Measures: Implement Mitigation Measures 3B.4-1a and 3B.4-1b.

2, 2A, and 2B

The impact discussion for the above alternatives, as it relates to construction-related energy consumption, would generally apply to Alternatives 2, 2A, and 2B. However, given that these alternatives further integrate the Off-site Water Facilities components with existing water supply infrastructure operated by SCWA, additional efficiencies would be expected in terms of the reduced length of the conveyance alignment, especially for Off-site Water Facility Alternative 2B, and a corresponding reduction in the need for the manufacturing and processing of construction materials such as steel, concrete, pipes, and lumber for the WTP. This **direct** impact would be **less than significant**. [***[Lesser]***

Off-site Water Facility Alternatives 2, 2A, and 2B would integrate water treatment operations into SCWA's Vineyard SWTP thereby potentially achieving additional energy efficiencies by requiring the Vineyard SWTP to

operate closer to its design capacity. However, the new power requirements generated under Alternative 2B, the most-energy efficient Off-site Water Facility Alternatives, could still exceed 7,000 MWh per year. This **direct** impact is **potentially significant**. ***[Lesser]***

Mitigation Measures: Implement Mitigation Measures 3B.4-1a and 3B.4-1b.

With the application of Mitigation Measures 3B.4-1a and 3B.4-1b, the City's energy usage during construction and operation of the Off-site Water Facilities would be minimized to the maximum extent feasible and therefore the impact would be reduced to a **less-than-significant** level.

3B.16.4 RESIDUAL SIGNIFICANT IMPACTS

Construction of the Off-site Water Facility Alternatives would involve activities that could directly impact existing utility services; however, with mitigation implementation, the identified impacts would reduced to less-than-significant levels through proper notification and coordination. Operational impacts would be minimized and addressed through interagency MOUs and therefore, are not expected to result in any residual significant unavoidable impacts to public and private utility and service systems.

Water supplies proposed for use within the SPA have a demonstrated reliability over the historic record and would not lead to further limits on other existing or potential water right users. Based on these circumstances, the proposed CVP water supply would be sufficient to accommodate projected water demands and, therefore, no residual, significant and unavoidable impacts would occur.

Construction and operation of the Off-site Water Facilities would be conditioned to be as energy efficient as feasible and would be required to maximize recycling opportunities to minimize the quantity of solid waste transported to existing landfills. Based on these circumstances, no residential, significant and unavoidable impacts related to energy use would occur.

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This section was prepared by RMC Water and Environment.

3B.17 GROUNDWATER RESOURCES – WATER

3B.17.1 AFFECTED ENVIRONMENT

The following sections describe the groundwater basin and associated subbasins that underlie the Off-Site Water Facilities Study Area. Exhibit 3B.17-1 illustrates the geographic extent of these subbasins in relation to the Off-Site Water Facilities Study Area. These subbasins are located within the Sacramento Valley Groundwater Basin and are described in detail below.

SACRAMENTO VALLEY GROUNDWATER BASIN

The Sacramento Valley Groundwater Basin is the major groundwater basin in the Sacramento River Hydrologic Region and is considered a single aquifer system (Domagalski and Brown, 1996). The storage capacity of the Sacramento Valley Groundwater Basin is estimated at approximately 114 million AF beginning at depths of 20 to 60 feet below the land surface. Groundwater provides about 31% of the water supply for urban and agricultural uses in the region. This groundwater basin is comprised of 18 groundwater smaller subbasins, which include the South and North American Subbasins. These two groundwater subbasins underlie the Off-site Water Facilities Study Area and are described further below.

NORTH AMERICAN GROUNDWATER SUBBASIN

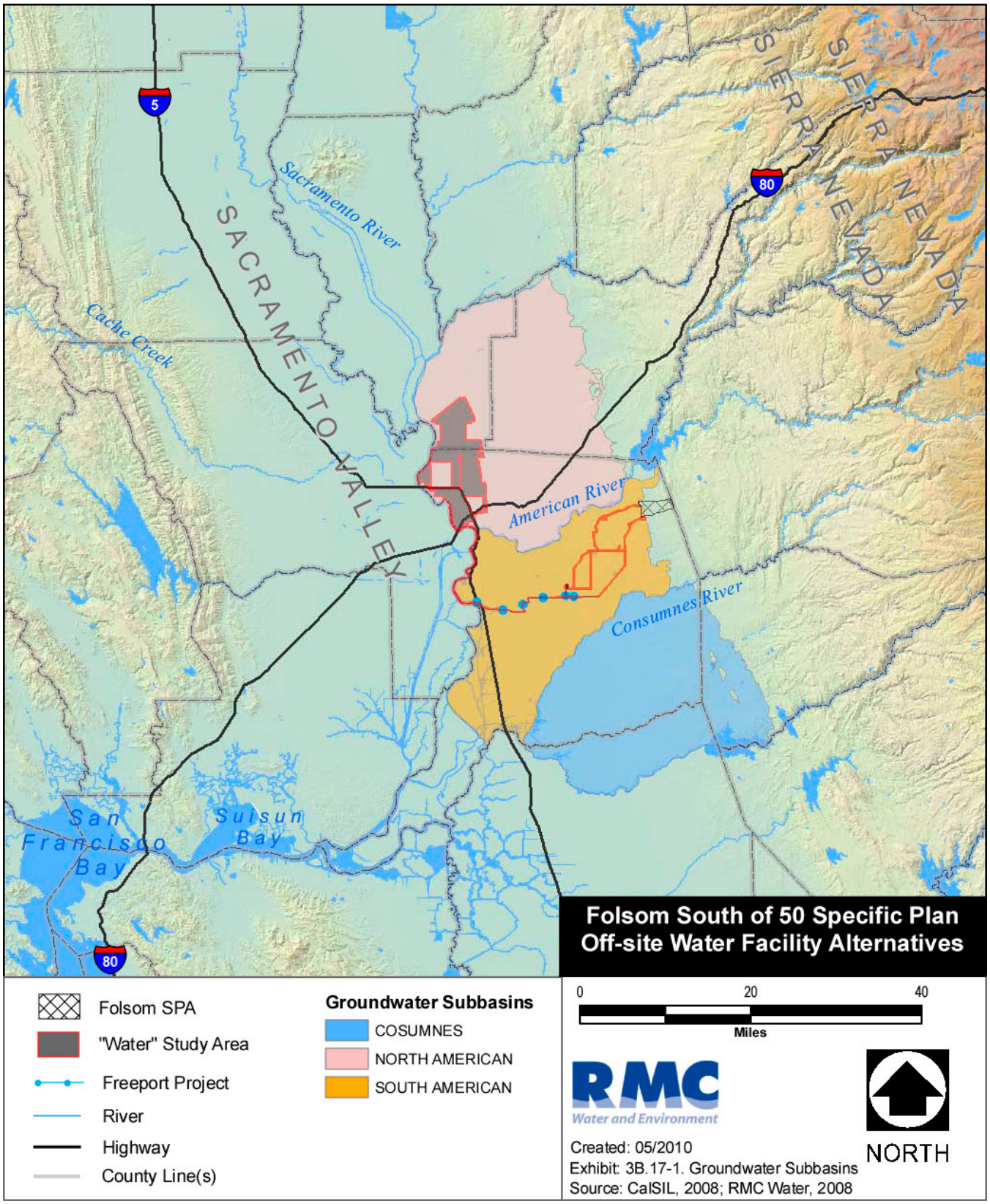
As shown in Exhibit 3B.17-1, the Natomas Central Mutual Water Company (NCMWC) or Zone 1 of the Off-site Water Facilities Study Area overlies the southwestern portion of the North American Groundwater Subbasin, which encompasses approximately 548 square miles in the east-central portion of the Sacramento Valley Groundwater Basin (California Department of Water Resources [DWR], 2006). The Bear River is its northern boundary, the Feather River is its western boundary, and the Sacramento River and American Rivers are its southern boundary. The eastern boundary is a north-south line extending from the Bear River south to Folsom Lake and represents the approximate edge of the alluvial deposits, where little or no groundwater flows into or out of the groundwater basin from the rock of the Sierra Nevada (DWR, 1997; DWR, 2006).

The estimated storage capacity for the North American Subbasin is approximately 4,900,000 acre-feet (AF) (DWR, 2006). The Water Forum Agreement (WFA) establishes a long-term average sustainable yield of 131,000 AFY for portions of the North American Subbasin underlying Sacramento County. Within this portion of the Subbasin, groundwater is typically used as a supplemental supply to surface water. In wet/average years[1], the need for supplemental groundwater supplies is estimated to be approximately 49,190 AF per year (AFY), which is below the 131,000 AFY long-term sustainable yield estimate cited in the WFA. The need for supplemental groundwater supplies during drier years is estimated to range from 102,110 to 132,520 AFY with the driest exceeding the 131,000 AFY long-term sustainable yield (Sacramento Groundwater Authority [SGA], 2003).

SOUTH AMERICAN GROUNDWATER SUBBASIN

Portions of the Off-site Water Facilities Study Area, more specially Zones 3 and 4 overlie the South American Groundwater Subbasin, also synonymous with the Central Sacramento County Groundwater Basin, which encompasses approximately 388 square miles in the east-central portion of the Sacramento Valley Groundwater

[1] Under the WFA a wet year is defined as those years when the projected March through November unimpaired inflow into Folsom Reservoir is equal to or greater 1,600,000 AF. A normal year is defined as more than 950,000 AF. Drier years are defined as those years when the projected March through November unimpaired inflow into Folsom Reservoir is less than 950,000 AF but equal to or greater than 400,000 AF.



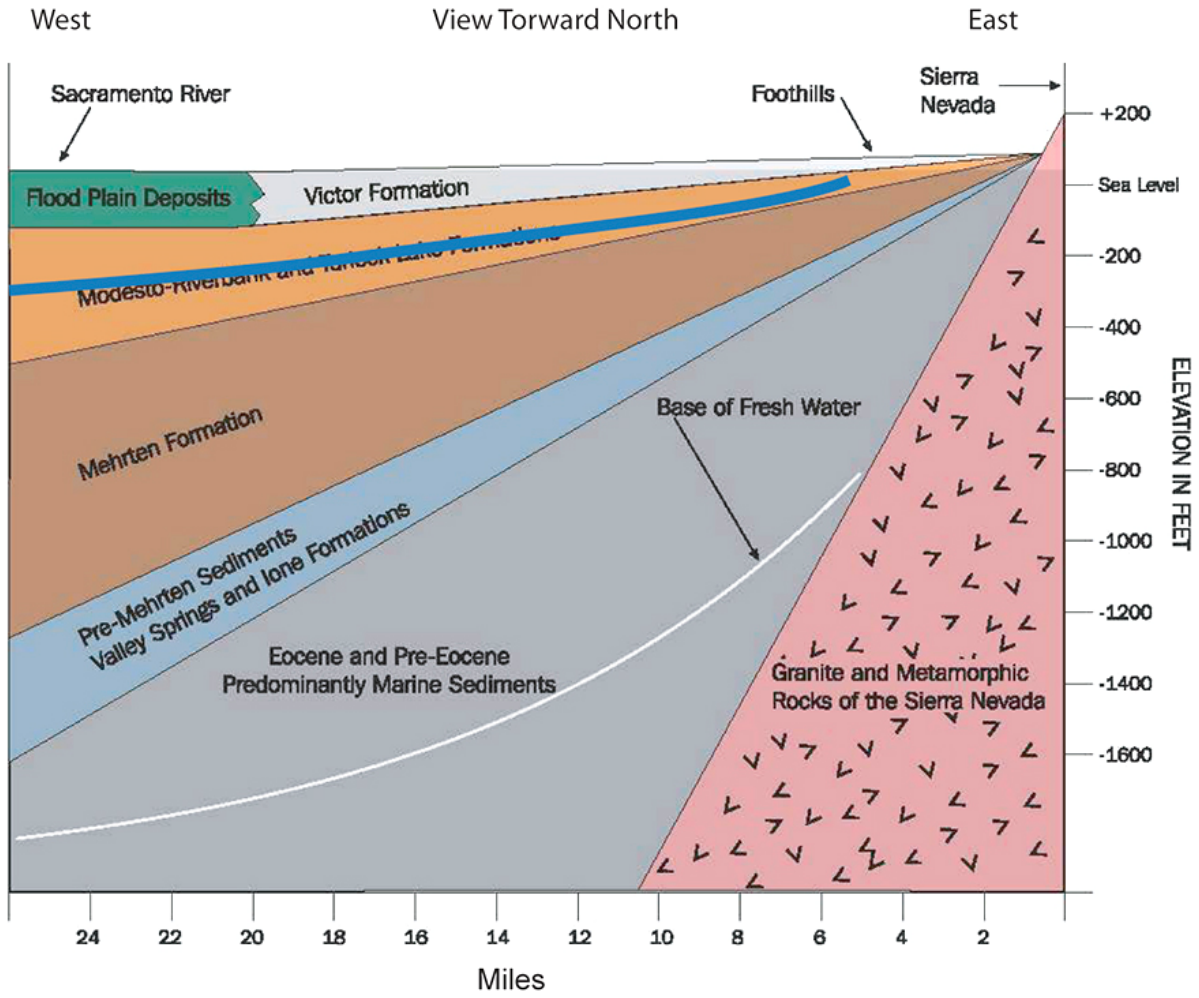
Local Groundwater Subbasins **Exhibit 3B-17-1**

Basin, south of the American River. This subbasin is bounded on the east by the Sierra Nevada foothills, on the west by the Sacramento River, on the north by the American River, and on the south by the Cosumnes and Mokelumne Rivers (see Exhibit 3B.17-1).

Hydrogeology

The South American Subbasin aquifer system is comprised of continental deposits of Late Tertiary to Quaternary age. These deposits include younger alluvium (consisting of flood basin deposits, dredge tailings and Holocene stream channel deposits), older alluvium, and Miocene/Pliocene volcanics (DWR, 2003). The cumulative thickness of these deposits increases from a few hundred feet near the Sierra Nevada foothills on the east to over 2,500 feet along the western margin of the subbasin.

Similar to the North American Subbasin, the South American Subbasin is characterized by two major water-bearing zones. The shallow aquifer zone occurs within the Laguna and/or Modesto formations and extends to 200-300 feet below the ground surface. The shallow aquifer is typically used for private domestic wells requiring no treatment unless high arsenic values are encountered. Older municipal and all domestic wells have been constructed in the shallow aquifer. Exhibit 3B.17-2 illustrates a generalized geologic cross-section for the South American Subbasin.



Source: CSCGMP, 2006

Generalized Geologic Cross-Section of the South American Groundwater Subbasin Exhibit 3B.17-2

The underlying deeper aquifer zone is encountered within the Mehrten formation at depths below 300 feet and is separated from the shallow layer by a semi-confining layer that runs east to west. The base of the deep aquifer is approximately 1,400 feet below the ground surface. Large municipal wells constructed by the Sacramento County Water Agency (SCWA) have targeted the deeper layer because the deep layer generates higher production rates and impacts domestic wells to a smaller degree (Tully & Young, Inc., 2008).

Intensive use of groundwater over the past 60 years has resulted in a general lowering of groundwater elevations within the upper aquifer. Over time isolated groundwater depressions have grown and coalesced into a single cone of depression that is centered in the southwestern portion of the South American Subbasin, near the City of Elk Grove. This circumstance in turn has resulted in groundwater elevations within the central portion of the Subbasin that range from 40 feet above to 40 feet below mean sea level (msl) and, in the northern section of the Subbasin, 120 feet above to 30 feet below msl.

Based on available information from Olmstead and Davis (1961), DWR calculated groundwater storage capacity within the South American subbasin at 4,816,000 AF. Sources of recharge include natural and applied water recharge, which totals 257,168 AF. Subsurface inflow and outflow are not known specifically, but net subsurface outflow is estimated at 29,676 AFY. Other groundwater outflows include annual urban extraction of 68,058 AF and agricultural extraction of 162,954 AF (DWR, 2003). Based on these estimates, the WFA determined the estimated long term average annual sustainable yield of groundwater from the Central Basin to be 273,000 AFY.

Currently, groundwater extractions are estimated to be 250,000 AFY basinwide (Central Sacramento County Groundwater Management Plan [CSCGMP], 2006). However, these pumping rates are expected to decline significantly with the initiation of the operation of the Freeport Project in 2009, which will allow for SCWA to meet a large portion of its current groundwater demand with surface water. The demand for groundwater is not expected to reach these levels again until 2030.

Eastern County Replacement Water Supply Project

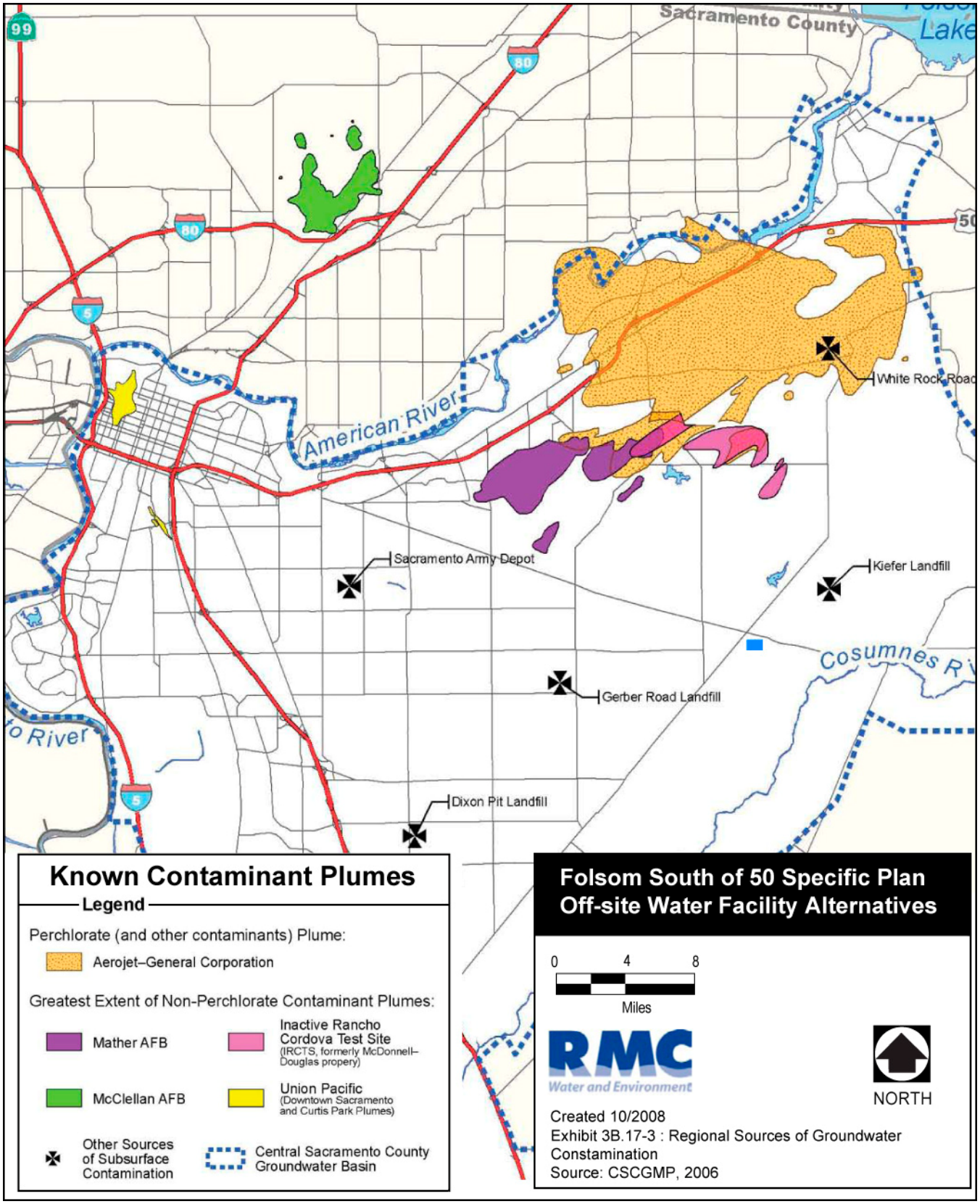
Under an agreement with Aerojet, SCWA is proposing the Eastern County Replacement Water Supply Project (RWSP) in eastern Sacramento County. The RWSP would consist of a system of conveyance facilities (i.e., pipelines and pump stations) to transport remediated water from groundwater extraction and treatment (GET) facilities to surface streams with discharge points along the American River. The GET-remediated water would be diverted at Reclamation's Folsom South Canal (FSC), the City of Sacramento's Fairbairn WTP diversion, and the Freeport Project. Diverted GET-remediated water would be delivered to the Golden State Water Company (GSWC) and the Cosumnes River via the FSC, Cal-American Water Company (Cal-Am) via the Fairbairn diversion, and SCWA wholesale and retail customers via the Freeport Project. No new diversion facilities are part proposed as part of the RWSP. Under the proposed RWSP, water for SCWA users would be diverted at the Freeport Project and treated at the Vineyard Surface WTP.

As discussed above, the GET facilities have already undergone CEQA environmental review and are under construction. The RWSP DEIR (State Clearinghouse No. 2004042122) was circulated for public review in October 2006. To the City's knowledge, SCWA does not anticipate implementing the RWSP in its entirety as described in the DEIR and will be seeking changes to its agreement with Aerojet.

Groundwater Quality

Water quality within the South American Subbasin is typically of good quality and suitable for potable use and meets water quality objectives. The concentration of TDS ranges from 24 to 581 milligrams per liter (mg/L) and averages 221 mg/L (DWR, 2003).

Exhibit 3B.17-3 illustrates regional sources of significant groundwater contamination within the North American Subbasin. Included are three EPA Superfund sites: Aerojet, Mather Field, and the Sacramento Army Depot. The other sites include the Kiefer Boulevard Landfill, an abandoned PG&E site on Jiboom Street near Old



Regional Sources of Groundwater Contamination **Exhibit 3B.17-3**

Sacramento, and the Southern Pacific and Union Pacific Rail Yards in downtown Sacramento. Although other localized plumes exist in and around the South American Subbasin (e.g., small leaking underground fuel tanks), the principal plumes shown in Exhibit 3B.17-3 are the largest and have the greatest current impact on existing groundwater use. For the Mather Field plumes, the primary constituents of concern (COC) are tetrachloroethylene (TCE), perchloroethylene (PCE), and carbon tetrachloride. For the Aerojet and Inactive Rancho Cordova Test Site (IRCTS) plumes, the primary COCs are TCE, n-nitrosodimethylamine (NDMA), and perchlorate.

3B.17.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) was established to protect the quality of drinking water in the United States. The SDWA focuses on waters actually or potentially designated for drinking use, whether from surface or underground sources. The SDWA authorized the EPA to establish safe standards of purity and requires all owners or operators of public water systems to comply with primary (health-related) standards. State governments, which may assume this power from EPA, also encourage attainment of secondary standards (nuisance-related standards). COCs in a domestic water supply are those that either pose a health threat or in some way alter the aesthetic acceptability of the water. These types of contaminants are currently regulated by EPA as primary and secondary maximum contaminant levels (MCLs). Primary and secondary MCLs are established for COCs including turbidity, TDS, chloride, fluoride, nitrate, priority pollutant metals and organic compounds, selenium, bromate, trihalomethane precursors, radioactive compounds, and gross radioactivity. The SDWA includes the Wellhead Protection Program and the Underground Injection Control (UIC) program wells to prevent degradation of groundwater supplies. Water supplies delivered by the Off-site Water Facilities would be required to comply with the drinking water standards set by EPA.

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

Groundwater Management Act (AB 3030)

California's Groundwater Management Act (California Water Code Sections 10750–10755.4 [AB 3030]) provides guidelines under which local agencies may adopt groundwater management plans. It promotes the voluntary development of groundwater management plans and provides criteria to ensure sustainable groundwater supplies for the future.

The Groundwater Management Act specifies the technical components of a groundwater management plan as well as the procedures for such a plan's adoption, including passage of a formal resolution of intent to adopt a groundwater management plan and holding a public hearing on the proposed plan. The Act also allows agencies to adopt rules and regulations to implement an adopted plan, and empowers agencies to raise funds to pay for the facilities needed to manage the basin, such as extraction wells, conveyance infrastructure, recharge facilities and testing and treatment facilities. The passage of SB 1938 in 2002 also required basin management objectives and other additions to be included in the groundwater management plans to comply with California Water Code Section 10750 et seq.

State Drinking Water Program

The California Department of Public Health (CDPH) Drinking Water Program is responsible for implementation of the Federal SDWA, as well as California statutes and regulations related to drinking water. The Division of Drinking Water and Environmental Management develops and implements the Drinking Water Source Assessment Program (DWSAP). The DWSAP Program describes CDPH's procedures for conducting drinking water source assessments, such as location of the drinking water source, and delineation of zones (based on

readily available hydrogeologic information on ground water flow, recharge, and discharge, and other information deemed appropriate by the state).

The CDPH regulates the operation of potable and recycled water systems, issues operating permits for these facilities, reviews plans and specifications for new facilities, enforces laws and regulations including the SDWA, and reviews water quality monitoring results. Furthermore, CDPH also conducts source water assessments and evaluates projects using injection and extraction into potable groundwater basins.

Central Valley Regional Water Quality Control Plan

The Central Valley RWQCB (Region 5) is responsible for the protection of beneficial uses of surface water and groundwater resources within the Sacramento River Basin. The Central Valley RWQCB uses planning, permitting, and enforcement authorities to meet this responsibility and has adopted a Water Quality Control Plan (Basin Plan) for the Sacramento River and San Joaquin River Basins and water quality objectives for groundwater (Central Valley RWQCB, 2004).

Although not a part of the regional water quality control plan, the SWRCB also has an adopted State Anti-Degradation Policy (SWRCB Resolution No. 68-16). This policy specifies that any new supply of water recharged into the basin must not degrade the existing groundwater basin unless change is consistent with maximum benefit to people of state and will not unreasonably affect present and potential beneficial uses.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

Sacramento County General Plan

The Sacramento County General Plan Conservation Element includes the following goals and policies that are relevant to the Off-site Water Facilities:

GOAL: Adequate long-term quantity and high quality of ground water resources for both human and natural systems.

- **Policy CO-22:** Development entitlements shall not be granted in areas where no ground water exists and water purveyors have reached their capacity to deliver treated water unless all necessary agreements and financing to obtain additional water supply are secured.

- **Policy CO-27:** Maintain agricultural zoning, and existing agricultural uses, in primary aquifer recharge areas identified as having a moderate to very high recharge capability Rezone applications for categories other than agricultural within one quarter mile of ground water recharge capability boundaries shall supply hydrologic data pertinent to recharge capability before the rezone application shall be considered complete.

- **Policy CO-29:** Discourage any nonagricultural land use in unincorporated areas with moderate to very high ground water recharge capability which could allow the percolation of pollutants into the ground water table.

Sacramento County Groundwater Ordinance

Title 3, Section 3.40.090 of the Sacramento County Water Code addresses the export of groundwater and surface water within the County. The ordinance requires that groundwater and surface water not be transported from the County without a permit issued by the Sacramento County Department of Water Resources. This ordinance does not apply to public water purveyors providing water service in two or more counties within a legally defined service area.

Sacramento Water Forum

The City and SCWA participated in the Water Forum process and are signatories to the WFA. The WFA supports the City's pursuit of additional water supplies and includes SCWA's need for increased surface water diversions. SCWA's "Purveyor Specific Agreement" also commits it to certain limitations on its use of water supplies, including groundwater. SCWA agreed to divert surface water at or near the mouth of the American River or from the Sacramento River. It agreed to limit its maximum surface water diversions to 78,000 AFA within the "South County M&I Users Group" area within Zone 40. An additional area within Zone 40 that overlaps the City of Sacramento's American River water rights settlement contract place of use is considered in the Water Forum Agreement and considers a long-term average demand of 9,300 AFA and up to 12,000 AFA in any single year.

As described in the Freeport Project EIR/EIS, SCWA anticipates diverting up to 90,000 AFA by 2030 (in any single year) to serve all areas within Zone 40 with surface water (FRWA, 2003). In addition to recognizing the need for surface water supplies, the WFA also sets a sustainable yield for the central county groundwater basin 273,000 AFA. Of this yield, SCWA expects to produce a long-term average of approximately 41,000 AFA from groundwater resources.

Sacramento Groundwater Authority Groundwater Management Plan

SGA is a joint powers authority responsible for the protection of the portion of the North American Subbasin within Sacramento County. SGA adopted a groundwater management plan in December 2003 with the goal of ensuring viable groundwater resources for agricultural, industrial, municipal, environmental, and aesthetic uses (SGA, 2003). Specifically, the plan's objectives are to maintain or improve groundwater quality and elevations, protect against land subsidence and impacts to surface water flows, and protect against impacts to water quality in the American River resulting from interaction between groundwater and surface water in the American River basin (SGA, 2003). As previously indicated, the NCMWC's service area overlies western portions of this subbasin.

Central Sacramento County Groundwater Management Plan

The CSCGMP is the result of the WFA and the Water Forum Successor Effort (Successor Effort), which ultimately formed the Central Sacramento County Groundwater Forum. The Central Sacramento County Groundwater Forum developed the CSCGMP to assist in delineating roles and responsibilities of participating agencies and individuals in the management of the groundwater basin. The CSCGMP outlines five Basin Management Objectives (BMOs) that are designed to protect and enhance the groundwater basin and includes monitoring and management programs to ensure the BMOs are being met.

Sacramento Valley Integrated Regional Water Management Plan

The Northern California Water Association (NCWA), as administrator of the Joint Exercise of Powers Agreement for Northern California, coordinated the preparation of the Sacramento Valley Draft Integrated Regional Water Management Plan (IRWMP), which includes Zones 1, 2, and 3 of the Off-site Water Facilities Study Area (NCWA, 2006). Objectives outlined in the Draft IRWMP that are related to the Off-site Water Facilities include a groundwater management and monitoring program with the purpose of improving regional and local water supply reliability. Under the Draft IRWMP, siting of groundwater wells should be conducted so as to be dispersed in location in order to spread project benefits and minimize environmental and third-party impacts. Other goals of the plan in relation to groundwater include promoting recharge facilities, ensuring recharge areas are not impacted by urban development, supporting distribution facilities, and allocation of facilities to allow for monitoring groundwater levels, quality, and recharge.

3B.17.3 Environmental Consequences and Mitigation Measures

Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. These thresholds also encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. An impact to groundwater resources would be considered significant if the Off-site Water Facilities would result in any of the following effects:

- violate any water quality standards or waste discharge requirements or otherwise substantially degrade groundwater water quality;
- substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would decline to a level which would not support existing land uses or planned uses for which permits have been granted); or
- groundwater pumping associated with operations of the Off-site Water Facilities would alter the existing surface hydrology.

Analysis Methodology

The potential impacts of the Off-site Water Facilities to groundwater resources were evaluated in terms of potentially foreseeable changes in groundwater levels and groundwater quality. Results for groundwater levels with and without the Off-site Water Facilities were compared for groundwater basins underlying the Off-site Water Facilities Study Area to determine the potential for both regional and local impacts or benefits. In evaluating the potential changes to groundwater levels or storage resulting from implementation of one of the Off-site Water Facility Alternatives, the City used the sustainable yields and demand projections established for the Northern and Central Sacramento County Groundwater Basin Management Plans by the WFA (SGA, 2003; CSCGMP, 2006).

Impact Analysis

Impacts that would occur under each of the Off-site Water Facility Alternatives are identified as follows:

NCP (No USACE Permit Alternative)

PA (Proposed Off-site Water Facility Alternative)

1 (Off-site Water Facility Alternative 1 – Raw Water Conveyance – Gerber/Grant Line Road Alignment and White Rock WTP)

1A (Off-site Water Facility Alternative 1A Raw Water Conveyance – Gerber/Grant Line Road Alignment Variation and White Rock WTP)

2 (Off-site Water Facility Alternative 2 Treated Water Conveyance – Douglas Road Alignment and Vineyard SWTP)

2A (Off-site Water Facility Alternative 2A Treated Water Conveyance – Excelsior Road Alignment Variation and Vineyard SWTP)

2B (Off-site Water Facility Alternative 2B Treated Water Conveyance – North Douglas Tanks Variation and Vineyard SWTP)

3 (Off-site Water Facility Alternative 3 Raw Water Conveyance – Excelsior Road Alignment and White Rock WTP)

3A (Off-site Water Facility Alternative 3A Raw Water Conveyance – Excelsior Road Alignment Variation and White Rock WTP)

4 (Off-site Water Facility Alternative 4 Raw Water Conveyance – Easton Valley Parkway Alignment and Folsom Boulevard WTP)

4A (Off-site Water Facility Alternative 4A Raw Water Conveyance – Easton Valley Parkway Alignment Variation and Folsom Boulevard WTP).

The impacts for each alternative are compared relative to the PA at the end of each impact conclusion (i.e., similar, greater, lesser).

IMPACT 3B.17-1 Exceedance of Water Quality Standards and Requirements for Groundwater. *The Off-site Water Facility Alternatives could generate discharges to or contribute to the depletion of groundwater resources thereby potentially directly and indirectly violating water quality standards or waste discharge requirements.*

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A

Construction-Related Impacts

Construction of the Off-Site Water Facilities pipelines, pump stations, and WTP would, at times, require dewatering of shallow, perched groundwater in the immediate vicinities of excavations and installation of underground features at a limited number of areas where groundwater depths are shallow. In order to create safe working conditions, free of standing water, when needed, shallow groundwater wells would be installed to lower groundwater elevations in the immediate vicinity of boring shafts to about 15 to 30 feet below the ground surface. During trenchless construction, dewatering would be necessary to remove water from tunnel, launching, and receiving pits. It is not known how much water would be withdrawn because the volume would be influenced by the local shallow aquifer character, the depth of excavation, and the duration that subsurface work is conducted.

Groundwater withdrawn from the construction areas would be subsequently discharged to local waterways or drainage ditches, or via land application. These discharges may contain sediments, dissolved solids, salts, and other water quality constituents found in the shallow groundwater, which could degrade the quality of receiving waters. Degradation of local receiving waters from the introduction of shallow groundwater during construction dewatering could result in a **potentially significant direct** and **indirect** impact to receiving waters. ***[Similar]***

Operational Impacts

The proposed assignment of 8,000AFY of surface water from NCMWC to the City would not require NCMWC to the supplement its supplies to meet irrigation demands by pumping groundwater in its service area. NCMWC has sufficient water supplies to meet its 2007 irrigation demands with or without the proposed transfer. As result, the proposed assignment would not have any adverse impacts to groundwater resources underlying NCMWC's Service Area within the North American Subbasin.

Likewise, with no increase in groundwater pumping within the NCMWC service area, there is no potential to influence the distribution and extent of existing contamination of the shallow aquifer at McClellan Air Force Base. This contamination resulted from military and related operations on the Air Force Base, and is comprised of a wide array of toxic chemicals including volatile organic carbons, solvents, PCBs, heavy metals, and jet fuel. A remediation plan is presently underway and this contamination site is located over 3 miles away from NCMWC. However, the groundwater plume is not fully contained or remediated (EPA, 2005) and may be susceptible to movement by operations of nearby wells. Given that no increased well use is proposed in conjunction with the

Off-site Water Facilities, it is reasonable to conclude that the Off-site Water Facilities would not directly or indirectly affect or alter the distribution of this contaminant zone. Based on these considerations, these **direct** and **indirect** impacts would be **less than significant**. ***[Similar]***

Mitigation Measure 3B.17-1a: Implement Construction Dewatering Best Management Practices.

During construction at site locations containing high groundwater, if groundwater from dewatering activities cannot be contained within the construction area (e.g., pipeline corridor, WTP), it shall be pumped to an authorized onsite land area, existing detention facilities, or Baker tanks or equivalent with sufficient capacity to control the volume of groundwater. Tanks shall be equipped with either a gel coagulant, a filter system, or other containment to remove sediment. The Off-site Water Facilities Stormwater Pollution Prevention Plan (SWPPP) shall include BMPs, as appropriate, to retain, treat, and dispose of groundwater from dewatering activities. Measures shall include, but not limited to, the following:

- temporarily retain pumped groundwater, as appropriate, to reduce turbidity and concentrations of suspended sediments before discharge to surface waterways;
- convey pumped groundwater to a suitable land disposal area capable of percolating flows; and/or
- incorporate other applicable measures from the Caltrans Storm Water Quality Handbook, Section 7: Dewatering Operations (2004).

Implementation: City of Folsom Utilities Department

Timing: Prior to and during construction

Enforcement:
1. California Department of Fish and Game or Regional Water Quality Control Board
2. City of Folsom Community Development Department.
3. Sacramento County Planning Department or City of Rancho Cordova Planning Department for improvements within their respective jurisdictions.

Mitigation Measure 3B.17-1b: Implement a Dewatering Discharge Monitoring Program.

A groundwater discharge monitoring program shall be implemented to ensure that receiving water quality does not exceed levels that would impact aquatic resources and agricultural use. If monitoring reveals that water quality would impact these beneficial uses, discharges to surface waterways shall be reduced or diluted to acceptable levels, or terminated. If discharges are reduced or terminated, groundwater shall be disposed through land application. Groundwater collected during dewatering shall be tested for contamination prior to disposal and comply with Central Valley RWQCB requirements.

Implementation: City of Folsom Utilities Department

Timing: Prior to and during construction

Enforcement:
1. California Department of Fish and Game or Regional Water Quality Control Board
2. City of Folsom Community Development Department.

3. Sacramento County Planning Department or City of Rancho Cordova Planning Department for improvements within their respective jurisdictions.

With the implementation of the above mitigation measures, impacts to groundwater quality under the Off-site Water Facility Alternatives would be reduced to a **less-than-significant** level by ensuring that all dewatering discharges are properly managed in accordance with RWQCB requirements and, if determined necessary, receive appropriate treatment prior to off-site discharge.

IMPACT 3B.17-2 Depletion of Groundwater Supplies Through Pumping. *The Off-site Water Facility Alternatives is unlikely to substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater levels.*

NCP, PA, 1, 1A, 3, 3A, 4, and 4A

Construction Impacts

The Off-Site Water Facility Alternatives would include the construction of impermeable surfaces associated with the WTP and storage tanks. Construction of these impermeable surfaces would affect groundwater recharge onsite. However, these impermeable surfaces would be limited in extent to less than one half of the 10-acre WTP (including buildings, paved roads, storage and treatment facilities, and parking lots) and only a portion of the well sites (including access roads and auxiliary facilities). This area would be very small in comparison to adjacent areas that would remain open and permeable. Therefore, **direct** impacts to groundwater recharge associated with these impermeable surfaces would be **less than significant**. ***[Similar]***

Groundwater dewatering may be necessary during construction of portions of the untreated and treated water pipelines, and the WTP. Dewatering activities would temporarily reduce groundwater levels to approximately 15 feet below ground surface within and directly adjacent to construction areas. During trenchless construction, dewatering may be necessary to remove water from tunnel, launching, and receiving pits. These impacts would be temporary in duration and highly localized to areas within and directly adjacent to construction activities. Although the limited dewatering activities under construction of the Off-site Water Facility Alternatives would cause a highly localized lowering of the groundwater table, they would not cause a net deficit in aquifer volume or a lowering of the groundwater table in the South American Basin. Therefore, these in**direct** impacts would be **less than significant**. ***[Similar]***

Operational Impacts

The operation of the Off-site Water Facility Alternatives could involve impacts to the South American Subbasin. Specifically, implementation of the Off-site Water Facility Alternatives involves the City's acquisition of a portion of SCWA's 85 mgd capacity within the Freeport Project, which could result in a reduction in SCWA's ability to meet peak demands, at times, with surface water alone. As a result, this analysis assumes that SCWA may be required to pump additional groundwater in place of the capacity transferred to the City to meet SCWA's peak demands to the extent it becomes necessary as demand increases in future years. For the purposes of this analysis, the resulting impact on groundwater would be equal to the purchased conveyance capacity of 6.5 mgd or 7,280 AFY. This action could require that SCWA pump more than 41,000 AFY of groundwater in future years.

As previously indicated in the setting discussion, the WFA sets the sustainable yield for the South American Subbasin at 273,000 AFY. Based on information contained in the Freeport Project EIR (2003) and CSCGMP (2006), current groundwater demands (2005) within the South American Subbasin are estimated at 250,000 AFY. Of this total, SCWA currently pumps, on average, 131,000 AFY. With the completion of the Freeport Project,

SCWA anticipates diverting up to 90,000 AFY[2] of surface water during normal years thereby reducing its groundwater pumping to 41,000 AFY. This initial reduction in groundwater demand from SCWA would reduce total groundwater demand within the South American Subbasin to 159,000 AFY. Given that the Freeport Project would be online in advance of the operation of the Off-site Water Facility Alternatives, even if SCWA is required to pump groundwater in place of the conveyance capacity lost by the Off-site Water Facilities, this pumping would occur at SCWA's existing well facilities with total groundwater demands under a worst-case, critical-dry-year scenario increasing to 166,280 AFY. As a result, **direct** and **indirect** impacts to groundwater resources under existing conditions would be **less-than-significant**. ***[Similar]***

Over the longer-term, total water demands within the South American Subbasin are estimated to approach approximately 255,000 AFY[3][4] in the year 2030 for a critically dry year (CSCGMP, 2006). Total groundwater demand becomes substantially reduced at 235,000 AFY during wet and normal years when surface water supplies are available, thereby allowing the basin to recharge. With the Off-site Water Facilities and assuming that groundwater is used to augment SCWA's peak water demands in response to SCWA's reduced conveyance capacity within the Freeport Project, the corresponding increase in total groundwater demands could approach 262,280 AFY[5] by 2030. This estimate is short of the 273,000 AFY sustainable yield estimate for the South American Subbasin based on the WFA and leaves a margin of 10,720 AFY of available capacity for other potential users under future conditions. Because groundwater pumping directly and indirectly associated with the Off-site Water Facilities would not exceed the sustainable yield recommendations, groundwater levels within the South American Subbasin under future conditions are projected to remain at levels above than those accepted by the WFA. Based on these findings, this **direct** and **indirect** impact is considered **less-than-significant**. ***[Similar]***

Impacts to the North American Groundwater Basin

Implementation of the Off-site Water Facilities would not require the NCMWC to replace the assigned surface water supplies with groundwater. As previously indicated in Chapter 2, "Alternatives," a study prepared by Wagner and Bonsignore (2007) concludes that the proposed assignment of CVP water from NCMWC to the City would have no indirect adverse effect on cropping patterns in terms of water availability during normal and wet years. Even during drier years, groundwater pumping should not be required by NCMWC to augment the surface water supplies transferred to the City assuming a continuation of 2007 cropping and irrigation patterns. Based on these circumstances, the **direct** and **indirect** impacts would **less-than-significant**. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

2, 2A, and 2B

Off-site Water Facility Alternatives 2 and 2A would involve the construction of treated-water conveyance lines from SCWA's existing Vineyard SWTP or the planned Douglas Storage Tanks. However, under these alternatives no new WTP would be constructed and new facilities proposed under these alternatives would generally be contained within existing roadways and/or developed areas. For this reason, these alternatives would have negligible or **no impact** on groundwater recharge. ***[Lesser]***

These alternatives would involve the purchasing of capacity within the Freeport Project and, therefore, those potential impacts to groundwater levels identified for the Preferred Off-site Water Facility Alternatives would apply to Off-site Water Facility Alternatives 2, 2A, and 2B.

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[2] SCWA's total surface water supplies for Zone 40 are assumed to include 68,500 AFA in CVP and appropriated supplies and 12,000 AFA and 9,300 AFA from the Purveyor Specific Agreement with the City of Sacramento.

[3] A conservation factor of 25.6% is applied to 2030 water demand estimates per the WFA.

[4] Groundwater use for 2030 assumes the inclusion of Aerojet GET extraction rates, estimated at 35,890 AFY.

[5] Estimate to account for City purchasing capacity within the Freeport Project is based on an average annual increase in pumping within SCWA's service are of 6.5 mgd or 7,280 AFY.

Mitigation Measure: No mitigation measures are required.

IMPACT 3B.17-3 Alteration of Surface Water Hydrology through Substantial Groundwater Pumping. *Substantial groundwater pumping from the Excelsior Well Field required by Off-site Water Facilities operations could alter existing surface hydrology.*

NCP, PA, 1, 1A, 2, 2A, 2B, 3, 3A, 4, and 4A

As part of the proposed Off-site Water Facility Alternatives, the City would acquire conveyance capacity within the Freeport Project. As previously discussed, the capacity allocated to the City would reduce SCWA's total dedicated capacity within the Freeport Project. This could require that SCWA rely more on groundwater extracted from existing well sites, such as the Excelsior Well Field, to meet long-term water demands.

The interaction between groundwater and surface water has not been extensively evaluated in the South American Basin. A recent draft decision by the SWRCB (2003) regarding the American River concluded that from Nimbus Dam to about 6,000 feet below the dam, groundwater elevations and surface water elevations were similar enough to each other that groundwater could be tributary to the American River. Beyond 6,000 feet down river from the dam, groundwater elevations are sufficiently lower than the river channel to conclude that the American River is a "losing" stream down to its confluence with the Sacramento River.

No new wells would be constructed as part of the Off-site Water Facility Alternatives. Any additional pumping by SCWA would likely occur at the existing Excelsior Well Field, which generally operates at depths that would be expected to provide sufficient separation between the existing wells and the American River, which is more closely linked to groundwater associated with the Laguna formation. Given that these wells tap geologic materials substantially lower than the Laguna formation and are located over six miles south of the River, any increased operation of the well field is not expected to result in significant adverse effects to surface water flows within the American River and would remain within the safe yield for the basin. Further, once the Freeport Project is in operation and surface water supplies becomes available, SCWA's use of the Excelsior Well Field for groundwater pumping is expected to diminish significantly. Therefore, this **direct** impact is considered **less-than-significant**. **No indirect** impacts would occur. ***[Similar]***

Further, the Freeport Project EIR/EIS provided a programmatic evaluation of groundwater banking within the Central Sacramento Groundwater Basins. At the time, the FRWA concluded that the banking within the Central Basin was not feasible due to the lack of a Groundwater Management Plan (AB 3232). However, since the Freeport Project EIR/EIS's preparation, the CSCGMP has been adopted as part of the WFA Successors Effort and, thereby, removing a significant institutional obstacle that existed in 2003. Based on these considerations, the operation of the Off-Water Facility alternatives would result in **no impacts** to surface water flows as a result of increased groundwater pumping. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

3B.17.4 RESIDUAL SIGNIFICANT IMPACTS

Operation of the Off-site Water Facility Alternatives would not result in residual, project-specific significant and unavoidable impacts to the quality and quantity of local and regional groundwater resources. With the implementation of the prescribed dewatering mitigation, construction-related impacts to shallow groundwater would be minimized to a less-than-significant level through the proper control, treatment, and containment of pumped groundwater prior to off-site discharge.

This section was prepared by RMC Water and Environment.

3A.18 WATER SUPPLY - LAND

3A.18.1 AFFECTED ENVIRONMENT

Presently, there are no public water supply facilities on the "Land" portion of the project site. Approximately 3,330 acres of the "Land" portion of the project site would be within the City of Folsom's service area and the remaining 172 acres generally east of Empire Ranch Road would be within the El Dorado Irrigation District (EID) service area. It is assumed that the City would provide treated water to EID for its service area within the project site; however, water supplies delivered in EID's service area would be controlled by EID (Tully & Young 2010: 8). The City has proposed a separate, but related "Water" Project in conjunction with the project, to meet projected water demands at build-out, which is described in Chapter 2, Alternatives. The "B or Water" portions Chapter 3 provide an analysis of "Water" project alternatives or Off-site Water Facility Alternatives proposed by the City in conjunction with the approval of the project.

WATER SUPPLIES

Water demands for the project would be met by securing an assignment of an 8,000 acre-foot per year Sacramento River surface water supply from the Natomas Central Mutual Water Company (NCMWC) pursuant to NCMWC's contract with the United States Bureau of Reclamation (Bureau of Reclamation). That supply would be subject to a 25% reduction in certain contractually-defined dry years. The water supply identified for the project is an entirely new source for the service areas of both the City and EID and would therefore not affect any existing water supply operations in those service areas (Tully & Young 2010: 7).

NCMWC is a private Mutual Water Company as defined in the California Public Utilities Code, Section 2705, formed for the delivery of water at cost to its shareholders. NCMWC is subject to local land use controls, including those of Sacramento and Sutter Counties and the City of Sacramento. The service area of NCMWC is defined by its contract with the Bureau of Reclamation for diversion of water from Sacramento River sources and for water service from the Central Valley Project (CVP). The NCMWC service area encompasses approximately 53,537 acres in the interior portion of the Natomas Basin in northern Sacramento County and southern Sutter County. NCMWC diverts water from the Sacramento River and the Natomas Cross Canal (NCC). This water is used to provide irrigation water for agricultural use and habitat preservation, and untreated water is also used for golf course and landscape irrigation.

NCMWC currently distributes water through five primary irrigation systems: the Northern System, the Bennett System, the Central System, the Elkhorn System, and the Riverside System. These irrigation systems are linked and used to support each other, and each system is served by a pumping facility located either along the Sacramento River or the NCC. The five pumping plants maintain a total maximum water diversion capacity of 630 cubic feet per second (cfs), or approximately 1247.4 acre-feet per day. Drainage and flood control for the Natomas Basin is provided by Reclamation District 1000 (RD 1000), which has a coinciding service area with NCMWC and shares several joint use facilities.

NCMWC"s existing water license/permit; place of use; purpose of use; and diversion periods, amounts, and limits are shown in Table 3A.18-1. NCMWC's total estimated long-term average annual supply of surface water is 120,200 acre-feet per year (AFY). A distribution of NCMWC's monthly diversion entitlements is provided in Table 3A.18-2. The maximum reduction in NCMWC's diversions during any critically dry year is 25%.

Chapter 2, "Alternatives," provides additional description of NCMWC's service area, its associated CVP water rights, and how a portion of those supplies would be permanently assigned to the City. Section 3B.9, "Hydrology and Water Quality – Water," provided a detailed description of the hydrology of the Sacramento River along with additional description of NCMWC's service area.

Table 3A.18-1 NCMWC Surface-Water Entitlements					
License/Permit	Place of Use	Purpose of Use	Diversion Period	Diversion Amount (cfs)	Diversion Limit (afy)
1050	Reclamation Settlement Contract Service Area	Agricultural Irrigation and M&I	April 1 – October 1	42	Limited to 120,200 by the Reclamation Settlement Contract
2814			April 15 – October 15	38	
3109			May 1 – October 31	160	
3110			May 1 – October 1	120	
9794			April 1 – June 30	131	
9989			April 1 – June 30; September 1 – October 31	14	
19400	Sacramento International Airport and Metro AirPark	Domestic M&I and Industrial	October 1 – April 1	168	10,000
Notes: Reclamation = U.S. Bureau of Reclamation; cfs = cubic feet per second; afy = acre-feet per year; NCMWC = Natomas Central Mutual Water Company; M&I = municipal and industrial use. Source: Tully & Young 2008					

Table 3A.18-2 NCMWC Monthly Water Deliveries Under the Renewal Contract			
Month	Base Supply (AFY)	"Project Water" (AFY)	Total Supply (AFY)
April	14,000	0	14,000
May	27,700	0	27,700
June	23,000	0	23,000
July	11,500	7,200	18,700
August	3,900	14,800	18,700
September	16,100	0	16,100
October	2,000	0	2,000
Total	**98,200**	**22,000**	**120,200**
Notes: AFY = acre-feet per year; NCMWC = Natomas Central Mutual Water Company Source: Tully & Young 2008			

Water Diversion and Distribution Facilities

Under the City's "Water" Project, surface water would be diverted from the Sacramento River at the Freeport Regional Water Authority's (FRWA) diversion facility (Freeport Project) and conveyed through segments 1 and 2 of the Freeport Project and new conveyance pipeline constructed by the City to the project site. Water treatment would also be provided through the either the construction of an on- or off-site WTP or at the Vineyard Surface Water Treatment Plant (SWTP). (See Chapter 2, "Alternatives," for a detailed discussion of Off-site Water Facility Alternatives.)

Freeport Regional Water Project

The FRWA was created by exercise of a joint-powers agreement between SCWA and the East Bay Municipal Utility District (EBMUD). FRWA's basic purpose is to increase the reliability of water service for customers,

reduce rationing during droughts, and facilitate conjunctive use of surface-water and groundwater supplies in central Sacramento County. The FRWA developed the Freeport Regional Water Project (FRWP) to meet the objectives of SCWA and EBMUD.

A DEIR/DEIS was prepared and circulated for public review in July 2003 (SCH #2002032132), and the FEIR was certified in April 2004. No legal challenge was filed under CEQA or NEPA. FRWA subsequently completed federal Endangered Species Act (ESA) compliance in fall 2004, leading to Bureau of Reclamation's issuance of the record of decision in January 2005. Minor adjustments to the project were made after certification of the FEIR, and a supplemental initial study/mitigated negative declaration (IS/MND) was prepared and circulated for public review in February 2006. The supplemental IS/MND was adopted in March 2006.

The FRWP is currently nearing the completion of construction and estimated to be operational in summer 2010. Once operational, the FRWP will provide SCWA with up to 85 mgd of surface water from the Sacramento River that would be conveyed by FRWA to SCWA's Vineyard SWTP. The Vineyard SWTP is currently under construction and is anticipated to be completed by November 2011 (SCWA 2009).The remaining 100 mgd of the 185 mgd diverted from the Sacramento River would be conveyed past the Vineyard Surface WTP by EBMUD to the Folsom South Canal, which would convey the water to the Mokelumne Aqueduct for use within EBMUD's service area during dry years.

Pursuant to SWRCB Permit No. 21209, SCWA's total diversions at Freeport are permitted for up to 286 cfs, but not to exceed 71,000 AFY. On average, however, SCWA's diversions are initially estimated to be 21,700 AFY in 2010.

3A.18.2 REGULATORY FRAMEWORK

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

The following Federal plans, policies, regulations, and laws related to water supply are relevant to the off-site "Water" components of the Project, and are described in detail in Sections 3B.3 "Biological Resources – Water" and 3B.9, "Hydrology and Water Quality – Water:"

- Central Valley Project Improvement Act
- Safe Drinking Water Act
- Operations Criteria and Plan for Long-Term Operation of CVP/SWP

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

The following state plans, policies, regulations, and laws related to water supply are relevant to the off-site "Water" components of the Project, and are described in detail in Section 3B.9, "Hydrology and Water Quality – Water:"

- Porter-Cologne Water Quality Control Act

Senate Bills 610 and 221

The State of California has enacted legislation that is applicable to the consideration of larger projects under CEQA. Senate Bill (SB) 610 (Chapter 643, Statutes of 2001; Section 21151.9 of the Public Resources Code and Section 10910 et seq. of the Water Code) requires the preparation of "water supply assessments" (WSAs) for large developments (i.e., more than 500 dwelling units or nonresidential equivalent), such as the Folsom South of Highway 50 Specific Plan. These assessments, prepared by "public water systems" responsible for serving project

areas (in this case, the City of Folsom and EID), address whether existing and projected water supplies are adequate to serve the project while also meeting existing urban and agricultural demands and the needs of other anticipated development in the service area in which the project is located. If the most recently adopted Urban Water Management Plan (UWMP) accounted for the projected water demand associated with the project, the public water system may incorporate the requested information from the UWMP. If the UWMP did not account for the project's water demand, or if the public water system has no UWMP, the project's WSA must discuss whether the system's total projected water supplies (available during normal, single-dry, and multiple-dry water years during a 20-year projection) would meet the project's water demand in addition to the system's existing and planned future uses, including agricultural and manufacturing uses.

A WSA has been prepared for the proposed project (Tully & Young 2010, on behalf of the City) and is included as Appendix M-I to this EIR/EIS. The conclusions of the WSA are summarized below in Section 3A.18.3, "Environmental Consequences and Mitigation Measures."

Where a WSA concludes that insufficient supplies are available, the public water system must provide to the city or county considering the development project its plans for acquiring and developing additional water supplies. Based on all the information in the record relating to the project, including all applicable WSAs and all other information provided by the relevant public water systems, the city or county must determine whether sufficient water supplies are available to meet the demands of the project, in addition to existing and planned future uses. Where a WSA concludes that insufficient supplies are available, the WSA must lay out the steps that would be required to obtain the necessary supply. The WSA is required to include (but is not limited to) identification of the existing and future water supplies over a 20-year projection period. This information must be provided for average normal, single-dry, and multiple-dry years. The absence of an adequate current water supply does not preclude project approval, but it does require a lead agency to address a water supply shortfall in its project findings.

If the proposed project is approved, additional complementary statutory requirements, created by 2001 legislation and known as SB 221 (Government Code Section 66473.7), would apply to the approval of tentative subdivision maps for more than 500 residential dwelling units. This statute requires cities and counties to include, as a condition of approval of such tentative maps, the preparation of a "water supply verification." The verification, which must be completed by no later than the time of approval of final maps, is intended to demonstrate that there is a sufficient water supply for the newly created residential lots. Government Code Section 66473.7 defines sufficient water supply as follows:

> …the total water supplies available during normal, single-dry, and multiple-dry years within a 20-year projection period that would meet the projected demand associated with the proposed subdivision, in addition to existing and planned future uses, including, but not limited to, agricultural and industrial uses.

A number of factors must be considered in determining the sufficiency of projected supplies:

- the availability of water supplies over a historical record of at least 20 years;
- the applicability of an urban-water-shortage contingency analysis that includes action to be undertaken by the public water system in response to water supply shortages;
- the reduction in water supply allocated to a specific water-use sector under a resolution or ordinance adopted or a contract entered into by the public water system, as long as that resolution, ordinance, or contract does not conflict with statutory provisions giving priority to water needed for domestic use, sanitation, and fire protection; and

- the amount of water that the water supplier can reasonably rely on receiving from other water supply projects, such as conjunctive use, reclaimed water, water conservation, and water transfer, including programs identified under federal, state, and local water initiatives.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS, AND LAWS

The following regional and local plans, policies, regulations, and laws related to water quality and flooding are relevant to the Off-site Water Facilities alternatives, and are described in detail in Section 3B.9, "Hydrology and Water Quality – Water" and 3A.10, "Land Use and Agricultural Resources – Land:"

- Sacramento Water Forum
- Measure W

Sacramento County General Plan

There are no goals and policies of the Sacramento County General Plan (1993) related to water supply that are applicable to the Proposed Project or alternatives under consideration.

El Dorado County General Plan

There are no goals and policies of the El Dorado County General Plan (2004) related to water supply that are applicable to the Proposed Project or alternatives under consideration.

City of Folsom General Plan

The following goals and policies of the City of Folsom General Plan (1988) are applicable to the Proposed Project and the other four action alternatives. There are no City of Folsom goals and policies that would apply to the No Project Alternative.

GOAL 40: To set targets for ultimate build-out of the City, to plan for the provision of public facilities and services to meet this level of development, and to phase development according to the capacity of public facilities and services to meet those targets.

- **Policy 40.1:** No permit for construction shall be issued for any new development not served by existing municipal facilities until the following conditions have been met:

    - The applicant can provide for the installation and/or financing (through fees or other means) of needed public facilities.

    - The project is included in the area covered by an existing facilities plan approved by the City.

    - The project can be served by on-site or private facilities meeting City and County health and safety requirements.

- **Policy 40.2:** The City shall require the preparation of a facilities plan for an identified area when:

    - Development of an area necessitates the provision, extension, and/or expansion of municipal services and facilities which are not customarily constructed by a developer, or

    - There is a need for services or facilities not otherwise funded by regular City fees, or

    - The construction of the necessary services and facilities cannot be logically or economically provided by one landowner/development in the normal sequence of orderly development.

- **Policy 40.3:** An area facilities plan shall include, but not limited to the following:

  - Description of the plan area, the basis for the selection of the proposed boundaries, and the development potential of the area which is based on a comprehensive land use map.

  - A statement of the plan's consistency with the Folsom General plan and the City's Urban Development Policy.

  - Identification of the nature and extent of facilities necessary to serve the area and a schedule of estimated time within which facilities must be constructed.

  - Engineer's estimate of the total cost of such improvements (including plan preparation).

  - A plan for the equitable apportionment of costs among benefited properties and adjustments thereof based on the time such costs are paid.

  - The nature of the obligation of each land-owner or developer.

  - Discussion of the options available to finance the improvements including, but not limited to, construction by developers.

  - Provisions for amendments to the plan which may result from changes in the plan area, development patterns, etc.

  - Provisions to refund or reimburse landowners who construct facilities with capacity beyond the ultimate need of their developments.

  - A statement which recognizes that the financial commitments required pursuant to such plans are not in lieu of other municipal service and facilities fees. The financial commitments of landowners/developers shall be taken into account by the City in determining the extent of the imposition of such other municipal service and facilities fees.

  - A statement which recognizes that the area facilities plan is not intended to be responsible for the provision of all possible public facilities that will be needed in the future and that there are or may be additional costs/fees established by the City and other jurisdictions (such a school district) that may apply to the area. However, the plan must address the need for public facilities which may reasonably be assumed to be necessary during buildout of the area.

  - Provisions for administration of the area plan and the collection and distribution of funds.

- **Policy 40.5:** The City shall annually monitor the City's available municipal water supply to ensure adequate reserves exist to serve projected water demand. In the event projected demand exceeds supply, the City may take the following actions to prevent the anticipated shortfall.

  - Condition development approvals on the availability of identified water supplies.

  - Building permits covered by the former General Plan area should be restricted until such time as the City determines adequate supplies exist to allow unrestricted hookups to the municipal water system.

  - Within the area known as the East Area Facilities Plan Area consisting of approximately 3,900 acres, and any area south of U.S. Highway 50 which could be annexed to the City, the City shall not approve a final subdivision map or final parcel map, or other entitlement which would permit the commencement of construction until such time as the City has acquired an additional water supply which is adequate to

supply such development as required under the Urban Development Policy. This prohibition shall not preclude the approval of final parcel maps covering all or a portion of the property covered by an approved tentative subdivision map, where multiple final subdivision maps are to be filed pursuant to Government Code Section 66456.1.

3A.18.3 Environmental Consequences and Mitigation Measures

Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. These thresholds also encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. The Proposed Project or alternatives under consideration were determined to result in a significant impact related to water supply if they would do any of the following:

- require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects; or
- have insufficient water supplies available to serve the project from existing or permitted entitlements and resources, or require new or expanded entitlements.

Analysis Methodology

Impacts on potable water supplies and conveyance facilities that would result from implementation of the Proposed Project and alternatives under consideration were identified by comparing existing service capacity and facilities with future demand associated with project implementation. Potential demands for water and impacts on infrastructure were evaluated based on a review of the *City of Folsom General Plan* (City of Folsom 1988) and the *Folsom Specific Plan SB 610 Water Supply Assessment* (Tully and Young 2010).

A quantitative comparison was used to determine impacts of the project on water supply future demands. Table 3A.18-3 summarizes water supply demands for the Proposed Project and the four action alternatives under consideration.

Table 3A.18-3
Folsom South of U.S. 50 Specific Plan Water Demands

Land Use Development Alternative	Normal-Year Water Demands (AFY)			Single-Dry and Multiple-Dry Year Water Demands (AFY)		
	City of Folsom	EID	Total	City of Folsom	EID	Total
Proposed Project	5,166	255	5,422	5,315	262	5,577
Resource Impact Minimization	4,238	210	4,449	4,363	217	4,580
Centralized Development	4,566	41	4,606	4,694	42	4,737
Reduced Hillside Development	5,168	228	5,395	5,312	235	5,547
No USACE Permit	3,967	231	4,198	4,091	239	4,330

Notes: Notes: AFY = acre-feet per year; EID = El Dorado Irrigation District
Development of residences under the No Project Alternative would not be served by a municipal water service provider.
Source: Tully and Young, 2010 and AECOM, 2010

As described in Chapter 2, "Alternatives" the "Water" portion of the project takes the form of a series of Off-site Water Facility Alternatives in conjunction with development of the SPA to supply the projected water demands through build-out. These Off-site Water Facility alternatives each would involve the construction of new water conveyance and treatment facilities. The environmental effects of the Off-site Water Facility Alternatives are evaluated at an equal level of detail throughout the Chapter 3 in the "Water – B" analysis and are summarized in the Executive Summary Table ES-2 and, therefore, are not revisited here.

In case the surface water supply considered as part of the Off-site Water Facility Alternatives do not become available because of the required regulatory and legal approvals, the City conducted an analysis of optional sources of water other than the water supply evaluated as part of the Off-site Water Facility Alternatives. These optional water supplies are described and qualitatively evaluated in Section 3A.18.5. The analysis presented in Section 3A.18.5 is intended to satisfy the requirements of CEQA as part of the court in the case of *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova*, 40 Cal. 4th 412 (2007). This separation was considered necessary to distinguish the CEQA-required "*Vineyard* analysis" from the equal-level of detail for the "Land" and "Water" alternatives evaluated in Chapter 3 of this EIR/EIS per the requirements of NEPA.

IMPACT ANALYSIS

Impacts that would occur under each alternative development scenario are identified as follows: NP (No Project), NCP (No USACE Permit), PP (Proposed Project/Action), RIM (Resource Impact Minimization), CD (Centralized Development), and RHD (Reduced Hillside Development). The impacts for each alternative are compared relative to the PP at the end of each impact conclusion (i.e., similar, greater, lesser).

IMPACT 3A.18-1 Increased Demand for Water Supplies. *Project water demands would require the acquisition of surface water entitlements from the Natomas Central Mutual Water Company to provide a reliable water supply.*

On-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80. There is currently no public water service available on the project site, and no off-site facilities would be constructed. Therefore, property owners under the No Project Alternative would be served by individual groundwater wells. Thus, the 44 individual rural residences that could be built under the No Project Alternative would not increase demand for surface water from a municipal water service provider and there would be **no direct** or **indirect** impacts related to increased demand for surface water supplies. Impacts associated with groundwater use from construction of individual wells on the rural residences under the No Project Alternative are evaluated in Section 3A.9, "Hydrology and Water Quality - Land." ***[Lesser]***

NCP

The discussion provided for the Proposed Project Alternative below would also generally apply to the No USACE Permit Alternative with water supplies consisting of CVP water purchased from NCMWC and conveyed to the Folsom SPA via one of the Off-site Water Facility Alternatives described in Chapter 2, "Alternatives." Table 3A.18-4 shows projected water demands for the No USACE Permit Alternative during normal, single-dry, and multiple-dry years in 5-year increments. The total projected water demands for the No USACE Permit Alternative at buildout are 4,198 AFY during normal years and 4,330 AFY during single-dry and multiple-dry years. The No Federal Action Alternative normal-year water demand would be 1,224 AFY and single-dry and multiple-dry years would be 1,247 AFY less than the Proposed Project Alternative.

The No USACE Permit Alternative's water demands under normal and critically dry year conditions were compared to available water supplies to determine whether a reliable water supply is available to serve the proposed project and existing water demands during normal and dry years. As shown in Table 3A.18-5, adequate water supplies are available to meet projected water demands under the No USACE Permit Alternative, even in critically-dry years.

Table 3A.18-4
Summary of Land Use and Water Demands for the No USACE Permit Alternative at Buildout

Land Use Type	Normal-Year Water Demands (AFY)[1]			Single-Dry and Multiple-Dry Year Water Demands (AFY)[2]		
	City of Folsom	EID	Total	City of Folsom	EID	Total
Single-Family	1,373	179	1,552	1,418	185	1,603
Single- Family High Density	452	--	452	462	--	462
Multifamily Low Density	337	--	337	344	--	344
Multifamily Medium Density	200	--	200	202	--	202
Multifamily High Density	41	--	41	42	--	42
Mixed-Use District[3]	80	--	80	81	--	81
Office Park	162	--	162	168	--	168
Community Commercial	12	--	12	13	--	13
General Commercial	254	49	303	263	51	314
Regional Commercial	214	--	214	221	--	221
Parks	335	--	335	352	--	352
Public/Quasi-Public	457	--	457	474	--	474
Circulation Improvements	48	2	50	51	2	53
Open Space	--	--	--	--	--	--
Total Demand[4]	**3,967**	**231**	**4,198**	**4,091**	**239**	**4,330**

Notes: AFY = acre-feet per year
[1] The total estimated water demand in a normal year assumes a 10% non-revenue water factor.
[2] The total estimated water demand in single and multiple dry years assumes an increase of 5% for outdoor water demands and then applies a 10% non-revenue water factor.
[3] The Mixed-Use District assumes residential and commercial land uses.
[4] Minor discrepancies in totals are a result of rounding.
Source: Tully & Young 2010; AECOM, 2010

Table 3A.18-5
Normal-Year and Dry-Year Comparison of Water Supply and Demand for the No USACE Permit Alternative

Surface Water Supply and Demand	Normal-Year	Dry-Year
Supply	6,000	6,000
Demand	4,198	4,330
Total surplus	**1,802**	**1,670**

Notes: AFY = acre-feet per year
Source: Tully & Young 2010

Based on the above analysis and as shown in Table 3.18-5, the City's proposed water supply, which is based on an assignment from NCMWC, is sufficient to meet projected water demands under the No Federal Action Alternative in normal and critically dry years. NCMWC water supplies are considered reliable, and, as a physical matter, there is reasonable certainty that surface water supplies needed to serve the No USACE Permit Alternative at buildout would be available. The City has already completed extensive consultation and coordination with pertinent entities including Reclamation, NCMWC, and SCWA to establish the initial framework for these approvals. It is assumed that once these entitlements are approved, the surface water supplies resulting from the NCMWC assignment would continue to flow to the City without interruption, barring a major shift in climate or policy, or unless current California water law principles are applied in a substantially more restrictive manner. However, given that the water supply cannot be secured and water conveyance and treatment facilities constructed in advance of approval of the project, without additional contingencies placed on the project applicants to confirm the availability of water and related infrastructure for the Folsom SPA, a **potentially significant direct** impact could result if no "Water" project were implemented in a timely manner following approval of the Specific Plan. ***[Lesser]***

Mitigation Measure: Implement Mitigation Measure 3A.18-1.

PP

Presently, there are no public water supply facilities on the "Land" portion of the project site. Approximately 3,330 acres of the "Land" portion of the project site would be within the City of Folsom's service area and the remaining 172 acres generally east of Empire Ranch Road would be within the El Dorado Irrigation District (EID) service area. It is assumed that the City would provide treated water to EID for its service area within the project site; however, water supplies delivered in EID's service area would be controlled by EID (Tully & Young 2010: 8). The water supply identified for the project is an entirely new source for both service areas and would therefore not affect any existing water supply operations in the City of Folsom or EID service areas (Tully & Young 2010: 7).

Proposed Project's Water Demand

In compliance with SB 610, a WSA has been prepared to determine whether the projected available water supplies would meet the Proposed Project's water demand, in addition to the existing and planned future uses. For purposes of calculating water supply and demand for the project, the WSA assumed water supplies would be required in 2013 and that implementation of the project would occur in five phases over a 20-year period (See Section 2.3.1, "Project Phasing" for further information on project phasing.).

The SPA's water demands at full buildout were estimated by applying water demand factors to each proposed land use. These demand factors were derived based on a review of meter data for the City of Folsom and other water purveyors in the region as well as pending conservation measures (Tully & Young 2010: 11). Water demands are assumed to increase by 5% from normal-year levels during single-dry and multiple-dry years as a result of increases in outdoor demands for all residential and nonresidential demand categories (Tully & Young 2010: 30). In addition, the total estimated water demands in normal, single-dry, and multiple-dry years assume a non-revenue water loss (i.e., water lost through leaks, meter inaccuracies, or unknown or unbilled connections and uses [e.g., fire hydrant flushing and construction water]) of 10%.

The project would conform to the 2007 requirements of Best Management Practices (BMPs) from the California Urban Water Conservation Memorandum of Understanding (or later edition if applicable). These BMPs could include: performing site-specific landscape and interior water surveys; conducting public information campaigns and school education programs; adopting a water waste ordinance; and identifying opportunities for installation of dedicated irrigation meters, monitoring progress through billing, and providing site-specific assistance for accounts 20% over budget. The California Urban Water Conservation BMPs would have a long-term affect on the City's ability to manage water use throughout the project site. To the extent that the City requires installation of

dedicated irrigation meters in the project site, a monitoring and survey program would provide an opportunity to ensure that landscape water demands are achieving desired water conservation targets. The City's water conservation coordinator would be assigned to manage water conservation programs and City staff will be authorized to enforce the water waste ordinance. Through targeted outreach, the City can encourage continued customer use of highly efficient appliances and irrigation systems, emphasize the need to retain efficient landscape plantings, and minimize otherwise wasteful uses. (Tully & Young 2010: 19).

As of 2009, urban water suppliers are required to select one of four water conservation targets with the statewide goal of achieving a 20% reduction in urban per capita water use by 2020. While the City has yet to select a water conservation target, the city intends to select a target that would require the City to reduce water use by 20% by 2020. (Tully & Young 2010: 15.)

The WSA assumes that a 20% reduction in total demand is a long-term citywide goal. In the near term, it is assumed the City's water conservation efforts related to efficient infrastructure requirements and landscape features support at least a 10% reduction in historic per capita unit demand factors. (Tully & Young 2010: 15.)

Table 3A.18-6 shows projected water demands for the Proposed Project during normal, single-dry, and multiple-dry years. The total projected water demands for the Proposed Project at buildout are 5,422 AFY during normal years and 5,577 AFY during single-dry and multiple-dry years.

Table 3A.18-6
Summary of Land Use and Water Demands for the Proposed Project Alternative at Buildout

Land Use Type	Normal-Year Water Demands (AFY) [1]			Single-Dry and Multiple-Dry Year Water Demands (AFY) [2]		
	City of Folsom	EID	Total	City of Folsom	EID	Total
Single Family	1,028	69	1,097	1,061	71	1,132
Single-Family High Density	1,108	69	1,177	1,132	70	1,202
Multi-family Low Density	556	65	621	567	66	633
Multi-family Medium Density	249	--	249	252	--	252
Multi-family High Density	247	--	247	249	--	249
Mixed-Use District [3]	160	--	160	162	--	162
Office Park	195	--	195	203	--	203
Community Commercial	66	--	66	69	--	69
General Commercial	313	50	363	324	52	376
Regional Commercial	180	--	180	186	--	186
Parks	481	--	481	505	--	505
Public/Quasi-Public	514	--	514	533	--	533
Circulation Improvements	68	3	71	72	3	75
Open Space	--	--	--	--	--	--
Total Demand	**5,166**	**255**	**5,422**	**5,315**	**262**	**5,577**

Notes: AFY = acre-feet per year

[1] The total estimated water demand in a normal year assumes a 10% non-revenue water factor.

[2] The total estimated water demand in single and multiple dry years assumes an increase of 5% for outdoor water demands and then applies a 10% non-revenue water factor.

[3] The Mixed-Use District assumes residential and commercial land uses.

[4] Minor discrepancies in totals are a result of rounding.

Source: Tully & Young 2010: 31

Proposed Water Supply

Water demands for the project would be met by securing a permanent assignment of long-term, CVP "Project Water" from the NCMWC under Contract No. 14-06-200-885A-R-1 (NCMWC CVP Contract) with the Bureau of Reclamation (Tully & Young 2010: 33). The normal year supply contractually available to the City would be not less than 8,000 AFY; however, the maximum diversion would be 6,000 AFY (Tully & Young 2010: 43). This higher quantity of water is required to factor in the 25% reduction that could occur in single-dry and multiple-dry years thereby reducing the quantity delivered to 6,000 AFY.

The "Project Water" would be made available by NCMWC reducing its surface water diversions/pumping during the irrigation season at the Riverside Pumping Plant. This water supply would then remain in the Sacramento River and would flow approximately 20 miles downstream, where it would be removed from the river at the FRWA's diversion facility. This diverted surface water would be conveyed to the project site via both FRWA diversion facilities and the off-site conveyance facilities that are proposed as part of the "Water" portion of this project. (See Chapter 2, "Alternatives" of this DEIR/DEIS for a detailed description of the proposed off-site water facilities.) The water may be either treated by SCWA's Vineyard Surface WTP or through construction of a different WTP proposed as part of the "Water" portion of this project (see Chapter 2, "Alternatives" and Impact 3A.18-2 below).

The CVP "Project Water," by contract, is currently limited to use for irrigation during the growing season (July and August) in the NCMWC service area. The water rights permits issued to the Bureau of Reclamation by the SWRCB include M&I as a permitted use. Therefore, CVP "Project Water" can be used for M&I purposes within the project site.

For the CVP "Project Water" to serve as an effective water supply, it would be necessary for Bureau of Reclamation to modify the existing delivery schedule to a year-round M&I schedule, which would allow for a more consistent diversion of 6,000 AFY of the 8,000 AFY over the course of a given year.

Discretionary approval from the Bureau of Reclamation would be required for the use of CVP "Project Water" for M&I purposes and for modification of the existing delivery schedule. The City would be responsible for obtaining approvals from the Bureau of Reclamation. The City is serving as the lead agency under CEQA. The Bureau of Reclamation is a NEPA cooperating agency in relation to this project and would be required to comply with all applicable ESA requirements.

Water Supply Agreements

Surface water would be obtained from the NCMWC pursuant to a series of agreements between South Folsom Properties LLC (SFP) and NCMWC, the City and SFP, and the City and SCWA.

SFP and NCMWC Agreement

The SFP and NCMWC have executed *Terms and Conditions of Purchase and Sale of Water Entitlements* on December 17, 2007 for the initial purchase and sale of surface water from NCMWC (see Appendix E of the WSA).Under the SFP-NCMWC Agreement, NCMWC has agreed to permanently assign to the City, through SFP, not less than 8,000 AFY of CVP "Project Water" to which NCMWC has rights under its Renewal Contract with the Bureau of Reclamation and provides that the assigned water will be subject to a 25% reduction in a "Critical Year." The agreement identifies the conditions that are required by both parties to finalize the sale, which will ultimately lead to a permanent assignment of CVP "Project Water" to the City (see City of Folsom-SFP MOU, below). (Tully & Young 2010: 38).

The SFP-NCMWC Agreement is effective until April 1, 2012, unless extended by SFP. During the period that the SFP-NCMWC Agreement is effective, both SFP and NCMWC must satisfy specific obligations to ensure that water can ultimately be made available for use as a M&I supply. Those obligations include: (1) preparation of an

engineering study to ensure NCMWC may meet its future demands in the absence of the assigned su
approval from the Bureau of Reclamation to reschedule the assigned supply from an irrigation dema le
to a M&I schedule; and (3) completion of all state and federal environmental review. (Tully & Your 9.)

City of Folsom and SFP Agreement

The City of Folsom and SFP executed a non-binding MOU on August 26, 2008, which contemplates the assignment to the City of NCMWC water supplies acquired under the SFP-NCMWC Agreement (see Appendix F of the WSA). The MOU requires the City to evaluate the technical feasibility of delivering water on a year-round M&I schedule, diverting water from the Sacramento River at the FRWA facilities, and conveying water to the project site using FRWA facilities. The City and SFP cannot sign a binding legal agreement until after the environmental review is completed. (Tully & Young 2010: 39.)

City of Folsom and SCWA Capacity Agreement

The City of Folsom and the SCWA signed the *Memorandum of Understanding between the City of Folsom and Sacramento County Water Agency Concerning the Folsom Sphere of Influence Area and Sharing of Freeport Project Capacity* on December 15, 2009 (see Appendix M3). The MOU establishes principles and parameters to govern negotiations between the City and SCWA for purchase of a portion of SCWA's capacity in FRWA's diversion facilities for conveyance of NMCWC water to the project site. The City and SCWA will cooperate during the MOU's term limits with the goal of eventually executing a binding agreement. (Tully & Young 2010: 39.)

Reasonable Likelihood of Water Supplies to Meet Project Demands

It is the intent of the City of Folsom to obtain 8,000 AFY surface water from NCMWC. In each single-dry and multiple-dry years, it is assumed that the water supply is restricted by 25% resulting in a total supply of 6,000 AFY. Although 8,000 AFY is anticipated to be available through contract, for every normal water year between 2013 and 2033, the City would divert a maximum of 6,000 AFY to serve the project. (Tully & Young 2010: 45.)

The Proposed Project Alternative's water demands under normal and critically dry year conditions were compared to available water supplies to determine whether a reliable water supply is available to serve the Proposed Project and existing water demands during normal and dry years. As shown in Table 3A.18-7, adequate water supplies are available to meet projected water demands of the Proposed Project, even in critically-dry years.

Table 3A.18-7
Normal-Year and Dry-Year Comparison of Water Supply and Demand for the Proposed Project Alternative

Surface Water Supply and Demand	Normal-Year	Dry-Year
Supply	6,000	6,000
Demand	5,421	5,577
Total surplus	**579**	**423**

Notes: AFY = acre-feet per year
Source: Tully & Young 2010: 46

Impact Conclusion

Based on the above analysis and as shown in Table 3A.18-7, the proposed water supply from NCMWC would be sufficient to meet projected water demands under the Proposed Project Alternative in normal and critically dry

years. Those water supplies are considered reliable, and, as a physical matter, there is reasonable certainty that surface water supplies needed to serve the Proposed Project Alternative at buildout would be available. Although there is no complete certainty as to the legal and regulatory approvals required for the "Water" portion of the project or Off-site Water Facility Alternatives, including those from Reclamation and SCWA; the draft agreements and MOUs entered into between the City and/or project applicants and some of these critical approval entities (see Appendix M-I, M-II, and M-III) establish a solid initial framework for these approvals. This fact combined with the development the City's proposed Off-site Water Facility Alternatives as presented in Chapter 2, "Alternative" provide a high level of certainty for the reliability of the proposed CVP water supply, conveyance mechanisms, and water treatment capacity. Based on these circumstances, the project would have sufficient water supplies available to serve projected demand from CVP water supplies acquired as part of the City's Off-site Water Facility Alternatives and, therefore, the **direct** and **indirect** impacts of an insufficient water supply for the project are considered **less-than-significant**. ***[Similar]***

Indirect impacts from use of NCMWC surface water supplies to meet project demand, SCWA's dedication of up to 6.5 mgd in Segments 1 and 2 in the Freeport Project, and effects of changing the delivery CVP schedule from agriculture to M&I are evaluated throughout the "B", or "Water" sections of Chapter 3 and Chapter 4, "Other Statutory Requirements" contained in this DEIR/DEIS. It is assumed that once these entitlements are approved, the surface water supplies would continue to flow to City through the Freeport Project without interruption, barring a major shift in climate or policy, or unless current California water law principles are applied in a substantially more restrictive manner. However, given that the water supply cannot be secured and water conveyance and treatment facilities constructed in advance of approval of the project, without additional contingencies placed on the project applicants to confirm the availability of water and related infrastructure for the Folsom SPA, a **potentially significant direct** impact could result if no "Water" Project were implemented in a timely manner following approval of the Specific Plan. ***[Similar]***

Mitigation Measure 3A.18-1: Submit Proof of Surface Water Supply Availability.

a. Prior to approval of any small-lot tentative subdivision map subject to Government Code Section 66473.7 (SB 221), the City shall comply with that statute. Prior to approval of any small-lot tentative subdivision map for a proposed residential project not subject to that statute, the City need not comply with Section 66473.7, or formally consult with any public water system that would provide water to the affected area; nevertheless, the City shall make a factual showing or impose conditions similar to those required by Section 66473.7 to ensure an adequate water supply for development authorized by the map.

b. Prior to recordation of each final subdivision map, or prior to City approval of any similar project-specific discretionary approval or entitlement required for nonresidential uses, the project applicant(s) of that project phase or activity shall demonstrate the availability of a reliable and sufficient water supply from a public water system for the amount of development that would be authorized by the final subdivision map or project-specific discretionary nonresidential approval or entitlement. Such a demonstration shall consist of information showing that both existing sources are available or needed supplies and improvements will be in place prior to occupancy.

Implementation: The project applicant(s) of all project phases.

Timing: Before approval of final maps and issuance of building permits for any project phases.

Enforcement: City of Folsom Community Development Department and City of Folsom Public Works Department.

The discussion provided for the Proposed Project Alternative would also generally apply to the Resource Impact Minimization alternative with water supplies consisting of CVP water purchased from NCMWC and conveyed to the Folsom SPA via one of the Off-site Water Facility Alternatives described in Chapter 2, "Alternatives." Table 3A.18-8 shows projected water demands for the Resource Impact Minimization Alternative during normal, single-dry, and multiple-dry years. The total projected water demands for the Resource Impact Minimization Alternative at buildout are 4,449 AFY during normal years and 4,580 AFY during single-dry and multiple-dry years. The Resource Impact Minimization Alternative normal-year water demand would be 973 AFY less and single-dry and multiple-dry years would be 997 AFY less than the Proposed Project Alternative.

Water demands for the project would be met by securing a permanent assignment of long-term, CVP "Project Water" from the NCMWC under Contract No. 14-06-200-885A-R-1 (NCMWC CVP Contract) with the Bureau of Reclamation (Tully & Young 2010: 33). The normal year supply contractually available to the City would be not less than 8,000 AFY; however, the maximum diversion would be 6,000 AFY (Tully & Young 2010: 43). This higher quantity of water is required to factor in the 25% reduction that could occur in single-dry and multiple-dry years thereby reducing the quantity delivered to 6,000 AFY.

Table 3A.18-8
Summary of Land Use and Water Demands for the Resource Impact Minimization Alternative at Buildout

Land Use Type	Normal-Year Water Demands (AFY) [1]			Single-Dry and Multiple-Dry Year Water Demands (AFY) [2]		
	City of Folsom	EID	Total	City of Folsom	EID	Total
Single-Family	878	106	984	906	109	1,015
Single- Family High Density	1,023	62	1,085	1,045	63	1,108
Multifamily Low Density	564	--	564	575	--	575
Multifamily Medium Density	192	--	192	194	--	194
Multifamily High Density	57	--	57	57	--	57
Mixed-Use District [3]	72	--	72	72	--	72
Office Park	114	--	114	118	--	118
Community Commercial	26	--	26	27	--	27
General Commercial	235	40	275	244	42	286
Regional Commercial	180	--	180	186	--	186
Parks	418	--	418	439	--	439
Public/Quasi-Public	420	--	420	436	--	436
Circulation Improvements	60	2	62	63	2	65
Open Space	--	--	--	--	--	--
Total Demand [4]	**4,238**	**210**	**4,449**	**4,363**	**217**	**4,580**

Notes: AFY = acre-feet per year

[1] The total estimated water demand in a normal year assumes a 10% non-revenue water factor.

[2] The total estimated water demand in single and multiple dry years assumes an increase of 5% for outdoor water demands and then applies a 10% non-revenue water factor.

[3] The Mixed-Use District assumes residential and commercial land uses.

[4] Minor discrepancies in totals are a result of rounding.

Source: Tully & Young 2010; AECOM, 2010

The Resource Impact Minimization Alternative's water demands under normal and critically dry year conditions were compared to available water supplies to determine whether a reliable water supply is available to serve the project and existing water demands during normal and dry years. As shown in Table 3A.18-9, adequate water supplies are available to meet projected water demands of the project under the Resource Impact Minimization Alternative, even in critically-dry years.

Table 3A.18-9
Normal-Year and Dry-Year Comparison of Water Supply and Demand for the Resource Impact Minimization Alternative

Surface Water Supply and Demand	Normal-Year	Dry-Year
Supply	6,000	6,000
Demand	4,449	4,580
Total surplus	**1,551**	**1,420**

Notes: AFY = acre-feet per year
Source: Tully & Young 2010

Based on the above analysis and as shown in Table 3A.18-8, NCMWC has surface water supplies available to meet projected water demands under the Resource Impact Minimization Alternative in normal and critically dry years. The proposed NCMWC water supply is considered reliable, and, as a physical matter, there is reasonable certainty that surface water supplies needed to serve the Resource Impact Minimization Alternative at buildout would be available. The City has already completed extensive consultation and coordination with pertinent entities including Reclamation, NCMWC, and SCWA to establish the initial framework for these approvals. It is assumed that once the necessary approvals are secured, the surface water supplies would continue to flow to NCMWC without interruption, barring a major shift in climate or policy, or unless current California water law principles are applied in a substantially more restrictive manner. However, given that the water supply cannot be secured and water conveyance and treatment facilities constructed in advance of approval of the project, without additional contingencies placed on the project applicants to confirm the availability of water and related infrastructure for the Folsom SPA, a **potentially significant direct** impact could result if no "Water" project were implemented in a timely manner following approval of the Specific Plan. ***[Lesser]***

Mitigation Measure: Implement Mitigation Measure 3A.18-1.

CD

The discussion provided for the Proposed Project Alternative would also generally apply to the Centralized Development Alternative with water supplies consisting of CVP water purchased from NCMWC and conveyed to the Folsom SPA via one of the Off-site Water Facility Alternatives described in Chapter 2, "Alternatives." Table 3A.18-109 shows projected water demands for the Centralized Development Alternative during normal, single-dry, and multiple-dry years. The total projected water demands for the Centralized Development Alternative at buildout are 4,606 AFY during normal years and 4,737 AFY during single-dry and multiple-dry years. The Centralized Development Alternative normal-year water demand would be 816 AFY less and single-dry and multiple-dry years would be 840 AFY less than the Proposed Project Alternative.

Table 3A.18-10
Summary of Land Use and Water Demands for the Centralized Development Alternative at Buildout

Land Use Type	Normal-Year Water Demands (AFY) [1]			Single-Dry and Multiple-Dry Year Water Demands (AFY) [2]		
	City of Folsom	EID	Total	City of Folsom	EID	Total
Single-Family	417	--	417	430	--	430
Single- Family High Density	1,044	--	1,044	1,067	--	1,067
Multifamily Low Density	648	--	648	661	--	661
Multifamily Medium Density	416	--	416	421	--	421
Multifamily High Density	151	--	151	152	--	152
Mixed-Use District [3]	100	--	100	102	--	102
Office Park	247	--	247	256	--	256
Community Commercial	26	--	26	27	--	27
General Commercial	280	39	319	290	40	330
Regional Commercial	218	--	218	224	--	224
Parks	449	--	449	471	--	471
Public/Quasi-Public	511	--	511	529	--	529
Circulation Improvements	60	2	62	63	2	65
Open Space	--	--	--	--	--	--
Total Demand [4]	**4,566**	**41**	**4,606**	**4,694**	**42**	**4,737**

Notes: AFY = acre-feet per year
[1] The total estimated water demand in a normal year assumes a 10% non-revenue water factor.
[2] The total estimated water demand in single and multiple dry years assumes an increase of 5% for outdoor water demands and then applies a 10% non-revenue water factor.
[3] The Mixed-Use District assumes residential and commercial land uses.
[4] Minor discrepancies in totals are a result of rounding.
Source: Tully & Young 2010; AECOM, 2010

The Centralized Development Alternative's water demands under normal and critically dry year conditions were compared to available water supplies to determine whether a reliable water supply is available to serve the project and existing water demands during normal and dry years. As shown in Table 3A.18-11, adequate water supplies are available to meet projected water demands of the Centralized Development Alternative, even in critically-dry years.

Table 3A.18-11
Normal-Year and Dry-Year Comparison of Water Supply and Demand for the Centralized Development Alternative

Surface Water Supply and Demand	Normal-Year	Dry-Year
Supply	6,000	6,000
Demand	4,606	4,737
Total surplus	**1,394**	**1,263**

Notes: AFY = acre-feet per year
Source: Tully & Young 2010

Based on the above analysis and as shown in Table 3A.18-10, the proposed water supply to be assigned by NCMWC would be sufficient to meet projected water demands under the Centralized Development Alternative in normal and critically dry years. NCMWC water supplies are considered reliable, and, as a physical matter, there is reasonable certainty that surface water supplies needed to serve the Centralized Development Alternative at buildout would be available. The City has already completed extensive consultation and coordination with pertinent entities including Reclamation, NCMWC, and SWCA to establish the initial framework for these approvals. It is assumed that once these entitlements are approved, the surface water supplies would continue to flow to the City without interruption, barring a major shift in climate or policy, or unless current California water law principles are applied in a substantially more restrictive manner. However, given that the water supply cannot be secured and water conveyance and treatment facilities constructed in advance of approval of the project, without additional contingencies placed on the project applicants to confirm the availability of water and related infrastructure for the Folsom SPA, a **potentially significant direct** impact could result if no "Water" project were implemented in a timely manner following approval of the Specific Plan.***[Lesser]***

Mitigation Measure: Implement Mitigation Measure 3A.18-1.

RHD

The discussion provided for the Proposed Project Alternative would also generally apply to the Reduced Hillside Density Alternative with water supplies consisting of CVP water purchased from NCMWC and conveyed to the Folsom SPA via one of the Off-site Water Facility Alternatives described in Chapter 2, "Alternatives." The WSA prepared per the requirements of SB 610 for the Proposed Project also includes a separate determine whether the projected available water supplies would meet the Reduced Hillside Development Alternative's water demand, in addition to the existing and planned future uses. This alternative was included within the WSA because the density of development under the Reduced Hillside Development Alternative is higher than under the Proposed Project. However, as described in detail in Chapter 2, "Alternatives," the Reduced Hillside Development Alternative would include a variety of water conservation strategies that are not included in the Proposed Project.

Table 3A.18-12 shows projected water demands for the Reduced Hillside Development Alternative during normal, single-dry, and multiple-dry years. The total projected water demands for the Reduced Hillside Development Alternative at buildout are 5,395 AFY during normal years and 5,547 AFY during single-dry and multiple-dry years. The Reduced Hillside Development Alternative normal-year water demand would be 27 AFY less and single-dry and multiple-dry years would be 30 AFY less than the Proposed Project Alternative.

Table 3A.18-12
Summary of Land Use and Water Demands for the Reduced Hillside Development Alternative at Buildout

Land Use Type	Normal-Year Water Demands (AFY) [1]			Single-Dry and Multiple-Dry Year Water Demands (AFY) [2]		
	City of Folsom	EID	Total	City of Folsom	EID	Total
Single-Family	633	75	709	655	78	733
Single- Family High Density	708	--	708	724	--	724
Multifamily Low Density	1,034	62	1,096	1,058	63	1,121
Multifamily Medium Density	504	--	504	512	--	512
Multifamily High Density	483	--	483	489	--	489
Mixed-Use District [3]	93	--	93	95	--	95
Office Park	223	--	223	231	--	231
Community Commercial	24	--	24	25	--	25
General Commercial	274	54	328	284	56	340
Regional Commercial	201	--	201	207	--	207

Table 3A.18-12
Summary of Land Use and Water Demands for the Reduced Hillside Development Alternative at Buildout

Land Use Type	Normal-Year Water Demands (AFY) [1]			Single-Dry and Multiple-Dry Year Water Demands (AFY) [2]		
	City of Folsom	EID	Total	City of Folsom	EID	Total
Parks	592	35	627	621	37	658
Public/Quasi-Public	344	--	344	354	--	354
Circulation Improvements	55	2	57	57	2	59
Open Space	--	--	--	--	--	--
Total Demand [4]	**5,168**	**228**	**5,395**	**5,312**	**235**	**5,547**

Notes: AFY = acre-feet per year

[1] The total estimated water demand in a normal year assumes a 10% non-revenue water factor.

[2] The total estimated water demand in single and multiple dry years assumes an increase of 5% for outdoor water demands and then applies a 10% non-revenue water factor.

[3] The Mixed-Use District assumes residential and commercial land uses.

[4] Minor discrepancies in totals are a result of rounding.

Source: Tully & Young 2010: 31

The Reduced Hillside Development Alternative's water demands under normal and critically dry year conditions were compared to available water supplies to determine whether a reliable water supply is available to serve the project and existing water demands during normal and dry years. As shown in Table 3A.18-13, adequate water supplies are available to meet projected water demands of the Reduced Hillside Development Alternative, even in critically-dry years.

Table 3A.18-13
Normal-Year and Dry-Year Comparison of Water Supply and Demand for the Reduced Hillside Development Alternative

Surface Water Supply and Demand	Normal-Year	Dry-Year
Supply	6,000	6,000
Demand	5,395	5,547
Total surplus	**605**	**453**

Notes: AFY = acre-feet per year

Source: Tully & Young 2010

Based on the above analysis and as shown in Table 3A.18-13, the proposed water supply to be assigned by NCMWC is sufficient to meet projected water demands under the Reduced Hillside Development Alternative in normal and critically dry years. This supply is considered reliable, and, as a physical matter, there is reasonable certainty that surface water supplies needed to serve the Reduced Hillside Development Alternative at buildout would be available. The City has already completed extensive consultation and coordination with pertinent entities including Reclamation, NCMWC, and SCWA to establish the initial framework for these approvals. It is assumed that once these entitlements are approved, the surface water supplies would continue to flow to the City without interruption, barring a major shift in climate or policy, or unless current California water law principles are applied in a substantially more restrictive manner. However, given that the water supply cannot be secured and water conveyance and treatment facilities constructed in advance of approval of the project, without additional contingencies placed on the project applicants to confirm the availability of water and related

infrastructure for the Folsom SPA, a **potentially significant direct** impact could result if no "Water" project were implemented in a timely manner following approval of the Specific Plan. ***[Lesser]***

Mitigation Measure: Implement Mitigation Measure 3A.18-1.

Off-Site Elements

The water conveyance and storage facilities evaluated throughout the "B", or "Water" sections of Chapter 3 of this DEIR/DEIS would provide the necessary infrastructure needed to provide on-site water service to the SPA, and construction of the off-site freeway interchange improvements, sewer force main, and the detention basin in Sacramento County, and the two roadway connections into El Dorado Hills, would not involve construction of new housing or development of new businesses that would increase demand for water supply. Therefore, the off-site elements related to the "Land" portion of the project would have a **direct, less-than-significant** impact on the demand water supply. The **indirect** physical impacts of constructing the on-site water conveyance and storage facilities are addressed throughout this EIR/EIS in connection with discussions of the impacts of overall site development. ***[Similar]***

Mitigation Measure: No mitigation measures are required.

This project includes a water supply to serve the proposed development of the SPA. Implementation of Mitigation Measure 3A.18-1 therefore would reduce significant impacts related to the need for surface water supplies sunder the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives to a **less-than-significant** level because the City would require written certification verifying the availability of a long-term, reliable surface water supply for the project or would require that needed improvements be in place prior to occupancy.

IMPACT 3A.18-2 Increased Demand for Off-Site Water Conveyance and Treatment Facilities. *Project implementation would result in increased demand for off-site water treatment facilities to deliver water to customers on the project site.*

On-Site Elements

NP

Under the No Project Alternative, development of up to 44 rural residences could occur under the existing Sacramento County agricultural zoning classification AG-80. No off-site water facilities would be constructed, and there is currently no public water service available on the project site. Therefore, property owners under the No Project Alternative would be served by individual groundwater wells. Thus, the 44 individual rural residences that could be built under the No Project Alternative would not increase demand for municipal water conveyance facilities and there would be **no direct** or **indirect** impacts. Impacts associated with groundwater use from construction of individual wells on the rural residences under the No Project Alternative are evaluated in Section 3A.9, "Hydrology and Water Quality - Land." ***[Lesser]***

PP, RIM, CD, RHD, NF

Surface water would be diverted from the Sacramento River at FRWA's diversion facilities and conveyed to the SPA via both FRWA diversion facilities and the off-site conveyance facilities proposed in the "Water" portion of this DEIR/DEIS. (See Chapter 2, "Alternatives," for a detailed discussion of off-site conveyance pipeline alternatives and off-site WTP alternatives.)

The project would include purchasing from SCWA dedicated capacity within the FRWP, which would serve as the point of diversion on the Sacramento River and partial conveyance pathway for not more than 6,000 AFY of

CVP "Project Water" purchased from NCMWC. CVP "Project Water" would be pumped and conveyed through the FRWA diversion facilities and conveyance pipeline to the SCWA and EBMUD pipeline bifurcation point. New off-site water supply conveyance infrastructure would be constructed from the bifurcation point to the project site. (The impacts of constructing this new water supply conveyance infrastructure are evaluated throughout the "B", or "Water" sections of Chapter 3 of this DEIR/DEIS.)

As discussed above, the City and SCWA have entered into a MOU to develop conditions under which the City may convey surface water using SCWA's capacity, with the goal of eventually executing a binding agreement. (Tully & Young 2010: 39). Under this agreement, the City would purchase 6.5 mgd of dedicated capacity within the SCWA's 85 mgd portion of the FRWA's diversion facilities. This MOU would also allow for additional capacity to accommodate peaking conditions of up to 10 mgd. The use of this capacity would not increase SCWA's permitted diversion rates and would not require any increase in the FRWP's currently permitted diversion capacity. For this reason, no physical changes to the FRWP diversion and pump structure and conveyance pipeline would occur.

One raw or treated-water booster pumping station would need to be constructed at the connection with the Freeport Project to provide sufficient operating pressure within the force main. Depending on the water treatment option chosen, the connection point would occur at the Vineyard Surface WTP, some point along SCWA's proposed northern service area pipeline, or the existing Douglas Treated-Water Storage Tanks. The number and type of pumps would depend on detailed design criteria and the precise location for the pump station has not been selected. However, the City anticipates that this facility would be in close proximity to the associated connection point to the FRWA diversion facilities.

Water treatment could be provided either through purchasing 10-mgd capacity within the Vineyard Surface WTP, construction of a 10-mgd White Rock WTP located southeast of the intersection of White Rock Road and Prairie City Road, construction of a 10-mgd Folsom Boulevard WTP located south of Folsom Boulevard, or construction of a 10-mgd WTP located on the Folsom South of U.S. 50 project site (see Exhibit 2-3, in Chapter 2, "Alternatives").

Because the "Land" portion of the project site is not served by a public water system and sufficient off-site water conveyance and treatment facilities necessary to serve the project have not been constructed, and because the City and SCWA have not entered into a binding agreement for use of FRWA diversion facilities, this is considered a **direct, potentially significant** impact. The **indirect** physical impacts of constructing these water conveyance and treatment facilities are addressed throughout this EIR/EIS in the "B", or "Water" sections of Chapter 3 and in Chapter 4, "Other Statutory Requirements." ***[Similar]***

> Mitigation Measure 3A.18-2a: Submit Proof of Adequate Off-Site Water Conveyance Facilities and Implement Off-Site Infrastructure Service System or Ensure That Adequate Financing Is Secured.
>
> Before the approval of the final map and issuance of building permits for all project phases, the project applicant(s) of all project phases shall submit proof to the City of Folsom that an adequate off-site water conveyance system either has been constructed or is ensured or other sureties to the City's satisfaction. The off-site water conveyance infrastructure sufficient to provide adequate service to the project shall be in place for the amount of development identified in the tentative map before approval of the final map and issuance of building permits for all project phases, or their financing shall be ensured to the satisfaction of the City.
>
> **Implementation:** The project applicant(s) of all project phases.
>
> **Timing:** Before approval of final maps and issuance of building permits for any project phases.

Enforcement: City of Folsom Community Development Department and City of Folsom Public Works Department.

Mitigation Measure 3A.18-2b: Demonstrate Adequate Off-Site Water Treatment Capacity (if the Off-Site Water Treatment Plant Option is Selected).

If an off-site water treatment plant (WTP) alternative is selected (as opposed to the on-site WTP alternative), the project applicant(s) of all project phases shall demonstrate adequate capacity at the off-site WTP. This shall involve preparing a tentative map–level study and paying connection and capacity fees as determined by the City. Approval of the final project map shall not be granted until the City verifies adequate water treatment capacity either is available or is certain to be available when needed for the amount of development identified in the tentative map before approval of the final map and issuance of building permits for all project phases.

Implementation: The project applicant(s) of all project phases.

Timing: Before approval of final maps and issuance of building permits for any project phases.

Enforcement: City of Folsom Community Development Department and City of Folsom Public Works Department.

Off-Site Elements

The off-site water conveyance and treatment facilities would provide the necessary infrastructure needed to provide water service to the project site, and construction of the off-site freeway interchange improvements, sewer force main, detention basin, and the two roadway connections into El Dorado Hills would not involve construction of new housing or development of new businesses that would increase demand for water conveyance and treatment facilities. Therefore, the off-site elements required for the "Land" portion of the project would have a **direct, less-than-significant** impact on the demand additional off-site water conveyance and treatment facilities. The **indirect** physical impacts of constructing the on-site water conveyance and storage facilities are addressed throughout this EIR/EIS in the "B", or "Water" sections of Chapter 3 and in Chapter 4, "Other Statutory Requirements". ***[Similar]***

Mitigation Measure: No mitigation measures are required.

Implementation of Mitigation Measures 3A.18-2a and 3A.18-2b would reduce significant impacts associated with increased demand for off-site water conveyance and treatment facilities under the No USACE Permit, Proposed Project, Resource Impact Minimization, Centralized Development, and Reduced Hillside Development Alternatives to a **less-than-significant** level because adequate off-site water conveyance and treatment facilities would be documented or adequate financing would be secured before approval final maps and issuance of building permits.

3A.18.4 RESIDUAL SIGNIFICANT IMPACTS

Implementation of mitigation measures contained in this section would reduce impacts associated with increased demand for potable water supply and conveyance and treatment facilities to a **less-than-significant** level by ensuring the provision of adequate water supplies and construction of sufficient conveyance and treatment capacity in advance of approval of individual development applications with the Folsom SPA. This conclusion is supported by the fact that this project includes a water supply that, when implemented, would be sufficient to satisfy the water demands of the proposed SPA development. Therefore, no residual significant impacts would occur.

3A.18.5 WATER SUPPLY OPTIONS TO LONG-TERM WATER SUPPLY

The water supply analysis in a CEQA document is governed by California case law that requires the lead agency to consider both the relative certainty of new water supplies that a project would require and the impacts that could result from the use of those new water supplies. The following discussion introduces the principles governing water supply analyses in CEQA documents and distinguishes between the analysis of the certainty of supplies and the impact of providing those supplies. These principles are as follows:

1. An environmental impact report (EIR) may not assume a solution to problems of water supply, but must instead present sufficient facts to evaluate the pros and cons of supplying the required water. (*Santiago County Water District v. Orange* [1981] 118 Cal.App.3d 818, 829.)

2. The water supply analysis for large, multiphase projects may not be limited to the first few years or phases. Furthermore, the first or programmatic document for such a project may not defer analysis to future phases, but must analyze reasonably foreseeable impacts of supplying required water. The tiering principle does not allow deferral to future studies or documents. (*Santa Clarita Organization for Planning the Environment v. County of Los Angeles* [2003] 106 Cal. App. 4th 715, 723.)

3. An EIR evaluating a planned land use project must assume that all phases of the project will eventually be built and will need water. The EIR for such a project must analyze the impacts of supplying water to the entire project. (*Stanislaus Natural Heritage Project v. County of Stanislaus* [1996] 48 Cal.App.4th 182, 206.)

4. Future water supplies for a project must bear a reasonable likelihood of proving to be available. While absolute certainty is not required, water supplies must be identified with more specificity as projects progress from general to specific phases (*Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* [2007] 40 Cal. 4th, 412, 434). "Where, despite a full discussion, it is impossible to confidently determine that anticipated water sources will be available, CEQA requires some discussion of possible replacement sources or alternative to use of the anticipated water, and of the environmental consequences of those contingencies." (*Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* [2007] 40 Cal. 4th 412, 432.)

5. Although much of the case law focuses on the issue of certainty, the ultimate issue under CEQA is not whether an EIR establishes a likely source of water, but whether the document adequately analyzes the reasonably foreseeable impacts of supplying water to the project. (*Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* [2007] 40 Cal. 4th, 412, 434.)

The WSA concluded that the water supply that the City would acquire from NCMWC would meet projected water demands in normal and critically dry years, and it is reasonably certain as a physical matter that the surface water supplies could be delivered to the SPA in the amounts needed to serve the Proposed Project Alternative at buildout. However, there is no similar reasonable certainty from a legal and regulatory standpoint, since additional actions by the Bureau of Reclamation and SCWA would be necessary. Therefore, in case the surface water supplies do not become available because of the required regulatory and legal approvals, an analysis of optional sources of water in addition to the City's proposed water supply is provided below as required by the court in the case of *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova*, 40 Cal. 4th 412 (2007).

The following "Water Supply Options" have been developed and are evaluated herein:

- Option 1 – Groundwater from the Central Sacramento Groundwater Basin
- Option 2 – Other Senior Sacramento River Water Right Holders
- Option 3 – Conservation of Existing City Supplies and Water System Retrofit

The discussion and assessment of these Water Supply Options in this section follows the principles identified above. Accordingly, this analysis evaluates both the certainty of optional water supplies and provides a qualitative assessment of the impacts that could result from the use of those supplies commensurate with the requirements of CEQA. An impact is considered significant if the water supply option would result in a potential water shortage or another significant adverse physical impact on the environment. To facilitate a meaningful comparison between the water supply options and the Off-site Water Facility Alternatives, an indication is also provided as to whether the Water Supply Option would result in greater, lesser, or similar impacts to the Proposed Off-site Water Facility Alternative.

Option 1 - Groundwater from the Central Sacramento Groundwater Basin

Under water supply Option 1, the City would serve potable water demands within the SPA using groundwater supplies from the South American Groundwater Sub-basin; also locally referred to as the Central Sacramento Groundwater Basin. The existing Central Sacramento County Groundwater Management Plan (CSCGMP), dated February 2006, estimates the central groundwater basin's long-term sustainable yield at 273,000 AFY (CSCGMP, 2006). This value is based on the results of the Water Forum Agreement, which is described in more detail in Sections 3B.9, "Hydrology and Water Quality - Water," and 3B.17, "Groundwater – Water." Existing documentation, including the CSCGMP, suggests that between 20,000 to 40,000 AFY of groundwater supply remains available within the basin under existing conditions without exceeding the sustainable yield.

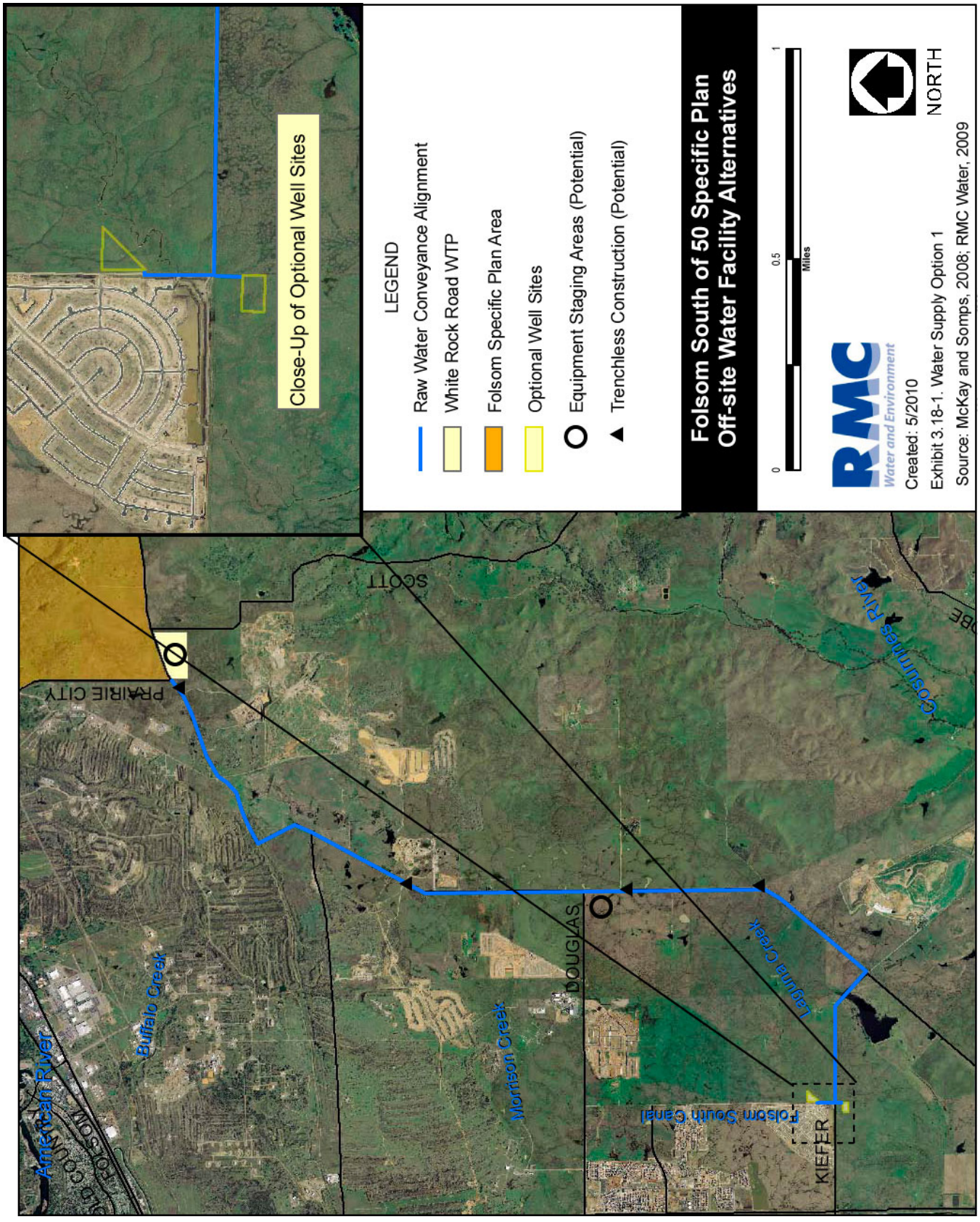
For this water supply option, up to 6.5 mgd of groundwater on average would be pumped from up to two well sites located near the intersection of Kiefer Boulevard and Jaeger Road and within the Suncreek Specific Plan area (see Exhibit 3A.18-1). The City would construct multiple 1,000-gallon-per-minute (gpm) capacity wells at one or both of the optional well sites. The two well sites are currently proposed for Public/Quasi-Public uses within the Suncreek Specific Plan area. The well field sites would be contained within an area totaling up to one acre. For the purposes of analysis, the City assumes that the wells could be drilled to depths of up to 500 feet below the ground surface (bgs). However, the actual depth of the wells has yet to be determined.

A new 30-inch, raw-water transmission pipeline would be constructed to convey the pumped groundwater approximately 9 miles from the well sites to the White Rock WTP located immediately south of the Folsom SPA. As shown in Exhibit 3A.18-1, the raw water conveyance pipeline would travel east along Kiefer Boulevard to Grant Line Road where it would then travel to the north to White Rock Road and then back to the east before arriving at the White Rock WTP. Similar to the Off-site Water Facility Alternatives, the conveyance alignment would be placed within roadway rights-of-way (ROW) for its entire length. A treated-water pipeline would extend from the White Rock WTP into the Folsom SPA.

For the purposes of this water supply option and given the complexities associated with operating a conjunctive use program, the City has not assumed the inclusion of any conjunctive use facilities, such as surface water infrastructure. Although the City would attempt to establish a conjunctive use strategy with one or more other groundwater users in the basin, as previously indicated, this water supply option would not explicitly depend on conjunctive use.

Water Supply Certainty

The water supply demand for the Folsom SPA under the Proposed Project is estimated at up to 5,600 AFY and would be well within the safe yield range of the basin. The CSCGMP indicates a 2030 normal year groundwater demand of 235,060 acre-feet, and a dry-year groundwater demand of 261,784. Based on these estimates, there is sufficient groundwater yield capacity for the City to supply the entire Folsom SPA demand using groundwater as the source of potable water supply. For these reasons, this supply is considered to have a high level of certainty.



Water Supply Option 1: Groundwater from the Central Sacramento Groundwater BasinExhibit 3A.18-1

Impact Discussion

Aesthetics

The description of the affected environment for Zone 4 of the "Water" Study Area as provided in Section 3B.1, "Aesthetics – Water," would apply for this water supply option With implementation of mitigation recommended in Section 3B.1, potentially significant impacts related to exterior finishes and nighttime security lighting would be **similar** and minimized through mitigation identified in Section 3B.1, "Aesthetics – Water," to **less-than-significant** levels.

Air Quality and Climate Change

Water Supply Option 1 lies within the same air quality setting as that described for the Off-site Water Facility Alternatives in Section 3B.2, "Air Quality. - Water." Each of the discussed air quality plans and policies, attainment status and existing air quality conditions for the Off-site Water Facility Alternatives will also apply to Water Supply Option 1. This option would also be located within the jurisdiction of the SMAQMD and will be subject to the SMAQMD's Rules and Regulations.

Sensitive receptors in the vicinity include planned rural and low-density residential land uses associated with the suncreek development located to the northwest of the optional well field site. Construction impacts would be similar in nature and magnitude to those estimated for Off-site Water Facility Alternative 1A. Due to the presence of sensitive receptors in close proximity to the well site(s) and conveyance alignment, construction impacts could be potentially significant. Further, these emissions in conjunction with the construction emissions resulting from installation of the WTP could contribute to exceedances of SMAQMD's standard for NO_X. As a result, this water supply option could result in **similar**, but likely greater, construction impacts as Off-site Water Facility Alternative 1A. These impacts would be **significant and unavoidable** after implementation of Mitigation Measures listed in Section 3B.2, "Air Quality – Water."

Biological Resources

The conveyance facilities for this water supply option follow a similar alignment to that of Proposed Off-site Water Facility Alternative following its crossing of the Folsom South Canal (FSC). Habitats and potentially occurring special status species identified for Proposed Off-site Water Facility Alternative could also be expected to occur in close proximity to the conveyance alignment for this water supply option. The one major exception is that this water supply option would avoid the wetland mitigation areas established west of the FSC and along the existing Freeport Project alignment, east of Eagles Nest Road.

The well fields would be constructed near the headwaters of Laguna Creek, which meanders approximately 100 to 150 yards southeast of the two possible well sites. Several seasonal tributary channels meander through each well site, thereby carrying the potential for direct impacts to wetlands and, potentially, vernal pools. Consequently, this water supply option could also have potential direct impacts on wetland and vernal pool-associated plant and animal species. Because of the proximity of the well sites from the channel, this water supply option is unlikely to result in direct biological impacts to Laguna Creek, but could result in indirect water quality impacts to the creek or adjacent wetland areas. These impacts would be **similar** to the Proposed Off-site Water Facility Alternative and would be **potentially significant**. Mitigation similar to that required for the Proposed Off-site Water Facility Alternative in Section 3B.3, "Biological Resources – Water," would be required under this alternative.

The construction of the well fields and WTP under this water supply option would result in the loss of introduced annual grassland habitat. This would not constitute a significant impact to biological resources due to this habitat type's relative abundance locally and regionally along with the degraded nature (i.e., prevalence of non-native plant species) of much of this community as a result of past land uses. This would be a **less-than-significant** impact.

Swainson's hawk and vernal pool fairy shrimp are documented within the vicinity of the well sites, WTP, and conveyance alignment and may be adversely impacted by the construction of this water supply option through the removal of suitable foraging habitat. Likewise, construction activities associated with this water supply option have the potential to cause nesting burrowing owls, bats, and other raptor species to abandon their nests. Additionally, construction on the WTP site may eliminate potential nest sites for burrowing owls. These would be considered **potentially significant** impacts and **similar** to the Proposed Off-site Water Facility Alternative. Implementation of the mitigation outlined in Section 3B.3, "Biological Resources – Water" would reduce these impact to a less-than-significant level.

Implementation of this water supply option could also result in direct impacts to vernal pool habitats through incidental fill during construction. A loss or "take" of vernal pool-associated species (vernal pool fairy shrimp, vernal pool tadpole shrimp, California linderiella, Boggs lake hedge-hyssop, slender orcutt grass, Sacramento orcutt grass, Crampton's tucktoria, Dwarf downingia, Ahart's dwarf juncus, and legenere) could also occur in this event. This impact is considered **potentially significant** and would require mitigation contained Section 3B.3, "Biological Resources – Water," **similar** to Proposed Off-site Water Facility Alternative.

Lastly, similar to Proposed Off-site Water Facility Alternative, the implementation of this water supply option could result in damage to or removal of native trees during construction activities along the conveyance alignment. This would conflict with policies of the Sacramento County General Plan and Tree Protection Ordinance and would be a potentially significant impact.

Climate Change

Sources of operational emissions associated with this water supply option would be similar to the Proposed Off-site Water Facility Alternative. As a consequence, the operational analysis under this water supply option would likely be similar to those identified for Proposed Off-site Water Facility Alternative in Section 3B.4, "Climate Change - Water." However, with the additional well pumping facilities included under this water supply option, the operational emissions of GHGs would likely be higher than those associated with the Proposed Off-site Water Facility Alternative. In this context, based on the significance determination for Off-site Water Facility Alternative 1A, the contributions of GHGs to regional and global emissions would be **significant and unavoidable** even after implementation of Mitigation Measures listed in Section 3B.4, "Climate Change-Water," **similar** to the Proposed Off-site Water Facility Alternative.

Cultural Resources

The cultural resource setting for water supply option 1 is similar to that of the Proposed Off-site Water Facility Alternative, which is indicative of the Sacramento Valley; a relatively flat plain with meandering rivers and creeks interspersed throughout the landscape. Throughout the prehistoric period, the Sacramento Valley would have provided a rich array of terrestrial and riverine resources for indigenous groups, namely along the nearby riverine environments of Laguna Creek and the Cosumnes River (see Section 3B.5, "Cultural Resources – Water"). However, the principal settlements were located on natural rises set above the periodic flooding of the Delta and the tributaries of the Sacramento and San Joaquin rivers, such as the American and the Cosumnes Rivers.

Artifacts or unusual amounts or types of stone, bone, or shell may be uncovered during site reconnaissance or actual construction activities **similar** to the Proposed Off-site Water Facility Alternative. This would be a **potentially significant** impact that would require mitigation similar to that described in Section 3B.5, "Cultural Resources – Water."

Environmental Justice

No low-income or minority pollutions are identified along the conveyance alignment or WTP for this water supply option and therefore **no impacts** would occur; **similar** to the Proposed Off-site Water Facility Alternative.

Geology, Soils, and Paleontological Resources

This water supply option is mapped on the same geologic formations as of that of the Off-site Water Facility Alternatives. The well sites and conveyance alignment are not mapped within an Alquist-Priolo Earthquake Fault Zone or located within 15 km of a Class A or Class B fault source (DMG Special Publication 42, 1997). Based on these factors, ground rupture at the possible well sites resulting from seismic activity is unlikely. Likewise, the corresponding potential for ground lurching, differential settlement, and/or lateral spreading to occur during or following seismic events near the possible well sites is considered very low and **similar** to the Proposed Off-site Water Facility Alternative. Provided geotechnical engineering recommendations are followed during site preparation as required by mitigation contained in Section 3B.7, "Geology, Soils, and Paleontological Resources - Water," these **potentially significant** impacts would be reduced to a less than significant level.

According to the Soil Survey for Sacramento County (Web Soil Survey 2010), soils located on the possible well and WTP sites may contain expansive clays within some portion of the profile. These soil-related impacts could be **potentially significant** and would be **similar** to the Proposed Off-site Water Facility Alternative thereby requiring mitigation.

This conveyance alignment under this water supply option would be required to cross some of the potentially sensitive paleontological **similar** to the Proposed Off-site Water Facility Alternative. With the implementation of the mitigation measures identified in Section 3B.7, "Geology, Soils, and Paleontological Resources - Water," **potentially significant** impacts related to geology, soils, and paleontological resources would be reduced to a less-than-significant level.

Hazards and Hazardous Materials

The setting description provided for Zone 4 and the White Rock WTP in Section 3B.8, "Hazards and Hazardous Materials-Water," would generally apply to the conveyance and treatment facilities required for this water supply option. The regulatory agency database search complied for the Off-site Water Facility Alternatives included the possible well sites and WTP and revealed no indication of preexisting hazardous materials, LUST, or UST sites on record. The potential to encounter previously undocumented hazardous materials contamination would be **similar** to the Proposed Off-site Water Facility Alternative and **potentially significant**. This impact could be mitigated through the implementation of mitigation in Section 3B.8, "Hazards and Hazardous Materials-Water."

Impacts related to wildlife hazards, risk of upset, and airport safety would be **similar** to the Off-site Water Facility Alternatives and **potentially significant**. This impact could be mitigated through the implementation of mitigation in Section 3B.8, "Hazards and Hazardous Materials-Water."

As described in more detail in Section 3B.17, "Groundwater - Water," several groundwater contaminant plumes exist within the "Water" Study Area and to the north and west of the optional well sites. These plumes are known to exist from source areas at Mather Field, Aerojet, and Boeing and are illustrated in Exhibit 3B.17-3. Although other localized plumes exist in and around Zone 4 of the "Water" Study Area, the principal plumes shown in Exhibit 3B.17-3 are the largest and have the greatest current impact on existing groundwater use. As described in Section 3B.17, "Groundwater - Water," for the Mather Field plumes, the primary contaminants of concern (COCs) are tetrachloroethylene (TCE), perchloroethylene (PCE), and carbon tetrachloride. The Mather Field plume edges represent a composite COC concentration of 0.5 mg/L, which is one-tenth of the maximum contaminant level (MCL) for these constituents. For the Aerojet and Boeing plume, the primary COCs are TCE, n-nitrosodimethylamine (NDMA), and perchlorate.

As part of this water supply option, groundwater resources in the vicinity of Kiefer Road, east of Sunrise Boulevard would be pumped via multiple 1,000 gpm wells with a rated capacity of up to 10 mgd. Under this water supply option, wells would be drilled to depths of up to 500 feet, similar to municipal wells operated by SCWA within eastern portions of SCWA's Zone 40. Table 3A.18-14 shows the water quality for groundwater wells to the north (SCWA – Mather, Anatolia) and south (Laguna, Grant Line) of the two possible well sites. As

provided in Table 3A.18-14, groundwater within the vicinity of these wells meets drinking water standards, but differs substantially between the north and south in certain instances. With an untested level of pumping at the well sites considered for this water supply option, the potential for pumping to result in the migration of these contaminant plumes in the direction optional well or other existing well sites is considered a **potentially significant** impact. This impact is **greater** than groundwater quality impacts associated with the Proposed Off-site Water Facility Alternative. Mitigation for this impact would require the use of sophisticated modeling to enable for prediction of pollutant fate and transport.

For example, wells within the Laguna area to the south of Zone 4 of the "Water" Study Area exhibit elevated levels of nitrates, arsenic, TDS, boron, chromium VI, and THMs (total). In contrast, SCWA's Mather wells to the north exhibit elevated concentrations of lead, high pH, and require mandatory sampling and monitoring for NDMA, TCE, and perchlorate. However, as provided in Table 3A.18-14, these chemical by-products were not detected in 2007 groundwater samples. Based on these results and the fact that local groundwater supplies are already used for potable uses within Zone 4 of the "Water" Study Area, the use of groundwater would not create a significant hazard to users within the Folsom SPA. In contrast to the CVP water supply from NCMWC for the Off-site Water Facility Alternatives, groundwater supplies may exhibit more issues related to taste and odor along with higher TDS levels, which would be considered a **potentially significant** impact; **greater** than the Proposed Off-site Water Facility Alternative.

Hydrology, Water Quality, and Groundwater

The siting of well sites within the Suncreek Specific Plan area would follow the requirements of CDPH Bulletin 79, which requires minimum separation of 50 feet between a sewer line and domestic well. As part of this water supply option's design, the location of all existing utilities, including sewer lines, and registered septic systems within 75 feet of the proposed wells site and pipeline alignments would be determined. If any well is determined to be within the 50 foot separation, the relocation of the pipeline or well, depending on feasibility, will be required to achieve the minimum 50 foot separation. Compliance with these regulations would ensure that impacts to local water supply wells are **less-than significant**. These well-related impacts would be **greater** than the Proposed Off-site Water Facility Alternative.

Groundwater Quality. Activities associated with the construction and operation of the well facilities under this option would involve the pumping of groundwater resources from the north-eastern portion of the South American Subbasin from depths up to 500 feet bgs. Property owned by Aerojet is located approximately four miles north of the well sites and is included on the U.S. EPA's National Priority List (NPL) for contamination that resulted from the manufacturing of liquid and solid propellant rocket fuels. The use of groundwater supplies from this portion of the South American Subbasin has the potential to influence the distribution and extent of existing contamination associated with the Aerojet property to the north-northwest. The main COCs include TCE, NDMA, and perchlorate. The extent of these plumes is illustrated in Figure 3B.17-3.

Portions of the Aerojet property included within the NPL designation were divided into smaller project areas, called Operable Units (OUs), to prioritize investigation and cleanup work (EPA 2007). Two OUs, the Western Groundwater (OU3) and Perimeter Groundwater (OU5), were designated to identify areas where control mechanisms are being implemented to slow the movement of chemicals in groundwater migrating at or beyond the periphery of the Aerojet property. The Western Groundwater OU was the first such area to be investigated with cleanup actions currently being implemented (EPA, 2007). These actions include containing, treating, and discharging the contaminated groundwater on the western and northwestern sides of the property through Aerojet's GET program to prevent the continued migration of chemicals off-site in groundwater. The treatment strategy involves removal of perchlorate, nitrate, and nitrite using a biological treatment process developed by Aerojet; removal of NDMA and high level VOCs with ultraviolet light; and removal of the remaining VOCs by air stripping or carbon filtration. A total of 33 extraction wells are currently in operation, and another four wells were planned for operation by the end of 2007 (Sacramento County, 2008b).

Table 3A.18-14
Treated Groundwater Quality Data for SCWA's Eastern Service Areas

Parameter	Units	Municipal Drinking Water Standards				Treated SCWA Groundwater (2007)	
		MCL	SMCL	PHG (MCLG)	DLR	Mather, Sunrise, Anatolia - Range (Min/Max)	Laguna, Vineyard, Grant Line - Range (Min/Max)
Aluminum	Ppb	1,000		600	50	ND	*
Arsenic	Ppb	10		0.004	2	ND	ND-25
Barium	Ppm	1		2	0.1	ND	ND-0.18
Lead	Ppm	2		1	0.1	14 (max)	ND
Copper	Ppm	--	1	0.17	0.05	0.08	0.180
Nitrate as NO_3	Ppm	45		45	2	ND	ND-11
Fluoride	Ppm	2		1	--	ND-0.67	ND-0.71
Gross Alpha particle activity	pCi/L	15		(0)	3	ND	ND-4.5
Perchlorate	Ppb	6		(0)	4	ND	*
NDMA	Ppb	MO		--		ND	*
Trichloroethylene (PCE)	Ppb	5		0.06	--	ND	*
Trichloroethylene (TCE)	Ppb	5		0.8	0.5	ND	*
Total coliform bacteria	% positive samples	5% per mo.		(0)		0%	0%
Trihalomethanes (total)	Ppb	80		NA	0.5	ND	ND-84
Halocetic Acids	Ppb	60		--	--	ND	NA-83
Chlorine	Ppm	4		4	--	0.65-1.16	0.01-1.10
Chromium VI	Ppb	MO			0.5	MA	ND-8.4
Iron	Ppb		300	NS	100	ND	ND-0.16
Manganese	Ppb		50	NS	20	ND	ND-0.03
pH	Units		6.5-8.5	NS		8.2-8.3	7.6-8.4
Specific Conductance	µmhos/cm		1,600	NS		148-188	100-770
Vanadium	Ppb		MO	50	0.5	*	NA-10
Total dissolved solids	Ppm		1,000	NS		152-178	76-530
Turbidity	NTU		5	NS	0.1	0.2-0.25	ND-1.5
Boron	Ppb		MO	NL-1000	100	NA	NA-580
Hardness as $CaCO_3$	Ppm			3		54-56	ND-310

Notes: DLR – Detection Limit for purposes of reporting
MCL – Maximum Contaminant Level
MCLG – Maximum Contaminant Level Goal
µmhos/cm – micromhos per centimeter
MO – Monitored Only
NA – Not Applicable
ND – Not Detected
NS – No Standard
NTU – Nephhelometric turbidity unit
pCi/L – picocuries per liter
PHG – Public Health Goal
ppb – parts per billion
ppm – parts per million
SMCL – Secondary Maximum Contaminant Level
* - note sampled or not reported

Source: City of West Sacramento, 2007 and 2008

The Perimeter Groundwater OU encompasses four additional groundwater zones along the northern, eastern, and southern boundaries of the Aerojet property. The final Perimeter Groundwater OU Remedial Investigation/Feasibility Study (RI/FS) was anticipated in 2008, but was not available for review prior to circulation of this EIR/EIS. The RI/FS will include a determination of the appropriate remedial action for the investigated areas. Given that the groundwater plume is not fully contained or remediated and may be susceptible to movement by operations of nearby wells, it is not known whether the operation of the wells under this option could contribute to effects or alter the distribution of this contaminant zone. With an untested level of pumping at the well sites considered for this water supply option, the potential for pumping to result in the migration of these contaminants in the direction well sites is considered a **potentially significant** impact that is **greater** than groundwater quality impacts associated with the Proposed Off-site Water Facility Alternative. Mitigation for this impact would require the use of sophisticated modeling to enable for prediction of pollutant fate and transport.

Kiefer Landfill is located to the south east of the well sites. A release of waste constituents from the landfill to groundwater was discovered in 1989. Since then, numerous detection and corrective action monitoring wells have been installed. Monitoring of the shallow Zone[1] A shows the presence of various VOCs, including, but not limited to, tetrachloroethene, trichloroethene, 1,2-dichloroethene, and vinyl chloride. The shallow VOC plume extends beyond the landfill footprint about 4,000 feet to the southwest. The source area was identified as the unlined landfill Module M1. No VOCs have been detected in the lower aquifer since 1999 when trace levels were still present.

In 1995, Sacramento County installed a groundwater extraction system, including several extraction wells and a pump and treat system. Groundwater is currently extracted from 14 wells at a combined average rate of about 1,000 gpm. The system includes two air stripper towers, a carbon absorption filter, and several extraction wells. Pump and treat remediation began in April 1995, with the objective of containing the spread of the plume and reducing VOC levels in the source area. According to the monitoring reports submitted through 2006, groundwater extraction has removed over 700 pounds of VOCs from the groundwater since 1995, and resulted in an approximate 75% reduction in mass of VOCs in the groundwater (RWQCB, Order No. R5-2007-0014, 2007).

Due to the preexisting sources of nearby contamination, this option could cause potentially significant impacts in the form of increased migration of the existing contaminated groundwater plumes. Mitigation would be required as an assurance that new pumping as part of the operation of the well facilities does not affect the migration of existing contaminants. However, even with this mitigation, the City would be unable to guarantee that this potential impact could be reduced to a less-than-significant level until pumping has commenced over time. For this reason, this impact is considered **significant** and **unavoidable** and **greater** than the Proposed Off-site Water Facility Alternative.

*Groundwater Withdrawal***.** The operation of the wells under this option would require the direct pumping of groundwater at a maximum rate of up to 5,600 AFY. As indicated in the setting discussion in Section 3B.17, "Groundwater - Water," the WFA sets the sustainable yield for the South American Subbasin at 273,000 AFY. Based on information contained in the Freeport Project EIR (2003) and CSCGMP (2006), current groundwater demands (2005) within the South American Subbasin are estimated at 250,000 AFY. Of this total, SCWA currently pumps, on average, 131,000 AFY. With the completion of the Freeport Project, SCWA anticipates diverting up to 90,000 AFY[2] of surface water during normal years thereby reducing its groundwater pumping to 41,000 AFY. This initial reduction in groundwater demand from SCWA would reduce total groundwater demand within the South American Subbasin to 159,000 AFY. Given that the Freeport Project would be online in advance of this option's operation, total groundwater demands under a worst-case, critical dry year scenario would only be increased to 164,500 AFY. Given that this estimate is substantially lower than the South American Subbasin's sustainable yield of 273,000 AFY, the additional demands for groundwater under this option would have **less-**

[1] A-zone lies between approximately 60 and -20 feet mean sea level (MSL), with groundwater first encountered at about 60 to 190 feet below the ground surface.

[2] SCWA's total surface water supplies for Zone 40 are assumed to include 68,500 AFA in CVP and appropriated supplies and 12,000 AFA and 9,300 AFA from the Purveyor Specific Agreement with the City of Sacramento.

than-significant impacts and would not be expected to lead to overdraft of groundwater basin. This impact; however, would be **greater** than the Proposed Off-site Water Facility Alternative.

Over the long-term, total water demands within the South American Subbasin are estimated to approach approximately 255,000 AFY[3,4] in the year 2030 for a critically dry year (CSCGMP, 2006). Total groundwater demand becomes substantially reduced at 235,000 AFY during wet and normal years when surface water supplies are available, thereby allowing the basin to recharge. Under this option, total groundwater demands could approach 260,500 AFY[5] by 2030. This estimate is short of the 273,000 AFY sustainable yield estimate for the South American Subbasin based on the WFA and leaves a margin of 12,500 AFY of available capacity for other potential users under future conditions. Because groundwater pumping directly and indirectly associated with this water supply option would not exceed sustainable yield recommendations, groundwater levels within the South American Subbasin under future conditions are projected to remain at levels above those accepted by the WFA. Based on these findings, this impact is considered less than significant.

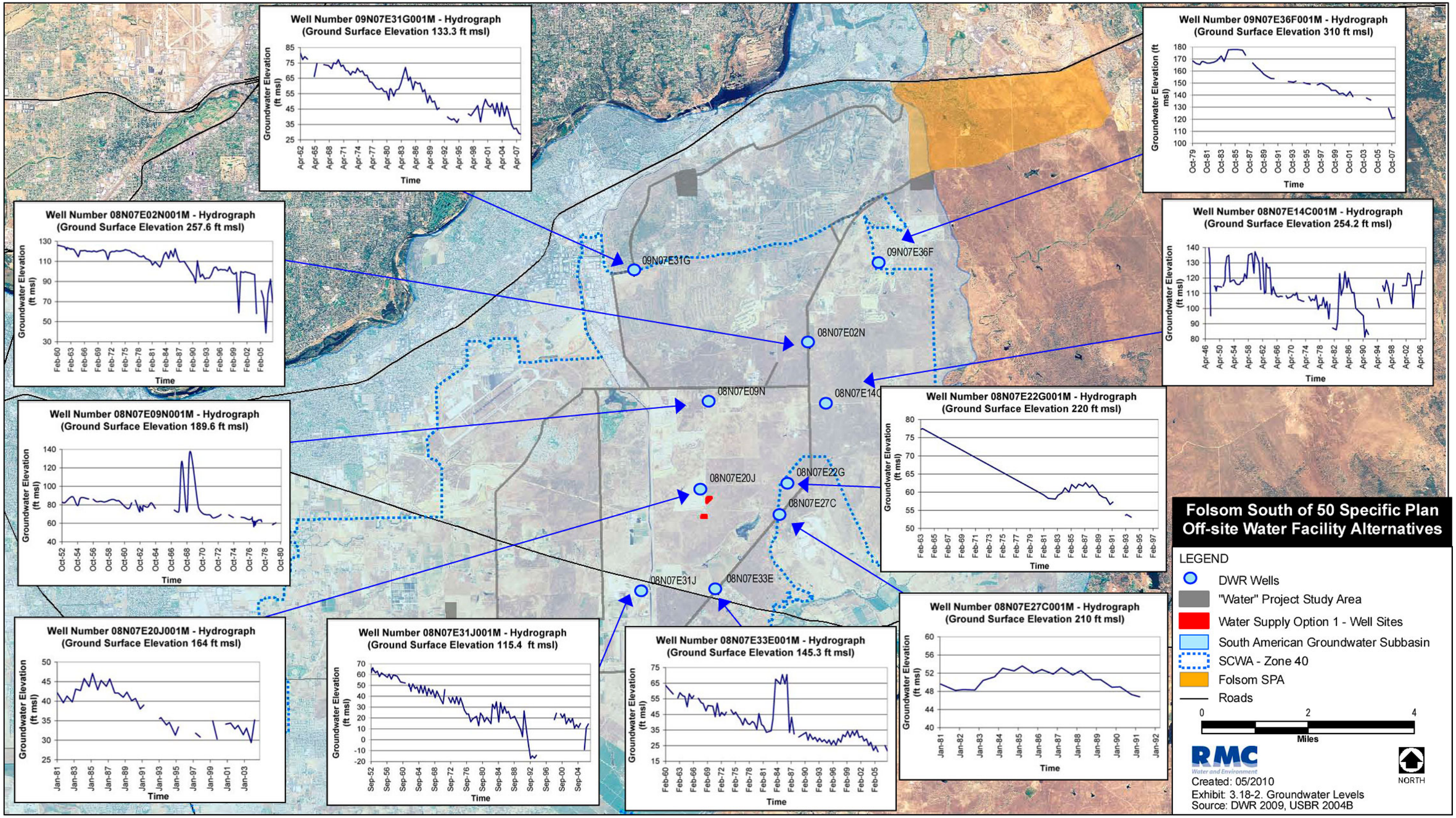
Under cumulative conditions and beyond 2030, other sources of demand are identified in the Sacramento County General Plan Update EIR in unincorporated portions of the County. These additional sources of demand combined with the Folsom SPA could lead to exceedances of the groundwater basin's safe yield and lead to a further lowering of the regional aquifer. This would be a **significant** and **unavoidable**, cumulative impact that is **greater** than groundwater impacts associated with the Proposed Off-site Water Facility Alternative.

Drawdown in Adjacent Wells. From a more localized perspective, the well facilities under this option would include multiple wells that would have individual capacities of 1,000 gpm and drilled to a depth of less than 500 feet bgs. With new pumping comes the potential for localized drawdown to occur and the potential for lowering of groundwater levels in adjacent wells depending on the rate aquifer recovery. Current literature suggests that the deep, water-bearing zones of the Mehrten Formation can yield between 1,000 and 1,400 gallons per minute (gpm) with a specific capacity of 46–100 gpm per foot of drawdown (ERM 2003). These yields are highest in the central portion of the valley, where well-sorted sands are predominant, and lowest along the eastern margins of the Sacramento Valley.

Without actual pump testing, the City is unable to quantify the duration of any drawdown and whether groundwater levels would return to pre-pumping levels following one or more normal to above normal precipitation cycles. In assuming a localized drawdown within a range of 20 to 40 feet and in evaluating the historical data provided in Exhibit 3A.18-2, drawdowns could exceed the historical range of groundwater level fluctuations during drought conditions. Groundwater pumped from the wells could affect existing irrigation wells and nearby wells planned by SCWA, potentially reducing pumping performance and resulting in increased energy consumption due to an increase in required pumping lift. The effects of any localized drawdown could result in localized impacts that could be **potentially significant** to adjacent groundwater uses, but less than significant in the context of the larger groundwater basin. These impacts would be **greater** than the Proposed Off-site Water Facility Alternative and would require mitigation in the form of a Well Operations Optimization Plan to determine optimal operating performance criteria to minimize drawdown in adjacent wells.

Alteration of Surface Water Hydrology. As part of this option, the City would rely on groundwater extracted from multiple groundwater wells to meet water demands for the Folsom SPA. The groundwater would be extracted from wells constructed to a depth of 500 feet and tap water-bearing sediments within the Mehrten Formation. No drilling investigations have been conducted at the possible well sites under evaluation and, therefore, the site-specific composition of the underlying geologic materials is not known.

[3] A conservation factor or 25.6 percent is applied to 2030 water demand estimates per the WFA.
[4] Groundwater use for 2030 assumes the inclusion of Aerojet GET extraction rates, estimated at 35,890 AFY.
[5] Estimate based on an average annual increase in pumping within SCWA's service are of 6.4 mgd or 7,200 AFY.



Groundwater Hydrographs for the Eastern South American Subbasin **Exhibit 3A.18-2**

The interaction between groundwater and surface water has not been extensively evaluated in the South American Basin. A recent draft decision by the SWRCB (2003) regarding the American River concluded that from Nimbus Dam to about 6,000 feet below the dam, groundwater elevations and surface water elevations were similar enough to each other that groundwater could be tributary to the American River. Beyond 6,000 feet down river from the dam, groundwater elevations are sufficiently lower than the river channel to conclude that the American River is a "losing" stream down to its confluence with the Sacramento River.

The wells constructed under this option would be at depths that would be expected to provide sufficient separation between the wells and the American River, which is more closely linked to groundwater associated with the Laguna formation. Given that these wells would tap geologic materials substantially lower than the Laguna formation and the well sites are located over five miles south of the River, this option is expected to result in **less-than-significant** impacts to surface water flows within the American River; however, any impacts could be **greater** when compared to the Proposed Off-site Water Facility Alternative.

Surface Hydrology and Water Quality. No impacts related to changes in flows within the Sacramento River would occur under this water supply option. Other impacts related to increases in runoff as a result of new imperious surfaces, and construction-related water quality concerns would be **similar** to the Proposed Off-site Water Facility Alternative. These impacts would be **similar** to the Proposed Off-site Water Facility Alternative and would be **potentially significant**, but reduced to a less-than-significant level through the implementation of mitigation prescribed in Section 3B.9, "Hydrology and Water Quality – Water."

Land Use and Agricultural Resources

Existing land uses surrounding the facilities described for this water supply option would be similar to those described for the Off-site Water Facility Alternatives in Section 3B.10, "Land Use and Agricultural Resources – Water." The optional wells sites are generally vacant and comprise non-native annual grassland. New low-density residential uses are currently planned for much of the surrounding area. Both well sites are located on lands designated as "Public" uses in the Suncreek Specific Plan. The number of residences in the vicinity of the well sites affected by the operation of the pumping facilities and well fields would depend on the location, configuration of the well sites, and the proximity of new residential structures. Potential impacts resulting from this close proximity could involve nuisance-related effects that are minor and considered less-than-significant.

The construction of the well field(s), pump and conveyance facilities, and WTP under water supply Option 1 would not convert any prime farmland, unique farmland, or farmland of statewide importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural uses. Likewise, this area is currently planned for residential development and all Williamson Act Contracted lands are currently under cancellation or non-renewal status. However, **similar** to the Proposed Off-site Water Facility Alternative, premature cancellation of a Williamson Act Contract is considered a **significant and unavoidable** impact of Water Supply Option 1.

Typically in most areas of California, overlying land owners and groundwater appropriators may extract percolating ground water and put it to beneficial use without approval from the SWRCB. In general, overlying landowners' rights to such ground water are senior to those of appropriators, which are entities that do not use pumped water on property that they own that also overlies the relevant ground water basin. Under this water supply option, the City would be a ground water appropriator. California does not have a permit process for regulation of ground water use. In several basins, however, groundwater use is subject to regulation in accordance with court decrees adjudicating the ground water rights within the basins. There has not been, however, any adjudication of the groundwater basin that is relevant for this water supply option.

Under this water supply option, the City would be effectively appropriating up to 5,600 AFY of groundwater and conveying this water to the Folsom SPA. Sacramento County has an adopted Groundwater Ordinance that addresses the export of groundwater and surface water within the County. The ordinance requires that

groundwater not be transported from the County without a permit issued by the Sacramento County Department of Water Resources. By virtue that the pumped groundwater would remain within the County, the use of groundwater as proposed under this option is not inconsistent with State or county law, but may be subject to priorities from other overlying groundwater users in the future. This impact is considered **less-than-significant**, but **greater** than the Proposed Off-site Water Facility Alternative.

Noise

The ambient noise environment for this water supply option is similar to that described for Off-site Water Facility Alternatives 1 and 1A. Sensitive receptors identified for Off-site Water Facility Alternative 1 would be similar to this option. Likewise, applicable noise regulations and standards for this option are the same as discussed for Off-site Water Facility Alternatives 1 and 1A.

Construction activities would result in temporary increases in noise levels in the vicinity of the conveyance alignment, well, and WTP site. Construction activities would generate noise levels **similar** to the Proposed Off-site Water Facility Alternative corresponding to the appropriate phase of construction and the noise-generating equipment used during those phases. These impacts could be **potentially significant**.

Construction-related noise levels would be comparable in magnitude with those identified for Off-site Water Facility Alternative 1. Construction noise at nearby residential locations would be substantially greater than existing noise levels and would likely increase day-night levels in close proximity to the construction areas during construction. This would be considered a temporary but significant impact. As is the case with Proposed Off-site Water Facility Alternative, **potentially significant** construction noise impacts under this option would be reduced to a less-than-significant level with the incorporation of mitigation measures identified in Section 3B.11, "Noise – Water."

The principal long-term, operational noise impacts resulting from this option would result from the pumps and generators operated at the well site, booster pump station, and the WTP. Impacts resulting from the WTP and booster pump station would be the same as those discussed in Section 3B.11, "Noise – Water." It is expected that noise generated from the well pumps would be similar to that of the other facility pumps. Based on the findings contained in Section 3B.11, "Noise – Water" for these facilities, the combined operation of the pumps and back-up generator, depending on the proximity to the nearest sensitive receptor could result in a **potentially significant** impact; **similar** to the Proposed Off-site Water Facility Alternative. Mitigation measures identified in Section 3B.11, "Noise – Water" would reduce these impacts to a less-than-significant level.

Recreation

This option would be constructed within urbanizing portions of eastern Sacramento County and is not expected to result in substantial deterioration of existing scenic vistas or natural landscapes at the well field or WTP. This water supply option would avoid impacts to the FSC and, therefore, impacts would be **lesser** under this water supply option and **less-than-significant**.

Traffic and Transportation

Similar to Proposed Off-site Water Facility Alternative, a majority of the conveyance pipeline under this option would be constructed within existing roadway rights of way (ROW). Traffic-related impacts associated with this option would generally be associated with construction in the form of short-term and intermittent reductions of roadway capacities associated with the movement of construction equipment. Lane blockage caused by construction traffic would also be temporary and would only affect roadway capacity within the immediate vicinity of pipeline construction. These impacts would be **potentially significant**, but could be reduced to a less-than-significant, **similar** to the Proposed Off-site Water Facility Alternative, with mitigation contained in Section 3B.15, "Traffic and Transportation-Water."

Over the longer-term, this option would generate a negligible operational vehicle trips and, therefore, is not expected to result in long-term degradation in roadway operating conditions or level of service. **Similar** to the Proposed Off-site Water Facility Alternative, this impact would be less-than-significant.

Utilities and Service Systems

This option would be constructed within the same general vicinity as the Off-site Water Facility Alternatives with several municipal and private utilities located in the area, including those owned and operated by SCWA, PG&E, Sacramento Municipal Utility District (SMUD), Sacramento Regional County Sanitation District (SRCSD) and County Sanitation District (CSD)-1a. Construction activities associated with his option could potentially result in a disturbance of existing utilities or conflict with planned utility projects. This impact is considered **potentially significant**, but **similar** to the Proposed Off-site Water Facility Alternative, this impact could be reduced to a less-than significant level through mitigation contained in Section 3B.16, "Utilities and Service Systems – Water."

The solid waste generated by this option along with the energy required during its construction and long-term operation would be similar to that of Proposed Off-site Water Facility Alternative. This Option would require the implementation of mitigation contained in Section 3B.4, "Climate Change - Water," to encourage energy efficiency and minimize this option's carbon footprint. **Similar** to the Proposed Off-site Water Facility Alternative, this impact would be **less-than-significant**.

Water Supply Option 1 Conclusion

Water Supply Option 1, which would use groundwater supplies from the Central Sacramento County Groundwater Basin, entails concerns related to the long-term reliability of groundwater supplies. In addition, there are also concerns related to the migration of existing groundwater contamination in eastern Sacramento County as a result of additional pumping under this water supply option.

Option 2 – Other Senior Sacramento River Water Right Holders

Under Option 2, the City would acquire up to 8,000 AFY from one or more senior water rights holders on the Sacramento River to meet dry-year conditions. Supplemental water supplies could be purchased by the City from one or more of the following potential senior water rights holders: Anderson-Cottonwood Irrigation District, Conaway Preservation Group, Reclamation District 108, and River Garden Farms Company. Water assignment amounts would not exceed 8,000 AFY from any single party.

These willing water sellers would make water available to the City by substituting local groundwater for their existing surface water supplies or by implementing water conservation measures. Similar to the Off-site Water Facility Alternatives, the undiverted surface water would flow downstream to the Freeport Project intake facility where it would be diverted for use by the City. The conveyance facilities required under this water supply option could essentially include any one of the combinations analyzed for each of the Off-site Water Facility Alternatives in the "B", or "Water" sections of Chapter 3.

Water Supply Certainty

The water supplies obtained under Option 2 would likely consist of CVP Water from other willing sellers within the Sacramento River Basin. These supplies would have a similar level of moderate to high certainty to that of the Off-site Water Facility Alternatives.

Aesthetics

The description of the affected environment for Zone 4 of the "Water" Study Area as provided in Section 3B.1, "Aesthetics – Water," would apply for this water supply option. With implementation of mitigation recommended in Section 3B.1, potentially significant impacts related to exterior finishes and nighttime security lighting would be **similar** to the Proposed Off-site Water Facility Alternative and minimized through mitigation identified in Section 3B.1, "Aesthetics – Water," to **less-than-significant** levels.

Air Quality

Air quality impacts resulting from water supply Option 2 would be similar to those identified for the Off-site Water Facility Alternatives in Section 3B.2, "Air Quality – Water." Even with the implementation of mitigation similar to that described for the Off-site Water Facility Alternatives in the "B", or "Water" sections of Chapter 3, air quality impacts during construction would **significant**; **similar** to the Proposed off-site Water Facility Alternative.

Operational impacts resulting from this water supply option would be **less than significant**; **similar** to the Proposed Off-site Water Facility Alternative.

Biological Resources

The conveyance facilities for this water supply option follow a similar alignment to one of the Off-site Water Facility Alternatives described in Chapter 2, "Alternatives". Habitats, wetlands, and potentially occurring special status species identified for the Proposed Off-site Water Facility Alternative could also be expected to occur in close proximity to the conveyance alignment for Water Supply Option 2. Water supply option could also result in direct impacts to vernal pool habitats through incidental fill during construction. A loss or "take" of vernal pool-associated species (vernal pool fairy shrimp, vernal pool tadpole shrimp, California linderiella, Boggs lake hedge-hyssop, slender orcutt grass, Sacramento orcutt grass, Crampton's tucktoria, Dwarf downingia, Ahart's dwarf juncus, and legenere) could also occur in this event. Impacts to riparian corridors, oak trees, and fisheries would be similar to the Proposed Off-site Water Facility Alternative. These impacts are considered **potentially significant** and would require mitigation contained Section 3B.3, "Biological Resources – Water," **similar** to the Proposed Off-site Water Facility Alternative.

Unlike the Proposed Off-site Water Facility Alternative, this water supply option could result in greater withdraw of groundwater from underlying aquifers to supplement the surface water supplies assigned to the City. Increased groundwater pumping could result in corresponding reductions in water levels within nearby surface waterways. Changes in water levels within affected surface water features could result in corresponding changes to vegetation along the banks. This change could modify existing habitat conditions thereby resulting in potential impacts to special status species, including the giant garter snake. This impact is considered **potentially significant** and would be **greater** than those associated with the Proposed Off-site Water Facility Alternative.

Climate Change

Sources of operational emissions associated with this water supply option would be similar to the Proposed Off-site Water Facility Alternative. As a consequence, the operational analysis under this water supply option would likely be similar to those identified for Proposed Off-site Water Facility Alternative in Section 3B.4, "Climate Change - Water." In this context, based on the significance determination for Off-site Water Facility Alternative 1A, the contributions of GHGs to regional and global emissions would be **significant and unavoidable** even after implementation of Mitigation Measures listed in Section 3B.4, "Climate Change-Water," **similar** to the Proposed Off-site Water Facility Alternative.

Cultural Resources

Impacts to cultural resources from water supply Option 2 would be **similar** to those identified for the Off-site Water Facility Alternatives and would require mitigation similar to that provided in Section 3B.5, "Cultural Resources - Water." With implementation of mitigation similar to that described for the Off-site Water Facility Alternatives in the Section 3B.5, "Cultural Resources – Water," **potentially significant** impacts to historical and archaeological resources would be reduced to a less-than-significant level.

Environmental Justice

No low-income or minority pollutions are identified along the conveyance alignment or WTP for this water supply option and therefore **no impacts** would occur; **similar** to the Proposed Off-site Water Facility Alternative.

Geology, Soils, and Paleontological Resources

Issues related to soils and geology under water supply Option 2 would similar to those identified for the Off-site Water Facility Alternatives in Section 3B.7, "Geology, Soils, and Paleontological Resources." Similar to the Off-site Water Facility Alternatives, this water supply option would not interfere with the availability of any locally or regionally mapped mineral resource area, but could be impacted by localized soil and geologic conditions. Additionally, the conveyance alignment under this option could encounter paleontological impacts at its eastern extent. With mitigation **similar** to that described for the Off-site Water Facility Alternatives in the "B", or "Water" sections of Chapter 3, **potentially significant** soils, geology, and paleontological impacts would be reduced to a less-than-significant level.

Hazards and Hazardous Materials

Public health and safety impacts resulting from water supply Option 2 would be similar to those identified for the Off-site Water Facility Alternatives in Section 3B.8, "Hazards and Hazardous Materials." With mitigation similar to that described for the Off-site Water Facility Alternatives in the "B", or "Water" sections of Chapter 3, **potentially significant** impacts to public health and safety would be reduced to a less-than-significant level.

As previously indicated for the Off-site Water Facility Alternatives, the water quality within the Sacramento River meets all standards for drinking water and, therefore, this source water supply is acceptable for consumptive use and the impact would be **less-than-significant**; similar to the Proposed Off-site Water Facility Alternative.

Hydrology, Water Quality, and Groundwater

Under water supply Option 2, surface water assigned from senior water rights holders to the City would more than likely be replaced by groundwater pumping in their respective service areas. Groundwater pumped as a result of new pumping operations could contain higher levels of salts, dissolved solids, and other constituents when compared to surface water presently used in their service areas. The substitution and use of groundwater for agricultural purposes could alter the quality of agricultural runoff or drainage.

However, substitution of groundwater for surface water in these areas is not expected to result in increased levels of boron and TDS in water applied to agricultural fields, because groundwater would be diluted with surface water. Therefore, it is not anticipated that these increased levels would substantially degrade groundwater quality or result in the exceedance of any water quality standard or discharge requirement. Therefore, the impact would be **less than significant**. This impact could be **greater** than the Proposed Off-site Water Facility Alternative as not groundwater substitution would be required.

Implementation of a water assignment and replacing surface water supplies with increased groundwater pumping within upstream senior water rights holders' service areas could result in potential groundwater drawdowns during drier water years and multiple-year drought conditions. This would be a **potentially significant** and

unavoidable impact of this water supply option that would require mitigation to minimize impacts of drawdown in adjacent wells. This impact could be **greater** than the Proposed Off-site Water Facility Alternative.

Similar to the Proposed Off-site Water Facility Alternative, impacts related to changes in flows within the Sacramento River would be expected to be **less-than-significant**. Other impacts related to increases in runoff as a result of new imperious surfaces, and construction-related water quality concerns would be **similar** to the Proposed Off-site Water Facility Alternative. These impacts would be **similar** to the Proposed Off-site Water Facility Alternative and would be **potentially significant**, but reduced to a less-than-significant level through the implementation of mitigation prescribed in Section 3B.9, "Hydrology and Water Quality – Water."

Land Use and Agricultural Resources

Land use conflicts resulting from water supply Option 2 would be similar to those identified for the Off-site Water Facility Alternatives in Section 3B.10, "Land Use and Agricultural Resources - Water." With implementation of mitigation similar to that described for the "B", or "Water" sections of Chapter 3, land use conflicts during construction, disruption of access, and other nuisance-type effects would be minimized to a **less-than-significant** level; similar to the Proposed Off-site Water Facility Alternative.

The assignment of surface water entitlements from the senior Sacramento River water-right holders for use within the Folsom SPA would generally be consistent with the Water Forum Agreement, the State Water Plan, and the City's General Plan. This would be a **less-than-significant** impact; similar to the Proposed Off-site Water Facility Alternative

Noise

Construction and operational noise impacts resulting from water supply Option 2 would be similar to those identified for Off-site Water Facility Alternatives in Section 3B.11, "Noise - Water." With the implementation of mitigation similar to that described for the Off-site Water Facility Alternatives in the "B", or "Water" sections of Chapter 3, noise impacts from construction and operation of this water supply option would be reduced to a **less-than-significant** level.

Recreation

Under Option 2, impacts to recreational resources would be **similar** to that of the Proposed Off-site Water Facility Alternative. With the implementation of mitigation from Section 3B.12, "Parks and Recreation – Water," **potentially significant** impacts to access along the FSC would be minimized to a less-than-significant level.

Traffic and Transportation

Impacts to traffic and alternative forms of transportation under water supply Option 2 would be **lesser** than those identified for the Off-site Water Facility Alternatives in Section 3B.15, "Traffic and Transportation - Water." The primary reason for this reduction in the level of impact is attributed to the location of the planned facilities under this water supply option, which coincide with planned roadway facilities that have yet to be constructed. Mitigation similar to that described for the Off-site Water Facility Alternatives in the "B", or "Water" sections of Chapter 3 would still be required to minimize impacts to traffic circulation along Prairie City Road to a **less-than-significant** level.

Utilities and Service Systems

Impacts to public services and utilities under water supply Option 2 would be **similar** to those identified for the Proposed Off-site Water Facility Alternative in Section 3B.16, "Utilities and Service Systems - Water." With implementation of mitigation similar to that described in Section 3.16, "Utilities and Service Systems – Water," **potentially significant** impacts to public services and utilities would be reduced to a less-than-significant level.

Option 2 Conclusion

If the City were to acquire water supplies from one or more CVP settlement contractors, the impacts would be very similar to the off-site water Facility Alternatives because the City operations and facilities would be very similar. One impact that might be greater with this option would be impacts to groundwater in the transferor's area. Because a transferor might replace the supply it transferred with groundwater pumping.

Water Supply Option 3 – Conservation of Existing Entitlements and Water System Retrofit

Currently, the City implements a variety of water conservation practices. These are consistent with the best management practices (BMPs) identified in the California Urban Water Conservation Council's (CUWCC) Memorandum of Understanding and include, but are not limited to, tiered pricing, water meters, leak audits, and public education. These programs are still in the process of being fully implemented (e.g. water metering, etc.). The City's Water Management Program offers numerous programs directed towards conserving water uses for commercial, residential, and landscaping purposes.

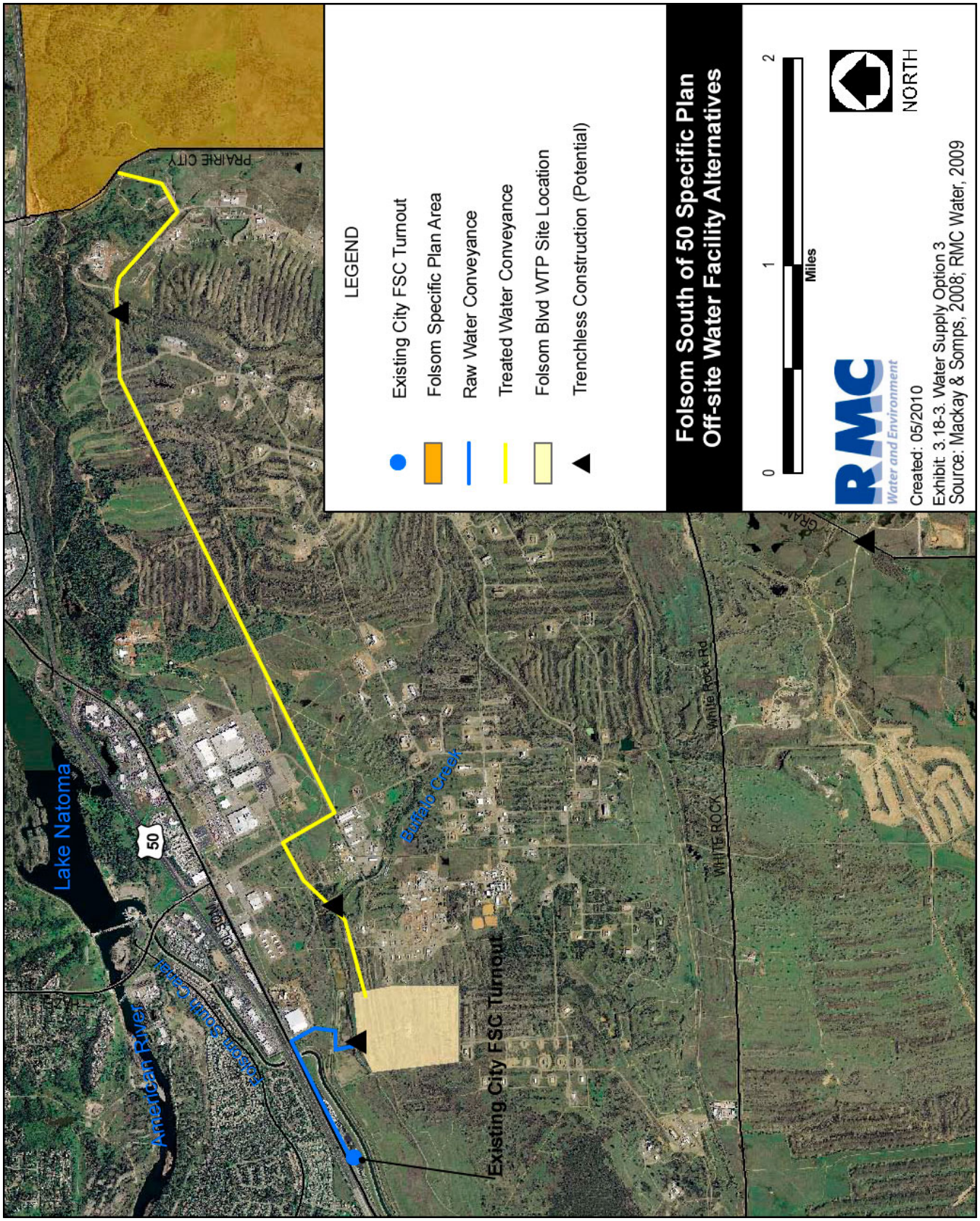
The City currently has rights to 34,000 AFY of surface water for diversion from the American River at Folsom Reservoir or the FSC. These supplies are based on different water rights and contracts as described in the WSA and include:

- 22,000 afy pursuant to a Central Valley Project (CVP) settlement contract, which relates to a pre-1914 appropriative water right, authorizing diversions from Folsom Reservoir or the Folsom South Canal;
- 5,000 afy pursuant to a CVP settlement contract, which relates to a pre-1914 appropriative water right for diversion from Folsom Reservoir or the Folsom South Canal; and
- 7,000 afy from a CVP subcontract with SCWA, which derives from a CVP water service contract held by SCWA, which subcontract entitles the City to divertfrom Folsom Reservoir.

The overall intent of Water Supply Option 3 would be to retrofit the City's existing water infrastructure to reduce these existing losses and use the supplies conserved within the Folsom SPA. The actual repair/replacement requirements are unknown at this time; however, the City expects that much of this work would occur within existing easements and/or roadway ROW. The applicant(s) of the Folsom SPA would fund these improvements up to an agreed upon limit.

Beyond the implementation of a comprehensive retrofit program, the City anticipates that additional supplies may be gained through implementation of possible State conservation laws. In 2009, the California Legislature enacted new law designed to implement the Governor's preference to achieve 20% statewide urban water conservation by 2020. Under new water code section 106008.20, the City will be required to implement conservation measures to reduce its per capita daily water consumption by 2020. The new legislation recognizes that total water use might stay stable, or increase, due to population increases. (New Water Code § 10608.8 (C).) A 20% reduction in the City's demand through a comprehensive water conservation program could net up to 6,800 AFY during normal and wet years when the City receives its full allocation. During dry years and subject to conditions that have yet been satisfied, the City could reduce its diversions pursuant to the Water Forum Agreement. In addition, the City's 7,000 afy CVP subcontract would be subject to Reclamation's development of a municipal & industrial water shortage policy, which is under development. The effect of supply reductions on the yield of the City's possible conservation measures is not known as this time.

Facilities required as part of Option 3 would be similar to those described for Option 2. Conserved water initially would be retained in storage in Folsom Reservoir. Conserved water would be released from Folsom Reservoir and flow downstream to Lake Natoma where it would be diverted and then re-diverted at the City's existing turnout on the FSC; thus no net increase in diversion of stream flows would occur. Surface water would then be conveyed to the Folsom SPA through raw and treated water facilities illustrated in Exhibit 3A.18-3. Option 3 would involve



Water Supply Option 3 – Conservation of Existing Entitlements and Water System Retrofit

Exhibit 3A.18-3

construction of a new 30-inch, raw water connection pipeline from the FSC to a new WTP located south of Folsom Boulevard and east of Sunrise Boulevard (see Exhibit 3A.18-3). The raw water pump station and WTP would be constructed according to the same parameters as described for the Off-site Water Facility Alternatives in Chapter 2, "Alternatives". The 30-inch, treated-water pipeline would follow the same alignment as the proposed Off-Site Water Facility Alternative 4 along the planned Easton Valley Parkway east to the Folsom SPA.

Water Supply Certainty

This water supply option is not the primary water supply because, among other reasons, the City has not determined the firm yield of conservation measures that it could implement and, therefore, is unable to provide confirmation as to whether the net supplies would be sufficient to accommodate the projected demand of 5,600 AFY.

Impact Analysis

Aesthetics

The description of the affected environment for Zone 4 of the "Water" Study Area as provided in Section 3B.1, "Aesthetics – Water," would apply for this water supply option. With implementation of mitigation recommended in Section 3B.1, potentially significant impacts related to exterior finishes and nighttime security lighting would be **similar** to the Off-site Water Facility Alternative 4 and minimized through mitigation identified in Section 3B.1, "Aesthetics – Water," to **less-than-significant** levels.

Air Quality

Air quality impacts resulting from water supply Option 3 would be similar to those identified for Off-site Water Facility Alternative 4 and 4A in Section 3B.2, "Air Quality – Water" and Section 3B.4, "Climate Change - Water." This option would reduce the length of pipeline construction and the associated emissions of criteria air pollutants. However, due to the overlap in the construction of the Off-site Water Facility components, even with the implementation of mitigation similar to that described for Off-site Water Facility Alternative 4 and 4A in the "B", or "Water" sections of Chapter 3, air quality impacts during construction would be **significant and unavoidable**; **similar** to the Proposed Off-Site Water Facility Alternative.

Operational impacts resulting from this option would be **less than significant**, due to impacts **similar** to the Proposed Off-Site Water Facility Alternative.

Biological Resources

The conveyance facilities for this water supply option follow a similar alignment to that of Off-site Water Facility Alternative 4 and 4A following the raw water pipeline from the FSC turnout. Habitats and potentially occurring special status species identified for Off-Site Water Facility Alternatives 4 and 4A could also be expected to occur in close proximity to the conveyance alignment for Option 3. The one major exception is that this water supply option would avoid potential vernal pool impacts along Eagles Nest Road. These impacts are considered **potentially significant** and would require mitigation contained Section 3B.3, "Biological Resources – Water," **similar** to the Proposed Off-site Water Facility Alternative.

Under this option, impact to biological resources in the lower American River would be **less-than-significant** because the City's diversions from the American River would not change and the proposed water supply would be generated by reductions in the City's use of the water that it currently diverts. These changes although not significant would be **greater** than those associated with the Off-site Water Facility Alternatives 4 and 4A by virtue that no changes to flows within the lower American River would occur under the Off-site Water Facility Alternatives. Conversely, impacts to flows within the Sacramento River under this water supply option would be **lesser** when compared to the Off-site Water Facility Alternatives.

Climate Change

Sources of operational emissions associated with this water supply option would be similar to the Off-site Water Facility Alternative 4. As a consequence, the operational analysis under this water supply option would likely be similar to those identified for Off-site Water Facility Alternative 4 in Section 3B.4, "Climate Change - Water." In this context, based on the significance determination for Off-site Water Facility Alternative 1A, the contributions of GHGs to regional and global emissions would be **significant and unavoidable** even after implementation of Mitigation Measures listed in Section 3B.4, "Climate Change-Water," **similar** to the Proposed Off-site Water Facility Alternative.

Cultural Resources

Impacts to cultural resources from water supply Option 3 would be similar to those identified for Off-site Water Facility Alternative 4 and 4A in Section 3B.5, "Cultural Resources - Water." With implementation of mitigation **similar** to that described for Off-site Water Facility Alternative 4 and 4A in the Cultural Resources – Water,", **potentially significant** impacts to historical and archaeological resources would be reduced to a less-than-significant level.

Environmental Justice

No low-income or minority pollutions are identified along the conveyance alignment or WTP for this water supply option and therefore **no impacts** would occur; **similar** to the Proposed Off-site Water Facility Alternative.

Geology, Soils, and Paleontological Resources

Issues related to soils and geology under water supply Option 3 would similar to those identified for Off-site Water Facility Alternative 4 and 4A in Section 3B.7, "Geology, Soils and Paleontological Resources - Water." Similar to the Off-site Water Facility Alternatives, this water supply option would not interfere with the availability of any locally or regionally mapped mineral resource area, but could be impacted by localized soil and geologic conditions. Additionally, the conveyance alignment under this option could encounter paleontological impacts at its eastern extent. With mitigation **similar** to that described for the Off-site Water Facility Alternatives in the Section 3B.7, "Geology, Soils and Paleontological Resources - Water," **potentially significant** soils, geology, and paleontological impacts would be reduced to a less-than-significant level.

Hazards and Hazardous Materials

Public health and safety impacts resulting from Option 3 would be similar to those identified for Off-site Water Facility Alternative 4 and 4A in Section 3B.8, "Hazards and Hazardous Materials - Water." With mitigation **similar** to that described for Off-site Water Facility Alternative 4 and 4A in the Section 3B.8, "Hazards and Hazardous Materials – Water," **potentially significant** impacts to public health and safety would be reduced to a less-than-significant level.

The water quality within the Lower American River meets all standards for drinking water and, therefore, this source water supply is suitable for consumptive use, and because this option would include construction of a WTP, the impact related to potable water quality would be less-than-significant and similar to the Proposed Off-site Water Facility Alternative.

Hydrology, Water Quality, and Groundwater

Water Supply Option 3 would result in no increase in the City's total entitlement to surface water from the American River. In addition, this option could entail minor benefits through the addition of flows to a segment of the American River between Folsom Reservoir and the FSC. Under existing conditions, the City's supplies are

diverted from an intake located at Folsom Reservoir. The environmental impacts of the City's existing diversions on American River were assessed in three previous EIRs:

- Environmental Impact Statement (EIS)/EIR for CVP Water Supply Contracts under Public Law 101-514 (Section 206) ("Fazio Water"; U.S. Bureau of Reclamation [USBR] et al. 1997; SCH# 1993042023)— available at Sacramento County Water Agency, 827 7th Street, Room 301, Sacramento, CA 95814.

- EIR for Water Forum Proposal (EDAW and SWRI 1999; SCH# 95082041)— available at Sacramento County Department of Environmental Review and Assessment (DERA) office, 827 7th Street, Room 220, Sacramento, CA 95814.

- EIR for City's Natoma Pipeline Replacement and Folsom Water Treatment Plant Expansion Project (City of Folsom 1998; SCH# 97042005)—available at Folsom Public Works Department, 50 Natomas Street, Folsom, CA 95630.

Impacts to hydrology and water quality as a result of constructing a new WTP/pump station, pipelines, and other facilities would be similar to those identified for the Off-site Water Facility Alternative 4 and 4A. As a result, the implementation of mitigation required in Section 3B.9, "hydrology and Water Quality – Water," would be required to minimize potential construction and operational effects to local water quality and local drainage.

Land Use and Agricultural Resources

The conservation of existing surface water entitlements from the American River would generally be consistent with the Water Forum Agreement, the State's Water Plan, and the City's General Plan. Although the use of the City's existing water supplies for new growth south of U.S. 50 is generally discouraged by Section 7.04 of the City's Charter (or Measure W), there are several important distinctions to consider. First, under this water supply option, the SPA applicants would fund the retrofit improvements within the City's existing water service area and, therefore, these costs of these improvements would not be funded by existing rate payers. Secondly, the net water supplies gained under this option would come from conservation either through improvements within the City's water distribution system or as mandated by new state laws. As a result, existing residences would not be required to reduce water use or incur costs specifically to provide water for the SPA. Based on these considerations, this water supply option would not conflict with existing plans and policies adopted for the purposes of mitigating a significant environmental effect and the impact is considered **less-than-significant**. These impacts would be **lesser** when compared to the Proposed Off-site Water Facility Alternative.

This alternative would avoid impacts related to the cancellation of an existing Williamson Act Contract and would result in **no impact**; hence, impacts under this options would be **lesser** than the Proposed Off-site Water Facility Alternative.

Noise

Construction and operational noise impacts resulting from Option 3 would be similar to those identified for Off-site Water Facility Alternative 4 and 4A in Section 3B.11, "Noise - Water." With the implementation of mitigation **similar** to that described for Off-site Water Facility Alternative 4 and 4A in Section 3B.11, "Noise - Water," **potentially significant** noise impacts from construction and operation of this option would be reduced to a less-than-significant level.

Recreation

Under Option 3, minor additions to flows within the Lower American River, between Folsom Reservoir and the FSC, could be anticipated thereby benefiting existing rafting and boating opportunities. Compared to existing conditions, no change in surface water conditions below Nimbus Dam would be expected. These impacts would be **less-than-significant** and **similar** to the Proposed Off-site Water Facility Alternative.

Traffic and Transportation

Impacts to traffic and alternative forms of transportation under Option 3 would be less than those identified for Off-site Water Facility Alternative 4 and 4A in Section 3B.15, "Traffic and Transportation - Water." The primary reason for this reduction in the level of impact is attributed to the location of the planned facilities under this option, which coincide with planned roadway facilities that have yet to be constructed. Mitigation similar to that described for Off-site Water Facility Alternative 4 and 4A in the "B", or "Water" sections of Chapter 3 would still be required to minimize impacts to traffic circulation along Prairie City Road to a less-than-significant level.

Utilities and Service Systems

Impacts to public services and utilities under Option 3 would be similar to those identified for Off-site Water Facility Alternative 4 and 4A in Section 3B.16, "Utilities and Service Systems - Water." With implementation of mitigation **similar** to that described for Off-site Water Facility Alternative 4 and 4A in Section 3.16, "Utilities and Service Systems – Water," **potentially significant** impacts to public services and utilities would be reduced to a less-than-significant level.

Option 3 Conclusion

In light of the fact that the City is currently developing its strategy for complying with 2009 water conservation legislation, the City currently cannot estimate the yield of conservation measures or identify specifically what actions it would need to take to implement those measures. The City therefore has not determined how Measure W would apply to such a program or the extent to which such a program could satisfy water demands in the Folsom SPA.

Table 3A.18-15 provides a summary comparison of the environmental impacts for each of the Water Supply Options in relation to the Proposed Off-site Water Facility Alternative.

Table 3A.18-15
Summary Comparison of the Water Supply Options to the Proposed Off-site Water Facility Alternative

Impact Summary	CEQA Water Supply Options		
	Water Supply Option 1	*Water Supply Option 2*	*Water Supply Option 3*
3B.1 Aesthetics – Water			
Impact 3B.1-1. Substantial Adverse Effect on a Scenic Vista. Implementation of the Off-Site Water Facility Alternatives would not result in the degradation of the visual quality of a scenic vista.	S	S	S
Impact 3B.1-2. Substantial Degradation of Existing Visual Character or Quality of the "Water" Study Area. Implementation of the Off-Site Water Facility Alternatives could substantially degrade the existing visual character or quality of the "Water" Study Area and its surroundings.	S	S	S
Impact 3B.1-3. Creation of a New Source of Substantial Light or Glare that would Adversely Affect Day or Nighttime Views in the "Water" Study Area. Implementation of the Off-Site Water Facility Alternatives would create new sources of substantial light or glare, which could adversely affect day or nighttime views in the "Water" Study Area.	S	S	S

Table 3A.18-15
Summary Comparison of the Water Supply Options to the Proposed Off-site Water Facility Alternative

Impact Summary	CEQA Water Supply Options		
	Water Supply Option 1	*Water Supply Option 2*	*Water Supply Option 3*
3B.2 Air Quality – Water			
Impact 3B.2-1. Generation of Construction Emissions of NO_X and PM_{10}. Construction of the Off-Site Water Facility Alternatives would produce construction-generated emissions of NO_X, an ozone precursor, and fugitive PM_{10} dust would exceed SMAQMD-recommended thresholds and would substantially contribute to emissions concentrations that exceed the NAAQS and CAAQS. Thus, project-generated, construction-related emissions of criteria air pollutants and precursors could violate or contribute substantially to an existing or projected air quality violation and/or expose sensitive receptors to substantial pollutant concentrations.	S	S	S
Impact 3B.2-2. Generation of Long-Term Operational (Regional) Emissions of ROG, and NO_X. Operational area- and mobile-source emissions from implementation of the Off-site Water Facility Alternatives would not exceed the SMAQMD-recommended threshold of 65 lb/day for ROG and NO_X.	S	S	S
Impact 3B.2-3. Exposure of Sensitive Receptors to Short- and Long-Term Emissions of Toxic Air Contaminants. Implementation of the Off-Site Water Facility Alternatives could expose sensitive receptors to short- and long-term emissions of TACs from on-site stationary sources.	S	S	S
3B.3 Biological Resources – Water			
Impact 3B.3-1. Loss and Degradation of Waters of the U.S., including Wetlands, and Waters of the State. Construction of the Off-Site Water Facility Alternatives has the potential to result in substantial adverse effects to Federally and state-protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to vernal pools and seasonal wetlands) through direct fill or excavation, hydrological interruption, or other indirect impacts. Wetlands, Waters of the State, and other waters of the U.S. that would be affected by implementation of the Off-site Water Facility Alternatives include seeps, vernal pools, seasonal wetlands and seasonal wetland swales, drainage channels, ditches, and ponds.	S	S	S
Impact 3B.3-2. Loss and Degradation of Habitat for Special-Status Wildlife Species and Potential Direct Take of Individuals. The Off-Site Water Facility Alternatives have the potential to result in a substantial adverse effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special-status by DFG, NMFS, and USFWS. Impacts could include loss and degradation of habitat for several special-status wildlife species or take of listed species, including vernal pool invertebrates, valley elderberry longhorn beetle, and Swainson's hawk.	S	S	S
Impact 3B.3-3. Potential Loss or Degradation of Special-Status Plant Populations and Habitat. Implementation of the Off-site Water Facility Alternatives could result in direct removal of special-status plants, if they are present, through loss of suitable habitat or degradation of suitable habitat due to site alteration.	S	S	S

Table 3A.18-15
Summary Comparison of the Water Supply Options to the Proposed Off-site Water Facility Alternative

Impact Summary	CEQA Water Supply Options		
	Water Supply Option 1	*Water Supply Option 2*	*Water Supply Option 3*
Impact 3B.3-4. Loss of Sensitive Natural Communities (Not Already Covered under Other Impacts). Construction and operation of the Off-site Water Facility Alternatives has the potential to have a substantial adverse effect on local riparian and woodland habitats. These are natural communities considered sensitive by state and local resource agencies and require consideration under CEQA.	S	S	S
Impact 3b.3-5. Loss Of Individual Oak Trees. Implementation of the Off-Site Water Facility Alternatives could result in the removal of oak woodland and individual oak trees meeting the criteria for protection under Folsom Municipal Code and the Sacramento County Tree Ordinance.	S	S	S
Impact 3B.5-6. Potential Interference with Wildlife or Fisheries Movement. Construction and operation of the Off-Site Water Facility Alternatives has the potential to interfere substantially with the movement of native resident or migratory fish or within established native resident or migratory wildlife corridors.	S	S	S
Impact 3B.5-7. Potential Conflict with Habitat Conservation Plans. Construction of the Off-Site Water Facilities has the potential to conflict with the provisions of an adopted Habitat Conservation Plan or Natural Community Conservation Plan.	S	S	S
3B.4 Climate Change - Water			
Impact 3B.4-1. Generation of Short- and Long-term Increases in Greenhouse Gases. Construction and operation of the Offsite Water Facility Alternatives would result in a net increase in greenhouse gas emissions, which would contribute considerably to cumulative GHG emissions.	S	S	S
Impact 3B.4-2. Effects of Climate Change on the Off-site Water Supply Facilities. Global climate change could result in effects on water quality or water supplies proposed as part of the Off-site Water Facility Alternatives.	S	S	S
3B.5 Cultural Resources – Water			
Impact 3B.5-1. Possible Destruction of or Damage to Known Prehistoric and Historic-Era Cultural Resources from Ground-Disturbance or Other Construction-Related Activities. Construction activities associated with the Off-site Water Facility Alternatives could result in the destruction of or damage to known prehistoric and historic-era cultural resources that are potentially eligible for or listed on the CRHR or NRHP.	S	S	S
Impact 3B.5-2. Possible Destruction of or Damage to Previously Undiscovered Cultural Resources from Ground-Disturbance or Other Construction-Related Activities. Construction activities during project implementation could result in the destruction of or damage to "significant" (under CEQA) undiscovered cultural resources.	S	S	S
Impact 3B.5-3. Possible Destruction of or Damage to Interred Human Remains during Construction. Ground-disturbing activities could inadvertently disinter and/or destroy buried human skeletal remains	S	S	S

Table 3A.18-15
Summary Comparison of the Water Supply Options to the Proposed Off-site Water Facility Alternative

Impact Summary	CEQA Water Supply Options		
	Water Supply Option 1	*Water Supply Option 2*	*Water Supply Option 3*
3B.6 Environmental Justice – Water			
Impact 3B.6-1. Potential Effects on Minority Populations. Implementation of the Off-site Water Facility Alternatives would not create a disproportionate placement of adverse environmental impacts on minority communities.	S	S	S
Impact 3A.6-2. Potential Effects on Low-Income Populations. Project implementation would not create a disproportionate placement of adverse environmental impacts on low-income populations.	S	S	S
3B.7 Geology, Soils, and Paleontological Resources – Water			
Impact 3B.7-1. Possible Risks to People and Structures Caused by Strong Seismic Ground Shaking. Zone 4 of the "Water" Study Area is located in an area of generally low seismic activity; however, structures constructed as part of the Off-site Water Facility Alternatives could be subject to seismic ground shaking from an earthquake along active faults in the Sierra Nevada.	S	S	S
Impact 3B.7-2. Construction-Related Erosion. Construction activities during implementation of the Off-site Water Facility Alternatives would involve grading and movement of earth in soils subject to wind and water erosion hazard.	S	S	S
Impact 3B.7-3. Unstable Geologic Conditions. The Off-Site Water Facility Alternatives could be located on a geologic unit or soil that is unstable, or that could become unstable as a result of the Off-Site Water Facilities.	S	S	S
Impact 3B.7-4. Exposure to Potential Hazards from Problematic Soils. The Off-Site Water Facility Alternatives could encounter expansive or corrosive soils thereby subjecting related structures to potential risk of failure.	S	S	S
Impact 3B.7-5. Possible Damage of or Destruction to of Previously Unknown Unique Paleontological Resources during Construction-Related Activities. Construction of the Off-Site Water Facility Alternatives could directly or indirectly destroy a unique paleontological resource or site.	S	S	S
3B.8 Hazards and Hazardous Materials – Water			
Impact 3B.8-1. Accidental Spill from Routine Transport, Use, or Disposal of Hazardous Materials. Accidental spills of hazardous materials could result during routine transport, use, or disposal activities as part of the implementation of the Off-Site Water Facility Alternatives.	S	S	S
Impact 3B.8-2. Create Accident Conditions Involving Potential Release of Hazardous Materials. Construction and operation of the Off-Site Water Facilities could create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment.	S	S	S
Impact 3B.8-3. Introduction of Drinking Water Contaminants. Operation of the Off-Site Water Facility Alternatives would not create a significant public health risk through the introduction of contaminants into a drinking water supply at concentrations with known adverse health effects.	G	S	S

Table 3A.18-15
Summary Comparison of the Water Supply Options to the Proposed Off-site Water Facility Alternative

Impact Summary	CEQA Water Supply Options		
	Water Supply Option 1	*Water Supply Option 2*	*Water Supply Option 3*
Impact 3B.8-4. Use of Hazardous Materials within One-Quarter Mile of Schools. Operation of the Off-Site Water Facilities could emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.	S	S	S
Impact 3B.8-5. Create a Significant Hazard to the Public or the Environment. Construction of the Off-Site Water Facilities could encounter one or more sites listed as containing hazardous materials or wastes and, as a result, could create a significant hazard to the public or the environment.	S	S	S
Impact 3B.8-6. Impair or Interfere with an Adopted Emergency Response Plans or Emergency Evacuation Plans. Implementation of the Off-Site Water Facilities would impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	S	S	S
Impact 3B.8-7. Exposure to Wildland Fire Hazards. Implementation of the Off-Site Water Facilities could expose people or structures to a significant risk of loss, injury or death involving wildland fires.	S	S	S
3B.9 Hydrology and Water Quality – Water			
Impact 3B.9-1. Potential Temporary, Short-Term Construction-Related Drainage and Water Quality Effects. Construction of the Off-Site Water Facilities could generate discharges to surface water resources that could potentially violate water quality standards or waste discharge requirements.	S	S	S
Impact 3B.9-2. Exceedance of Surface Water Quality Standards during Operation. The operation of the Off-Site Water Facilities could result in changes to the quality of surface water resources that could potentially violate water quality standards or waste discharge requests.	L	S	S
Impact 3B.9-3. Alteration of Drainage Patterns Resulting in Off-Site Flooding and/or Erosion. The Off-Site Water Facilities could result in the alteration of existing drainage patterns thereby increasing the rate or amount of surface runoff in a manner that could result in substantial flooding and/or erosion or siltation on- or off-site.	S	S	S
Impact 3B.9-4. Changes to Flow within the Sacramento River. The Off-Site Water Facilities could result in adverse effects to existing flows within the Sacramento River.	L	S	L
Impact 3B.9-5. Exceed Drainage Capacity and Contribute Sources Polluted Runoff. The Off-Site Water Facilities could create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.	S	S	S
Impact 3B.9-6. Impede or Redirect Flood Flows. The Off-Site Water Facilities could place structures within a 100-year flood hazard area, which would impede or redirect flood flows	S	S	S
Impact 3B.9-7. Inundation from Flooding or Mudflows. The Offsite Water Facility Alternatives would not expose people or structures to a significant risk of loss, injury or death involving inundation by flooding, including flooding as a result of the failure of a levee or dam, seiche, or tsunami or inundation by mudflows.	S	S	S

Table 3A.18-15
Summary Comparison of the Water Supply Options to the Proposed Off-site Water Facility Alternative

Impact Summary	CEQA Water Supply Options		
	Water Supply Option 1	*Water Supply Option 2*	*Water Supply Option 3*
3B.10 Land Use and Agricultural Resources - Water			
Impact 3B.10-1. Conflict with Applicable Agency Plans, Policies, or Regulations. Implementation of the Off-site Water Facility Alternatives could conflict with an applicable land use plan, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect.	S	S	L
Impact 3B.10-2. Conversion of Important Farmland to Nonagricultural Uses. Implementation of the Off-site Water Facility Alternatives could result in the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural uses.	S	S	S
Impact 3B.10-3. Cancellation of Existing On-Site Williamson Act Contracts. Construction of the Off-site Water Facility Alternatives could conflict with lands under Williamson Act contracts; thereby potentially resulting in cancellation of those contracts.	S	S	L
Impact 3B.10-4: Potential Temporary Disruptions to Existing Agricultural Operations. Implementation of the Off-site Water Facilities could potentially affect existing agricultural operations and result in a loss in agricultural productivity.	S	S	S
3B.11 Noise – Water			
Impact 3B.11-1. Temporary, Short-Term Exposure of Sensitive Receptors to Increased Equipment Noise from Project Construction. The Off-Site Water Facility Alternatives could expose persons to or generate noise levels in excess of applicable City and County standards.	S	S	S
Impact 3B.11-2 Exposure to and/or Generation of Groundborne Vibration. The Off-Site Water Facilities could expose persons to or generate excessive groundborne vibration or groundborne noise levels.	S	S	S
Impact 3B.11-3. Permanent Increase in Ambient Noise Levels. The Off-Site Water Facility Alternatives could create a substantial permanent increase in ambient noise levels in the vicinity of new pumping facilities.	S	S	S
3B.12 Parks and Recreation – Water			
Impact 3B.12-1. Temporary Disruptions to Existing Recreational Facilities and Opportunities. Implementation of the Off-Site Water Facility Alternatives could temporarily disrupt trail, golf course, or park facility access.	L	S	S
Impact 3B.12-2. Effects to Water-Oriented Recreational Facilities and Opportunities. Implementation of the Off-Site Water Facility Alternatives would not cause an adverse change in river flows or lake elevations that could result in substantial changes to existing recreational opportunities.	S	S	S
3B.15 Traffic and Transportation – Water			
Impact 3B.15-1. Temporary and Short-Term Reduction in Roadway Capacity during Construction. Off-Site Water Facility Alternatives construction could result in temporary reductions in roadway capacities, which could be substantial in relation to existing volume-to-capacity ratios on local roadways and congestion at intersections.	S	S	L

Table 3A.18-15
Summary Comparison of the Water Supply Options to the Proposed Off-site Water Facility Alternative

Impact Summary	CEQA Water Supply Options		
	Water Supply Option 1	*Water Supply Option 2*	*Water Supply Option 3*
Impact 3B.15-2. Exceedance of Established Level of Service Standards for Local Roadways. The implementation of Off-Site Water Facility Alternatives could cause traffic conditions to exceed, either individually or cumulatively, a level of service standard established by the County congestion management agency for designated roads or highways.	S	S	S
Impact 3B.15-3. Increased Traffic Hazards on Local Roadways. Implementation of the Off-Site Water Facility Alternatives could substantially increase hazards on local roadways due to the presence of incompatible uses, such as construction equipment.	S	S	S
Impact 3B.15-4 Possible Inadequate Emergency Vehicle Access. Construction of the Off-Site Water Facilities could result in disruptions to emergency access.	S	S	S
3B.16 Utilities and Service Systems – Water			
Impact 3B.16-1. Generation of Wastewater. The operation of the Off-Site Water Facility Alternatives would generate wastewater that would require off-site conveyance and treatment.	S	S	S
Impact 3B.16-2. Changes in Operation of the Central Valley Project Water Supply Entitlement. The operation of the Off-Site Water Facility Alternatives would not infringe upon the water rights of other legal users of water.	L	S	S
Impact 3B.16-3. Potential Disruption to Existing Utilities and Infrastructure. Construction of the Off-Site Water Facilities has the potential to disrupt existing public and private utilities and infrastructure.	S	S	S
Impact 3B.16-4 Increased Generation of Solid Waste. Construction and operation of the Off-Site Water Facilities would generate solid waste, which could impact the City's ability to comply with solid waste diversion requirements of the state.	S	S	S
Impact 3B.16-5. Potential Inefficient Energy Consumption. Construction and operation of the Off-Site Water Facilities could result in the inefficient consumption of energy thereby adversely affecting current and future energy conservation efforts.	S	S	S
3B.17. Groundwater Resources			
B3.3-1 - The Water Project could generate discharges to and/or contribute to the depletion of groundwater resources thereby potentially directly and indirectly violating water quality standards or waste discharge requests.	G	G	L
B3.3-2 - The Water Project could substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater levels.	G	G	L
B3.3-3 - Groundwater pumping associated with Water Project operations could alter existing surface hydrology.	G	S	S

Table 3A.18-15 Summary Comparison of the Water Supply Options to the Proposed Off-site Water Facility Alternative			
Impact Summary	CEQA Water Supply Options		
	Water Supply Option 1	*Water Supply Option 2*	*Water Supply Option 3*
Notes: L – Lesser Impact when compared to the Proposed Off-site Water Facility Alternative S – Similar Impact when compared to the Proposed Off-site Water Facility Alternative G – Greater Impact when compared to the Proposed Off-site Water Facility Alternative Source: Table prepared by RMC in 2010.			

3A.18.6 WATER SUPPLY CURTAILMENT ANALYSIS

In its *Vineyard* decision, the California Supreme Court indicated that, in some circumstances, a CEQA lead agency should evaluate the environmental impacts that could occur if a land project's development were to be curtailed because not all of the projected water supplies ultimately were implemented. (*Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 434, 444, 447.) For the reasons described below, however, the City cannot conduct such an analysis because it would be speculative to attempt to identify a reduced level to which this project's projected water supplies would be curtailed.

As shown in Tables 3A.18-6, 3A.18-8, 3A.18-10, 3A.18-12 and 3A.18-14, the water supply proposed as part of the Off-Site Water Facility Alternatives has a demonstrated reliability capable of meeting all of the potable and non-potable water demands resulting from implementation of any of the "Land" alternatives considered. That water supply consists of one source – an assignment of a portion of NCMWC's CVP settlement-contract supply – that would be implemented at one time. Accordingly, unlike the water supplies at issue in *Vineyard*, this project is not subject to the risk that initial phases of the proposed land development could be implemented based on a short-term water supply, but then full development of the project could be curtailed if a proposed long-term water supply cannot be implemented. (See *Vineyard*, 40 Cal.4th at pp. 422-424, 436, 438, 444, 447.)

This EIR/EIS has thoroughly investigated the possible environmental impacts of the City taking an assignment of a portion of the NCMWC supply and using it as the water supply for the SPA's development. (See Sections 3B.2 "Air Quality – Water," 3B.3 "Biological Resources – Water," 3B.4 "Climate Change – Water," 3B.8 "Hazards and Hazardous Materials – Water," 3B.9 "Hydrology and Water Quality – Water," 3B.10 "Land Use and Agriculture – Water," 3B.11 "Noise – Water," 3B.12 "Recreation – Water," 3B.16 "Utilities – Water," and 3B.17 "Groundwater – Water," of Chapter 3, Environmental Analysis, and Sections 4.1 "Cumulative Impacts, 4.2 "Growth Inducing Impacts," and 4.5 "Significant and Unavoidable Adverse Impacts" of Chapter 4, Other Statutory Requirements) It is possible, however, that, as a result of future regulatory actions, climate change, natural disasters or other events, the amount of assigned NCMWC water that could be delivered to the City could be reduced below the proposed 5,600 acre-feet per year minimum supply. At this time, however, the City has no information to indicate when any such reduction might occur, how large the reduction might be or how such a reduction might relate to the proposed development of the SPA. Accordingly, it would be speculative for the City to attempt to identify the environmental impacts that could result from such a water-supply reduction and the resulting curtailment of SPA development. The CEQA Guidelines indicate that a lead agency should terminate its discussion of an impact if the impact is too speculative for evaluation. (15 CCR § 15145.) Accordingly, the City has not attempted to analyze what environmental impacts might occur if SPA development were curtailed as a result of a reduction in the project water supply.

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4 OTHER STATUTORY REQUIREMENTS

4.1 CUMULATIVE IMPACTS

4.1.1 INTRODUCTION

This EIR/EIS provides an analysis of overall cumulative impacts of the Folsom South of U.S. 50 Specific Plan project (which includes both land use changes ["Land" components] and water supply ["Water" components]) taken together with other past, present, and probable future projects producing related impacts, as required by the State CEQA Guidelines (14 California Code of Regulations [CCR] Section 15130) and "reasonably foreseeable" future projects under NEPA implementing regulations (40 Code of Federal Regulations [CFR] 1508.7). The purpose of this analysis is twofold: first, to determine whether the overall long-term impacts of all such projects would be cumulatively significant and second, to determine whether the Folsom South of Highway 50 Specific Plan project itself would cause a "cumulatively considerable" (and thus significant) *incremental* contribution to any such cumulatively significant impacts. (See the State CEQA Guidelines [CCR Sections 15064(h), 15065(c), 15130(a), 15130(b), and 15355(b)] In other words, the required analysis first creates a broad context in which to assess the project's incremental contribution to anticipated cumulative impacts, viewed on a geographic scale well beyond the project site itself. The analysis then determines whether the project's incremental contribution to any significant cumulative impacts from all projects is itself significant (i.e., "cumulatively considerable" in CEQA parlance).

Cumulative impacts are defined in the State CEQA Guidelines (CCR Section 15355) as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." A cumulative impact occurs from "the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time" (CCR Section 15355[b]).

Consistent with the State CEQA Guidelines (CCR Section 15130[a]), the discussion of cumulative impacts in this EIR/EIS focuses on significant and potentially significant cumulative impacts. The State CEQA Guidelines (CCR Section 15130[b]) state that:

> The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact.

The Council on Environmental Quality (CEQ) regulations implementing provisions of NEPA define cumulative impacts as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or nonFederal) or person undertakes such other actions" (40 CFR 1508.7). Cumulative effects can result from individually minor, but collectively significant, actions over time (40 CFR 1508.8). They are caused by the incremental increase in total environmental effects when the evaluated project is added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can thus arise from causes that are totally unrelated to the project being evaluated, and the analysis of cumulative impacts looks at the life cycle of the effects, not the project at issue.

Where feasible, mitigation measures for cumulative impacts are provided along with the analysis of each issue area in Section 4.1.7 below. In those cases where project-specific mitigation measures would reduce the cumulative level of significance, those mitigation measures are identified.

The cumulative impacts of implementing the Proposed Project or any of the other four action alternatives for "Land" or the Preferred Alternative or any of the other action alternatives for "Water" would be substantially similar; therefore, this cumulative analysis uses the term "project" to refer to the action alternatives under both the "Land" and "Water" components. The cumulative impacts of adopting the No Project Alternative, which could entail construction of up to 44 rural residences under the existing Sacramento County land use and zoning (i.e., Ag-80) without any water conveyance facilities or water treatment plants, have already been analyzed as part of the Sacramento County General Plan EIR (1993), which is incorporated herein by reference.

4.1.2 PROJECTS CONTRIBUTING TO POTENTIAL CUMULATIVE IMPACTS

The State CEQA Guidelines identify two basic methods for establishing the cumulative environment in which the project is to be considered: the use of a list of past, present, and probable future projects (the "list approach") or the use of adopted projections from a general plan, other regional planning document, or certified EIR for such a planning document (the "plan approach"). Either of these methodologies also fulfill the NEPA requirements for cumulative impact analysis (Council on Environmental Quality 1997). For this EIR/EIS, the list and plan approach have been utilized to generate the most reliable future projections possible.

The Folsom South of U.S. 50 Specific Plan project is comprised of several components, including land use changes ("Land" components) and water supply infrastructure ("Water" components). Large-scale development projects in the general vicinity of the "Land" portion of the project are included for known projects within western El Dorado County, eastern Sacramento County, and the City of Folsom. The "Water" portion of the project includes known development and infrastructure projects in Sutter County, the Natomas Basin, and the City of Rancho Cordova and larger statewide planning efforts that could substantially influence cumulative operational conditions along the Sacramento River. Because the Folsom South of U.S. 50 Specific Plan project is a long-term project, and there are innumerably other projects that may be proposed over the lifespan of the project's buildout, the plan approach is also used to ensure that long-term growth throughout the region is considered. Projects and plans included in these two approaches are described below.

4.1.3 CUMULATIVE CONTEXT

Sacramento County, El Dorado County, and Sutter County as a whole are facing numerous regional issues pertaining to air quality degradation, traffic congestion, biological habitat loss, water quality degradation, and other urban-related environmental changes, which are discussed in greater detail below.

SACRAMENTO COUNTY

Sacramento County encompasses approximately 775 square miles in the middle of the 400-mile-long Central Valley, which is California's prime agricultural region. Sacramento County is bordered by Contra Costa and San Joaquin Counties on the south, Amador and El Dorado Counties on the east, Placer and Sutter Counties on the north, and Yolo and Solano Counties on the west. Sacramento County extends from the low delta lands between the Sacramento and San Joaquin Rivers north to about 10 miles beyond the State Capitol and east to the foothills of the Sierra Nevada. The southernmost portion of Sacramento County has access to the San Francisco Bay via the Sacramento River. Sacramento County lies at the geographic center of the region and spans both agricultural land uses as well as the most urbanized areas of the region. The geographic boundaries of Sacramento County include seven incorporated cities: Sacramento, Folsom, Rancho Cordova, Citrus Heights, Elk Grove, Galt, and Isleton.

The highest densities of employment and residential uses are located in the urban core of the city of Sacramento. Two of the three regional employment centers are located in Sacramento County, one in downtown Sacramento and the more recent along U.S. Highway 50 (U.S. 50) in the cities of Rancho Cordova and Folsom. Land uses north of the American River are primarily suburban residential with concentrations of commercial and employment uses along major transportation routes. The southern end of the region (e.g., south Sacramento, the unincorporated Vineyard community, the cities of Elk Grove and Galt) is predominantly residential, with the latter three areas at

fairly low-suburban to rural densities. The Cosumnes River floodplain and existing agricultural operations separate the cities of Elk Grove and Galt. The southeast county (outside of existing cities and the county Urban Services Boundary [USB]) is in agricultural use with pockets of rural residential communities.

Growth in Sacramento County is occurring and is projected to occur primarily in the cities of Elk Grove and Rancho Cordova and in the community of Natomas, which are the only remaining areas of the county within the USB where land is available.

New residential development is expected to result from buildout of vacant and underutilized parcels; planned communities, including Elverta, East Antelope, Vineyard Springs, North Vineyard Station, and Florin Vineyard Gap; mixed-uses in commercial corridors; and the West of Watt, Easton, Jackson Highway Corridor, and Grant Line East New Growth Areas. Approximately 113,000 housing units could be developed from buildout of these areas (Sacramento County 2009:2-12).

According to the Sacramento Area Council of Government's (SACOG's) Sacramento Region Blueprint, the unincorporated portion of Sacramento County will grow by nearly 100,000 new jobs and 100,000 new housing units by 2030, indicating that this trend is likely to continue (Sacramento County 2009:2-9). Accommodating the projected employment and the new residents will not only require more housing, but will also necessitate additional jobs, stores, human services, transportation system capacity, public facilities, and municipal and countywide services. The county population has grown from 1,041,219 in 1990 to 1,223,499 in 2000 (U.S. Census Bureau 2000b), and the population of the county as of January 1, 2008, was estimated to be 1,433,187 (California Department of Finance [DOF] 2009).

EL DORADO COUNTY

El Dorado County encompasses approximately 1,790 square miles with the waters of Lake Tahoe and Folsom Lake covering 65 square miles of this total area. The physical environment of El Dorado County has an important influence on its land use and development patterns. The most important physical features affecting development are the Sierra Nevada mountain range, U.S. 50, large areas of the county that are dominated by forestland, and Lake Tahoe. (El Dorado County 2003: 5.1-1.)

The Sierra Nevada divides El Dorado County into two distinct topographic areas—the west slope and Lake Tahoe Basin. The west slope extends from the Sacramento County line on the west to the summit of the Sierra Nevada on the east and contains most of the developed land in the county. The Lake Tahoe Basin extends from the eastern side of the Sierra Nevada to the California/Nevada border. This mountainous area is characterized physically by rugged and steep terrain. (El Dorado County 2003: 5.1-1.)

U.S. 50 bisects El Dorado County, traveling east-west from the Sacramento County through Placerville to and past the California/Nevada border just south of Lake Tahoe. Development in the county has closely followed this route, with the densest development in the west. One reason for the clustering of development in the western portion of the county is the vast area of forestland that is in the El Dorado National Forest and privately owned commercial timberland, and steep terrain that covers much of the eastern two-thirds of the county. Major towns and communities along this corridor include El Dorado Hills, Cameron Park, Shingle Springs, Placerville, Pollock Pines, and South Lake Tahoe. In addition, U.S. 50 is a major transportation corridor for residents living in El Dorado County and working in Sacramento County and for recreation-related traffic generated in areas outside of the county. (El Dorado County 2003: 5.1-2.)

Development on the west slope is concentrated near the El Dorado/Sacramento County line and along the U.S. 50 corridor, with several large-scale residential and commercial developments under construction and approved plans for additional future development. The density of residential and commercial development gradually decreases and the amount of open space increases heading east from the foothills to the Sierra Nevada summit. Placerville,

located approximately 15 miles from the county line, is the only incorporated city on the west slope. (El Dorado County 2003: 5.1-1.)

The projected demand for new housing by 2025 is roughly 32,000 units (El Dorado County 2003:4-14). New residential development is anticipated to occur in the western portion of El Dorado County with El Dorado Hills experiencing the largest growth (El Dorado County 2003:4-14). This is due to the proximity to public services and the regional job base. Nonresidential development is also expected to occur in the western parts of El Dorado County where additional household growth is driving growth in employment (El Dorado County 2003:4-20).

According to SACOG's Sacramento Region Blueprint, El Dorado County will grow by nearly 187,000 new jobs and 32,000 new housing units by 2050 (SACOG and Valley Vision 2004a). El Dorado County population has grown from 125,995 in 1990 to 156,299 in 2000 (U.S. Census Bureau 2000a), and the current population of El Dorado County as of January 1, 2009, was estimated to be 180,185 (DOF 2009).

SUTTER COUNTY

Sutter County is situated in the Sacramento Valley, with the southern boundary located approximately 10 miles north of the city of Sacramento. Sutter County comprises 607 square miles of land. It is generally bordered on the west by the Sacramento River, on the east by the Feather and Bear Rivers and Placer County, on the north by Butte County, and on the south by Sacramento County. State Route (SR) 99 extends in a north-south direction through Sutter County and is the primary corridor connecting Sutter County to the region. SR 99 is joined by SR 70 in the southern part of Sutter County, becoming SR 99/70. SR 70 extends north to the cities of Marysville and Oroville. SR 20 is the primary east-west connection through Sutter County. (Sutter County 2008.)

The unincorporated area of Sutter County consists of several rural communities including Meridian, adjacent to the western boundary in the north; Sutter, located in the north-central portion of Sutter County abutting the Sutter Buttes; Robbins, located in the southwest between the Sacramento River and the Sutter Bypass along SR 113; and the communities of Rio Oso, Trowbridge, Nicolaus, and East Nicolaus, all clustered near the convergence of the Bear and Feather Rivers in the southeast portion of Sutter County. (Sutter County 2008.)

In addition to the rural communities, Sutter County includes two incorporated cities: Yuba City and Live Oak. Yuba City is the major urban center within Sutter County and is located along the Feather River in the east-central portion of Sutter County where SR 99 and SR 20 intersect. The city of Live Oak is located in the northeast corner of Sutter County north of the city of Yuba City.

Although residential uses are clustered in the cities and rural communities, approximately 8,800 acres of residential uses are scattered throughout the remainder of Sutter County. Most of these residential uses are located in unincorporated areas surrounding the cities of Yuba City and Live Oak and outside of the boundaries of the rural communities. Other clusters of residential land use occur along major transportation corridors, such as SR 99 and SR 20, as well as along the Sacramento and Feather Rivers and surrounding the Sutter Buttes. Other smaller concentrations of industrial and public areas are also located throughout unincorporated Sutter County, most often near the concentrations of residential uses mentioned above and outside of the rural communities' boundaries. Small clusters of commercial uses exist outside of the cities and rural communities, but in general, these uses occur either within or immediately surrounding these areas. (SACOG 2007.)

Most of the growth in Sutter County has taken place in the cities of Yuba City and Live Oak. Annexations and new development have increased the share of Sutter County's incorporated population from 40% in 1970 to 75% in 2007 (SACOG 2007). SACOG's Sacramento Region Blueprint anticipates 40,000 households and 60,000 jobs in Sutter County between 2000 and 2050. With regard to the Proposed Project, the SACOG Blueprint Preferred Scenario anticipates approximately 20,000 jobs and 8,500 households on 7,420 acres in the south Sutter County area. Sutter County has grown from 64,415 people in 1990 to 78,930 people in 2000 (U.S. Census Bureau 2000). The current population of Sutter County as of January 1, 2009, was estimated to be 95,878 persons (DOF 2009a).

CITY OF FOLSOM

The City of Folsom encompasses approximately 24 square miles within the incorporated boundaries, of which 2.4 square miles are water, primarily accounted for by Folsom Lake. The City is located in north-central California about 20 miles east of Sacramento and approximately 125 miles east of San Francisco. The city is bounded by Folsom Lake to the north, the El Dorado County line to the east, U.S. 50 to the south, and Lake Natoma to the southwest. The city is bisected by the American River, which runs diagonally from northeast to southwest from the Folsom Lake to Lake Natoma. The City limit also extends north of the American River and to the Placer County line north of Folsom-Auburn Road and the Baldwin Reservoir.

The SACOG Blueprint Preferred Scenario anticipates an additional 24,400 households and 31,700 jobs in Folsom between 2000 and 2050 (SACOG and Valley Vision 2004a). The Blueprint assumes the City would have a population of 105,000 by 2050 and most of this growth would be located on vacant land within the current City boundaries and within the SPA. The City population has grown from 29,802 in 1990 to 51,884 in 2000 (U.S. Census Bureau 2000c), and the population of the City as of January 1, 2009, was estimated to be 71,018 (DOF 2009b).

CITY OF RANCHO CORDOVA

The City of Rancho Cordova encompasses approximately 20,000 acres in eastern Sacramento County. The Planning Area for the City of Rancho Cordova consists of the existing incorporated city and a larger study area (approximately 58,190 acres) and was selected based on the city limits and surrounding areas that are anticipated to be incorporated into the city in the future (Rancho Cordova 2006: 3.0-1). The city limits and its Planning Area are generally bordered by the American River on the north, Prairie City Road and the boundary of the 100-year floodplain for the Cosumnes River on the east, Jackson Highway (SR 16) on the south, and Watt Avenue and the City of Sacramento on the west. (City of Rancho Cordova 2006.)

The city is characterized by a wide range of existing land uses, including residential developments, commercial/retail/office uses, industrial uses, and institutional uses. The majority of the commercial, office, and retail uses are located along the Sunrise Boulevard and Folsom Boulevard corridors. Industrial, manufacturing, and distribution facilities are located throughout the city, primarily along Sunrise Boulevard, Jackson Highway (SR 16), Bradshaw Road, and Folsom Boulevard. The Aerojet General Corporation operations are located south of U.S. 50 and east of Sunrise Boulevard. Teichert and Granite have active mining operations north of Jackson Highway (SR 16) between Bradshaw Road and Excelsior Road and Teichert also has operations south of U.S. 50 along Grant Line Road. The most southern portion of the city (i.e., south of SR 16) is characterized with rural residential, agricultural operations, and industrial land uses. (City of Ranch Cordova 2006: 4.1-4.)

The SACOG Blueprint Preferred Scenario anticipates an additional 112,000 households and 144,000 jobs in Rancho Cordova between 2000 and 2050. The Blueprint assumes Rancho Cordova would have a population of over 332,000 people by 2050 and a fairly even mixture of jobs and housing and this growth would occur through development on underutilized lands along and near Folsom Boulevard and lands inside the current Urban Services Boundary (USB). Housing is expected to be primarily single-family detached homes plus multi-family units (attached rowhouses, townhomes, condominiums, and apartments) to ensure housing for the growing population and work force. (SACOG and Valley Vision 2004d.) The city population has grown from 48,731 in 1990 to 53,065 in 2000 (U.S. Census Bureau 2000), and the population of the City as of January 1, 2009, was estimated to be 61,817 (DOF 2009c).

4.1.4 GEOGRAPHIC SCOPE

Different portions of the project would develop on and affect different geographical areas. The following geographic area descriptions are used in this EIR/EIS:

- **Specific Plan Area (SPA):** This refers to the entire area proposed for annexation by the City of Folsom, including U.S. 50 highway right-of-way and interchange areas, for a total of approximately 3,584 acres. Most "On-Site" analyses in the "Land" portion of this EIR/EIS address conditions on the SPA.

- **Off-site Improvements:** This refers to the location of certain off-site improvements required to support the proposed land use changes, including a detention basin west of Prairie City Road; roadway and interchange improvements along U.S. 50 (at Prairie City Road, Oak Avenue, Rowberry Drive, Scott Road, and Empire Ranch Road); a sewer line extension across U.S. 50 to an existing pump station along Iron Point Road; and sewer and roadway extensions into El Dorado Hills.

- **Off-site Water Facilities Study Area:** This refers to the area studied for the various water supply facilities required under the alternatives in the "Water" portion of this EIR/EIS. These facilities include: (1) a point of diversion on the Sacramento River at the Freeport Project, (2) a raw or treated-water booster pump station, (3) a raw or treated-water conveyance pipeline alternative to convey the water to the SPA, and (4) a water treatment plant (WTP) alternative.

The geographic area that could be affected by the "Land" and "Water" portions of the project varies depending on the type of environmental resource being considered. When the impacts of the "Land" and "Water" portions of the project are considered in combination with other past, present, and future projects to identify cumulative impacts, the other projects considered may also vary depending on the type of environmental impacts being assessed. The general geographic area associated with different environmental impacts of the 'Land" and "Water" portions of the project defines the boundaries of the area used for compiling the list of projects considered in the cumulative impact analysis. Table 4-1 presents the general geographic areas associated with the different resources addressed in this EIR/EIS cumulative analysis.

Table 4-1
Geographic Scope of Cumulative Impacts

Resource Issue	Geographic Area	
	Land	Water
Aesthetics	Sacramento County, the City of Folsom, and the community of El Dorado Hills	Sacramento County and the City of Rancho Cordova
Air Quality	Sacramento Federal Ozone Nonattainment Area (includes Sacramento County, Yolo County, the western portion of El Dorado County, and portions of Placer and Solano Counties)	Sacramento Federal Ozone Nonattainment Area (includes Sacramento County, Yolo County, the western portion of El Dorado County, and portions of Placer and Solano Counties)
Biological Resources	Alder Creek, Buffalo Creek, Coyote Creek, and Carson Creek watersheds	Sacramento County
Climate Change	Global, regional, and local (SPA and vicinity)	Global, regional, and local (Off-Site Water Facilities Study Area and vicinity)
Cultural Resources	SPA and Sacramento Region, including El Dorado and Sacramento Counties and the City of Folsom	Sacramento Region, including Sacramento County and the City of Rancho Cordova
Environmental Justice	City of Folsom, Sacramento County, and El Dorado Hills	City of Rancho Cordova and Sacramento County
Geology, Soils, Minerals, and Paleontological Resources	SPA and immediate vicinity	Alternative WTP sites and alternative conveyance pipeline alignments
Hazards and Hazardous Materials	SPA	Alternative WTP sites and alternative conveyance pipeline alignments
Hydrology and Water Quality	South American Groundwater Subbasin, Alder Creek, Buffalo Creek, Coyote Creek, and Carson Creek watersheds and their receiving waters	Alder Creek and Buffalo Creek

Table 4-1
Geographic Scope of Cumulative Impacts

Resource Issue	Geographic Area	
	Land	Water
Groundwater Resources	NA [1]	South American Groundwater Subbasin and North American Groundwater Subbasin
Land Use and Agricultural Resources	Development identified in El Dorado County, Sacramento County, and the City of Folsom	Development identified in Sacramento County and the City of Rancho Cordova
Noise	Immediate project vicinity where effects are localized	Immediate vicinity of alternative WTP sites and alternative conveyance pipeline alignments where effects are localized
Parks and Recreation	Regional and local facilities	Regional and local facilities
Population, Employment, and Housing	Sacramento Region, including El Dorado and Sacramento Counties and the City of Folsom	NA [2]
Public Services	City of Folsom Fire Department, City of Folsom Police Department, and Folsom Cordova Unified School District	NA [2]
Traffic and Transportation	Regional and local facilities	Regional and local facilities
Utilities and Service Systems	Natomas Central Mutual Water Company, Sacramento Regional County Sanitation District, Sacramento Regional Wastewater Treatment Plant, El Dorado Irrigation District, Sacramento Metropolitan Utility District, Kiefer Landfill, PG &E, AT&T, and Comcast	Kiefer Landfill, SMUD, and AT&T

Notes: NA = not applicable; WTP = water treatment plant; SMUD = Sacramento Municipal Utility District; PG&E = Pacific Gas & Electric Company

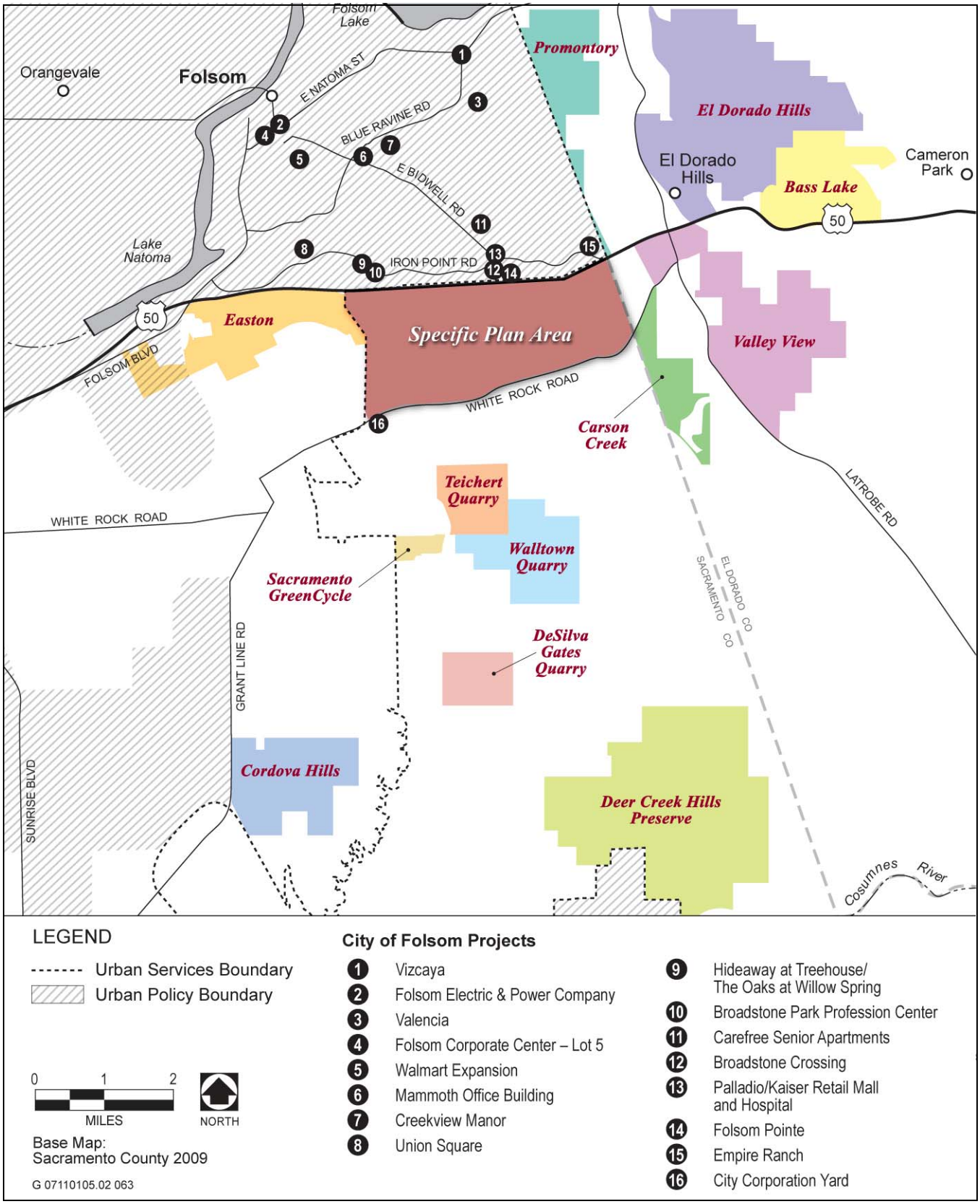
[1] Groundwater resources under the land portion of the project are included in Section 3A.9, "Hydrology and Water Quality."

[2] The "Water" portion of the project would have no impacts on population, employment, and housing and public services as explained in detail in EIR/EIS Section 3.0, "Affected Environment, Environmental Consequences, and Mitigation Measures."

Source: Data compiled by AECOM in 2010

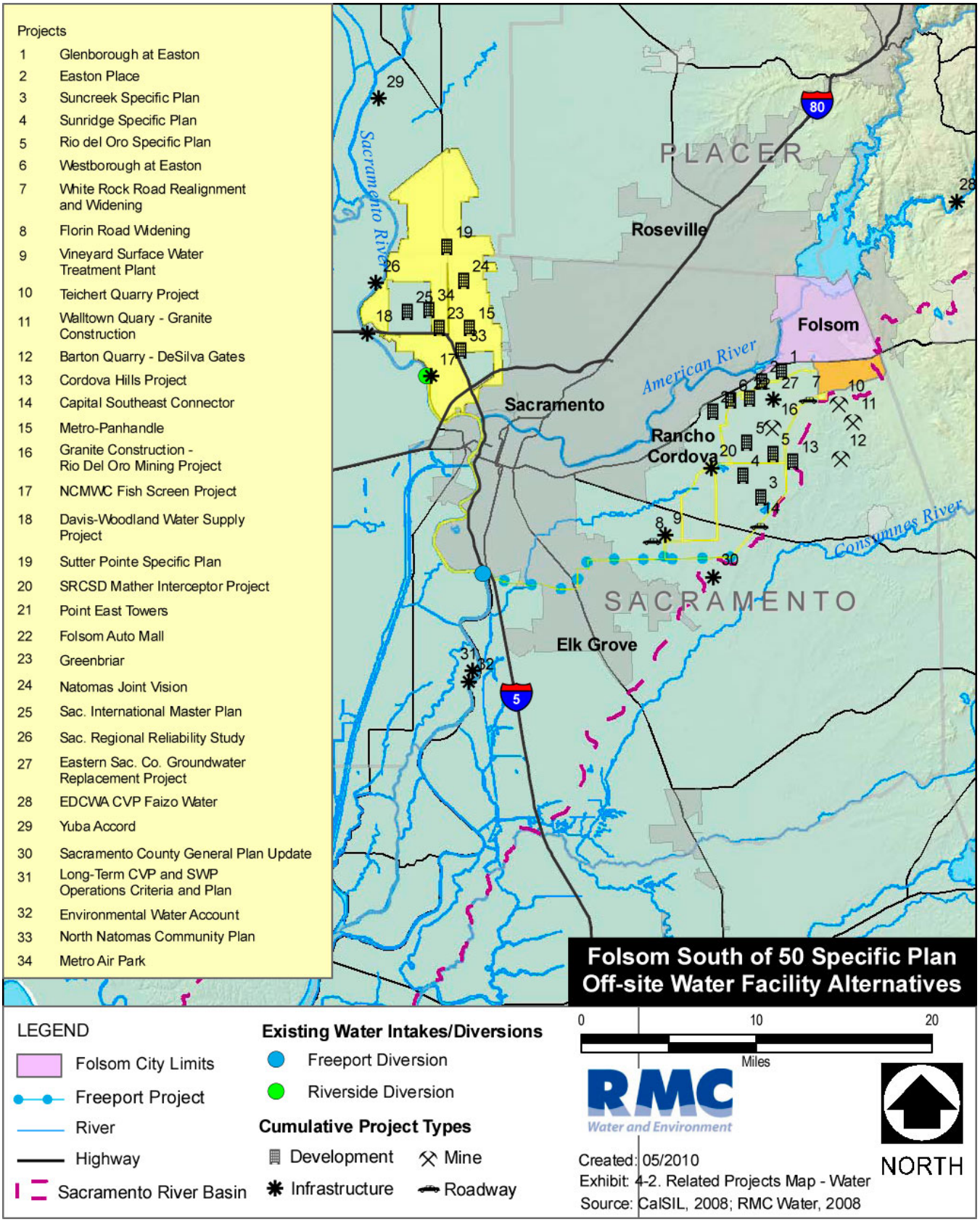
4.1.5 LIST OF RELATED PROJECTS

The list of past, present, and probable future projects used for this cumulative analysis is restricted to major development projects in eastern Sacramento County, western El Dorado County, and the City of Folsom under the "Land" portion of the project; and major development projects and roadway and water supply infrastructure projects in Sacramento County, Sutter County, the Natomas Basin, and the City of Rancho Cordova under the "Water" portion of the project (as defined above). For the purposes of this discussion, these projects that may have a cumulative effect on the resources in the SPA, the off-site improvements, or the Off-site Water Facilities Study Area will often be referred to as the "related projects." These related projects are identified in Exhibits 4-1 and 4-2 and Tables 4-2 and 4-3 (note that the map numbers identified for each related project in Tables 4-2 and 4-3 correspond with the numbers that appear on the map in Exhibits 4-1 and 4-2, respectively). The analysis of cumulative environmental impacts associated with the "Land" and "Water" portions of the project addresses the potential incremental contributions of the "Land" and "Water" portions of the project in combination with these related projects. The projects listed in Tables 4-2 and 4-3 are not intended to be an all-inclusive list of projects in the region, but rather an identification of larger projects approved or planned in eastern Sacramento County, western El Dorado County, and the Cities of Folsom and Rancho Cordova that may affect the same resources as the Folsom South of U.S. 50 Specific Plan project.



Source: City of Folsom 2007, 2009; Sacramento County 2007, 2008; Data adapted by AECOM in 2010

Related Projects Map - Land **Exhibit 4-1**



Related Project Map – Water **Exhibit 4-2**

In addition to the residential and commercial development identified in Tables 4-2 and 4-3 below, the following large-scale projects are proposed in Sacramento County south of White Rock Road and have been identified for additional detailed consideration in response to the notice of preparation (NOP) of the EIR/notice of intent (NOI) to prepare the EIS: Deer Creek Hills Preserve Master Plan; Teichert Quarry General Plan Amendment, Rezone, Use Permit, Reclamation Plan and Development Agreement (Teichert Quarry); Walltown Quarry General Plan Amendment, Rezone, Use Permit, and Reclamation Plan (Walltown Quarry); and DeSilva–Gates Quarry General Plan Amendment, Rezone, Use Permit, Reclamation Plan and Development Agreement (DeSilva-Gates Quarry).

Table 4-2
Related Projects under the Land Portion of the Project in Sacramento County, El Dorado County, and the City of Folsom

Map Key	Project Name	Location	Status	Total Area (acres)	Dwelling Units	Commercial/ Office Area
Sacramento County						
NA	Easton (Easton Place and Glenborough at Easton)	South of U.S. 50 between Hazel Avenue and Prairie City Road	Proposed	1,391	4,883	4,200,000 sq ft
NA	Cordova Hills	East of Grant Line Road; south of Douglas Road; west of Coyote Creek	Application under review	2,419	8,726	188.8 ac
	Sacramento GreenCycle Project	South of White Rock Road	Proposed	N/A	N/A	N/A
El Dorado County						
NA	Carson Creek	South of U.S. 50, east of the Sacramento County line	Complete	711	1,470	15.5 ac
NA	Valley View	South of U.S. 50; east of Sacramento County line	Complete	2,038	2,840	40 ac
NA	Promontory	South of Folsom Lake, north of U.S. 50	Complete	999	1,097	7 ac
NA	El Dorado Hills	North of U.S. 50; east of Sacramento County line	Complete	3,646	4,481	301 ac
NA	Bass Lake	North of U.S. 50; east of Sacramento County line	Complete	1,166	1,025	---
City of Folsom						
1	Vizcaya	East Natomas Street and Green Valley Road	Complete	---	105	---
2	Folsom Electric & Power Company	602 – 604 Sutter Street	Approved, awaiting building permit submittal	0.7	---	29,998 sq ft
3	Valencia	1700 Parkway Drive North	Under construction	---	209	---
4	Folsom Corporate Center – Lot 5	Between Sutter Street, Wool Street, Leidesdorff Street and the Folsom light rail station	Application under review	7.74	---	100,000 sq ft
5	Walmart Expansion	1018 Riley Street	Proposed	0.6	---	27,310 sq ft expansion
6	Mammoth Office Building	Southeast corner of East Bidwell Street and Creekside Drive	Approved, awaiting building permit submittal	4.25	---	58,016 sq ft
7	Creekview Manor	1700 Creekside Drive	Complete	30.4	138	---
8	Union Square	550 Willard Drive	Complete	---	114	---
9	Hideaway at Treehouse/ The Oaks at Willow Spring	900 Outcropping Way	Under construction	41	346	10,000 sq ft
10	Broadstone Park Profession Center	1855 Iron Point Road	Entitlements granted	8.16	---	73,829 sq ft

Table 4-2
Related Projects under the Land Portion of the Project in Sacramento County, El Dorado County, and the City of Folsom

Map Key	Project Name	Location	Status	Total Area (acres)	Dwelling Units	Commercial/ Office Area
11	Carefree Senior Apartments	Broadstone Parkway and Cavitt Drive	Under construction	1.4	348	---
12	Broadstone Crossing	Southeast Corner of East Bidwell Street and Iron Point Road	Approved	11.1	---	208,482 sq ft
13	Pallidio/Kaiser Retail Mall and Hospital	Northwest Corner of Iron Point Road and East Bidwell Street	Under construction	4.0	---	930,000 sq ft
14	Folsom Pointe	East of East Bidwell; west of Old Placerville Road	Approved, awaiting building permit submittal	12.4	---	12.4 ac
15	Empire Ranch	East of Empire Ranch Road, west of Dry Creek Road	Under construction	1,738	3,644	20 ac
16	City Corporation Yard	Southeastern corner of White Rock Road and Prairie City Road	Proposed	?		

Notes: NA = not applicable; ac = acre; sq ft = square feet

Source: City of Folsom 2009, City of Folsom 2008, County of Sacramento 2008 and 2009, City of Folsom Community Development Department 2008, County of Sacramento 2008, City of Rancho Cordova and U.S. Army Corps of Engineers, Sacramento District 2006, County of El Dorado 2003

Table 4-3
Related Projects under the Water Portion of the Project in Sacramento County, Sutter County, and the City of Rancho Cordova

Map Key	Project Name	Location	Status	Total Area (acres)	Dwelling Units	Commercial/ Office Area
Sacramento County						
15	Natomas Panhandle Annexation and Planned Unit Development	Northwest corner of Del Paso Road and Sorento Road	Approved	1,430	3,075	27 ac
23	Greenbriar Specific Plan	Northwest corner of SR 99 and Elkhorn Boulevard	Approved	577	3,473	27.5 ac
33	North Natomas Community Plan	South of the Natomas Joint Vision area, west and northwest of I-5 5, and northeast of I-80	Under construction	9,038	33,257	2,195 ac
34	Metro Air Park	North of I-5 and east of the Sacramento River within the Sacramento International Airport Master Plan area	Approved	1,983	---	1,400 ac
Sutter County						
19	Sutter Pointe Specific Plan	Immediately north of the Sacramento/Sutter County line	Approved	7,500	17,500	2,181 ac
City of Rancho Cordova						
3	SunCreek Specific Plan	South of Douglas Road, north of SR 16, west of Grant Line Road, and east of Sunrise Boulevard	Proposed	1,253	5,634	19 ac
4	Sunridge Specific Plan	South of Douglas Road, east of Sunrise Boulevard, and small areas north of Grant Line Road	Under construction	2,606	9,337	173 ac

Table 4-3
Related Projects under the Water Portion of the Project in Sacramento County, Sutter County, and the City of Rancho Cordova

Map Key	Project Name	Location	Status	Total Area (acres)	Dwelling Units	Commercial/ Office Area
5	Rio del Oro Specific Plan	South of White Rock Road, north of Douglas Road, and east of Sunrise Boulevard	Proposed	3,828	11,601	521 ac
6	Westborough at Easton	South of U.S. 50, north of White Rock Road, and east of the Folsom South Canal	Proposed	1,137	5,910	45 ac
	Westborough Station	Mine Shaft Lane, south of Folsom Boulevards and the Folsom Light Rail line			900	75,000 sq ft
21	Point East Towers	Northeastern corner of Point East Drive and Folsom Boulevard				19,000 sq ft
22	New Folsom Auto Mall	South side of Folsom Boulevard at Aerojet Road		29	---	
	The Ranch at Sunridge	South of Douglas Road, north of Kiefer Boulevard, east of Sunrise Boulevard, and west of Grant Line Road	Proposed	530	2,703	165,000 sq ft
	Arboretum-Waegell	South of Kiefer Boulevard, north of SR 16, north and northwest of Grant Line Road, and east of Sunrise Boulevard	Proposed	900	5,000	465,000 sq ft

Notes: ac = acre; sq ft = square feet; SR = State Route; I-5 = Interstate 5; I-80 = Interstate 80; U.S. 50 = U.S. Highway 50
Source: RMC 2009

ROADWAY IMPROVEMENT PROJECTS

Roadway improvement projects planned in the Off-site Water Facilities Study Area include the White Rock Road Realignment and Widening Project, Florin Road Widening Project, and the Capital Southeast Connector. Initial improvements for these roadway projects are planned for construction sometime between 2010 and 2012. The approximate locations of these roadway improvements are shown in Exhibit 4-2. As shown, these projects would be constructed within Zone 4 of the Off-site Water Facilities Study Area.

WATER SUPPLY INFRASTRUCTURE PROJECTS

Davis-Woodland Water Supply Project

The Cities of Davis and Woodland in Yolo County are jointly proposing to divert up to approximately 46,000 acre-feet per year (AFY) of surface water from the Sacramento River. The cities are proposing to use an existing diversion/intake facility operated by Reclamation District (RD) 2035. This intake location is located north of Zone 2 in the Off-site Water Facilities Study Area.

Sacramento River Water Reliability Study

The U.S. Bureau of Reclamation (Reclamation) and Placer County Water Agency (PCWA) are proposing the Sacramento River Water Reliability Study (SRWRS), which would consist of a package of water supply infrastructure components, including new or expanded diversion(s) from the Sacramento River, and new or expanded water treatment and pumping facilities, storage tanks, and major transmission and distribution pipelines. The Sacramento River diversion site is situated north of Zone 2 in the Off-site Water Facilities Study Area.

Vineyard Surface Water Treatment Plant

As described in Chapter 2, "Alternatives," the Sacramento County Water Agency (SCWA) is in the initial stages of constructing the Vineyard surface water treatment plant (SWTP) with operation anticipated by 2012. The later phases of construction may potentially overlap with construction of the water portion of the project. The Vineyard SWTP is within Zone 4 of the Off-site Water Facilities Study Area.

Yuba River Accord

The purpose of the Yuba River Accord is to resolve instream flow issues associated with operation of the Yuba Project in a way that protects and enhances lower Yuba River fisheries and local water supply reliability. For discussion purposes, the Yuba Project includes: storage and hydropower facilities located in the Yuba River basin; the riparian corridor along the North Yuba River downstream of New Bullards Bar Dam; the lower Yuba River downstream of Englebright Dam to the confluence with the Feather River; the Yuba County Water Agency (YCWA) Member Unit water service areas; the local groundwater basin; and lands overlying the groundwater basin. In addition, Reclamation and the California Department of Water Resources' (DWR's) goals for the project include obtaining water for CALFED to use for protection and restoration of Sacramento-San Joaquin Delta (Delta) fisheries and for improvements in statewide water supply reliability, including supplemental water for the Central Valley Project (CVP) and State Water Project (SWP). As a state agency party to the Yuba Accord, DWR also would be involved in the purchase of Yuba Project water for use in the Environmental Water Account (EWA) Program (described further below) and for SWP contractor supplies. The flows for the Yuba River Accord may provide up to 60,000 AFY for EWA, in the lower Yuba River (estimated to provide up to 48,000 AF of additional Delta export), and may provide additional water to the CVP and SWP and their contractors in drier years.

The Yuba Accord includes a Fisheries Agreement that contains new minimum in-stream flows for the lower Yuba River that are intended to maintain or increase protection of the river's fisheries resources. To help provide these flows, the YCWA would implement conjunctive use agreements to establish a comprehensive conjunctive use program that would provide for comprehensive management of the surface water and groundwater supplies. The flow schedules are based on water availability, including inflow into New Bullards Bar Reservoir and reservoir carry-over storage. The cumulative analysis acknowledges the existence of these new minimum instream flow requirements on the Lower Yuba River, which contribute to the total flow within the Sacramento River, north of the Natomas Central Mutual Water Company (NCMWC). The Yuba Accord is northeast of Zone 1.

Environmental Water Account

The EWA consists of two primary elements: (1) facilitation of fish population recovery through asset (water) acquisition and management, and (2) use of the acquired assets to replace water deliveries (or supplies) interrupted by changes in CVP/SWP operations. The Preferred Alternative, or the Flexible Purchase Alternative for the EWA, would allow the EWA agencies the ability to acquire up to 600,000 AF of water assets (although the EWA agencies would typically acquire 200,000 to 300,000 AFY, except in years with high fish needs) to address pump reductions and other fish actions, and to compensate the CVP/SWP for water otherwise lost due to those actions.

A Supplement to the Final EIS/EIR (State Clearinghouse No. 1996032083) for the EWA was prepared by DWR and Reclamation in 2007, which provides an evaluation of the effects associated with extending the current EWA through 2011. For the purposes of the cumulative analysis, it is assumed that the EWA would continue as currently established through the 2030 timeframe.

Reclamation/ El Dorado County Water Agency Central Valley Project Water Supply Contract

This project involves a new CVP Municipal and Industrial (M&I) Water Service Contract between Reclamation and the El Dorado County Water Agency (EDCWA) for up to 15,000 AFY. This contract would have a 40-year

term and would be subjects to renewals. EDCWA intends to allocate this new contract water to both El Dorado Irrigation District (EID) and Georgetown Divide Public Utility District (GDPUD) based on these parties individual water needs and timing requests. The cumulative analysis assumes that this surface water supply is allocated to EID or GDPUD under future cumulative conditions and diverted upstream of the Off-site Water Facilities Study Area.

MATHER INTERCEPTOR PROJECT

The Sacramento Regional County Sanitation District (SRCSD) is proposing the installation of a new sewer trunk and pump station project to serve new development with in southern Rancho Cordova. The project currently includes five sewer interceptor alternatives, which would serve the general area north of the Jackson Highway (SR 16) and east of Sunrise Boulevard. Construction is planned for 2009 through 2010. These improvements would overlap with Alternatives 2, 2A, 3, 3A, 4, and 4A of the "Water" portion of the project.

EASTERN SACRAMENTO COUNTY GROUNDWATER REPLACEMENT PROJECT

This project would construct the necessary conveyance and pumping facilities to use remediated groundwater from Aerojet and McDonnell Douglas Corporation (MDC)/Boeing groundwater extraction and treatment (GET) facilities. Following its discharge to local waterways, remediated water from the GET facilities would be diverted by Sacramento County Water Agency (SCWA) and other water purveyors as replacement water for groundwater production capacity lost as a result of contaminated wells that have been taken out of service in Sacramento County and the City of Rancho Cordova, for: (1) new development within eastern Sacramento County; and (2) environmental benefit, namely supplement flows for fishery enhancement and groundwater recharge in the Cosumnes River. The GET water would be diverted at Reclamation's Folsom South Canal (FSC), City of Sacramento Fairbairn WTP Diversion, and the Freeport Project diversion, on the Sacramento River, downstream of the American River confluence. Based on the implementation of this project, groundwater pumped and conveyed from GET facilities is not lost from the basin, but rather diverted by SCWA and delivered to local wholesale and retail water agencies. For the purposes of this cumulative analysis, it is assumed the continuation of the Regional Water Supply Plan (RWSP) estimated at 35,890 AFY.

DEER CREEK HILLS PRESERVE

The Deer Creek Hills Preserve consists of 4,062 acres, bordered by Scott Road to the west and Michigan Bar Road to the east. The Deer Creek Hills Preserve is administered by the Sacramento Valley Conservancy, the County of Sacramento, and State Parks. Land uses at this site include open space, habitat preservation, cattle grazing, and public recreation (Sacramento County 2008a:1-1).

The draft environmental impact report (DEIR) for the Deer Creek Hills Preserve Master Plan (State Clearinghouse Number 200705210) was released on December 12, 2008, for a 45-day public review period. As described in the DEIR, the Deer Creek Hills Preserve project would result in various environmental impacts, most of which would be reduced to a less-than-significant level through implementation of mitigation measures. The only significant and unavoidable impact that would occur is the disturbance of sensitive cultural resources (Sacramento County 2008a:1-1).

TEICHERT QUARRY

The proposed Teichert Quarry would be located approximately 0.9-mile south of the SPA in Sacramento County, south of White Rock Road, east of Grant Line Road, and west of Scott Road. The Teichert Quarry project would be located on approximately 380 acres of the 580-acre site and would include construction of an aggregate processing facility, administration complex, parking areas, on-site access road, and various other stockpiles and processing areas (Sacramento County 2008b:S-1). The Teichert Quarry project includes construction of a public

access road for ingress/egress to the property that would extend from the entrance/exit of the property north approximately one mile to White Rock Road.

The maximum proposed annual aggregate production during the life of the quarry would be 7 million tons per year. A maximum of 6 million tons per year would be distributed directly from the quarry site on haul trucks using the proposed access road. A maximum of 3 million tons and a minimum of 1 million tons per year would be conveyed to the existing Grant Line facility for further processing and sale. Mining would continue for up to 25 years through two mining phases. A total of about 135 million tons of material would be mined over the life of the quarry. At the conclusion of aggregate production, a two- to four-year final reclamation phase would extend the total project lifespan to 27 to 29 years. (Sacramento County 2008b:2.0-6.)

The DEIR for the Teichert Quarry Project was released on August 22, 2008, for a 45-day public review period. The requested entitlements for the Teichert Quarry project are the following: a General Plan Amendment and rezoning, a use permit, a grading permit, a reclamation plan, an encroachment permit, and a development agreement (Sacramento County 2008b:1.0-2). As described in the Teichert Quarry Project DEIR, construction and operation of the quarry would result in a number of environmental impacts, most of which would be reduced to a less-than-significant level through implementation of mitigation measures. Significant and unavoidable impacts associated with the quarry would include: adverse effects on a scenic vista; degradation of the existing visual character of the site and its surroundings; introduction of new sources of substantial light or glare; long-term increases in reactive organic gases (ROG) and oxides of nitrogen (NO_X); increases in traffic from deterioration of levels of service below acceptable levels at roadways or intersections operating at an acceptable level, increases in the volume to capacity ratio at roadways not operating at an acceptable levels of service, and increases in delay by more than five seconds at unsignalized intersections; and potential increases in accidents between haul trucks and cars.

The Teichert Quarry project DEIR includes the following cumulatively significant and unavoidable impacts: alteration of the visual character of the SPA and visual incompatibility with surrounding land uses in the vicinity of the SPA; introduction of new sources of substantial light or glare in the vicinity of the SPA; conversion of agricultural lands to nonagricultural uses; long-term degradation of regional air quality; cumulative impacts on biological resources from buildout of Sacramento County; increases in traffic from deterioration of levels of service below acceptable levels at roadways or intersections operating at an acceptable levels, increases in the volume to capacity ratio at roadways not operating at an acceptable levels of service, increases in density on a segment of U.S. 50 operating at unacceptable levels of service without the Teichert project, and increases in delay by more than five seconds at unsignalized intersections; increases in accidents between haul trucks and cars; and increases in greenhouse gas emissions.

WALLTOWN QUARRY

The proposed Walltown Quarry project would be located south of White Rock Road and east of Scott Road approximately 1.2 miles south of the SPA. The quarry site is approximately 1,360 acres in size and the active mining and processing area would be approximately 613 acres. The quarry project includes a new access road on an existing right of way that would extend from the quarry property north to White Rock Road. The quarry project would generally involve excavation and processing of hard rock aggregate. The project includes a request for a 100-year mining permit with a maximum annual production rate of 6 million tons. The mining would result in an open pit averaging 350 feet deep. The proposed reclamation plan for the Walltown Quarry project anticipates a lake in the mining pit as the end use, with a return to seasonal grazing on the other areas of the site. (Sacramento County 2007a:NOP-2.)

An NOP for the proposed Walltown Quarry project was prepared by Sacramento County and circulated for public review in December 2007. The requested entitlements for the Walltown project are the following: a General Plan Amendment and rezoning, a use permit to allow quarry mining and processing of materials, a reclamation plan, an encroachment permit, and a development agreement (Sacramento County 2007a:NOP-3). Potentially significant

environmental impacts associated with development of this site, as identified in the Walltown Quarry project NOP, include impacts on land use, traffic, air quality, drainage and hydrology, water quality, biological resources, noise, geology, aesthetics, and cultural resources.

DESILVA-GATES QUARRY

The proposed DeSilva-Gates Quarry site is located approximately 3.7 miles south of the SPA near the eastern Sacramento County line. Hard rock mining and reclamation would occur on approximately 480 acres within the 3,000-acre Barton Ranch property. Mining permits would allow for up to 6 million tons of rock aggregate production per year over 100 years (Sacramento County 2008c: NOP-3). The City and USACE understand that DeSilva-Gates recently withdrew its application for this project; however, in order to be conservative for purposes of this analysis, it is assumed that DeSilva-Gates quarry project will still go forward in the future with a different project applicant. Therefore, this quarry project is included in this cumulative analysis.

An NOP for the proposed DeSilva-Gates Quarry project was prepared by Sacramento County and circulated for public review in January 2008. The requested entitlements for the DeSilva-Gates Quarry project are the following: a General Plan amendment and rezoning, a use permit to allow quarry mining and processing of materials, a reclamation plan, an encroachment permit, and a development agreement (Sacramento County 2008c:NOP-3). Potentially significant environmental impacts associated with development of this site, as identified in the DeSilva-Gates Quarry project NOP, include impacts on land use, traffic, air quality, drainage and hydrology, water quality, biological resources, noise, geology, aesthetics, and cultural resources (Sacramento County 2008c:NOP-8). Although it is assumed that a different quarry project applicant will come forward in the future, it is reasonably forseeable that the same types of impacts identified in the NOP discussed above would occur regardless of which entity were operating the quarry project.

4.1.6 REGIONAL PLANNING ENVIRONMENT

Because the "Land" and "Water" portions of the project are influenced by regional development activities, the plan approach is also used to allow a cumulative analysis on this regional scale. The regional cumulative analysis area covers the incorporated and unincorporated areas of Sacramento County, western El Dorado County, the City of Folsom, the City of Rancho Cordova, and the Natomas Basin. This analysis includes an evaluation of the *Sacramento County General Plan* (Sacramento County 1993), *El Dorado County General Plan* (2004), the *City of Folsom General Plan* (1988), the City of Rancho Cordova General Plan (2006), the SACOG Sacramento Region Blueprint and Preferred Blueprint Scenario (SACOG and Valley Vision 2004b), Sacramento International Airport Master Plan, the Natomas Joint Vision Plan, and the Long-term CVP and SWP Operations Criteria Plan (OCAP). A summary of the cumulative planning environment in Sacramento County, El Dorado County, the Natomas Basin and the Cities of Folsom and Rancho Cordova that is used for the regional cumulative impact analysis is provided below.

SACRAMENTO COUNTY GENERAL PLAN

1993 Sacramento County General Plan

The Sacramento County General Plan provides for growth and development in the unincorporated area through 2010. Portions of the Sacramento County General Plan contain policies for urban development including urban communities and the infrastructure necessary to serve them. Other sections of the Sacramento County General Plan describe strategies to recognize and preserve areas of open space and natural resources. As a whole, the general plan reflects a balance between the amount and location of land uses in urban areas and those to remain in a rural or natural setting.

Community plans reflect the goals and policies of individual communities and guide land use and development of specific communities on a more detailed basis than the general plan. Sacramento County has adopted the

following community plans: Antelope, Arden-Arcade, Carmichael, Cordova, Delta, Fair Oaks, North Highlands/Foothill Farms, Orangevale, Rio Linda/Elverta, Southeast, South Sacramento, and Vineyard. Specific plans are detailed policy plans that identify allowable land uses and infrastructure needs for a specific geographic area and are most often used to comprehensively plan for development of new growth areas. Sacramento County has adopted the following specific plans: East Antelope, Elverta, Mather, and North Vineyard Station. (Sacramento County 2007b.)

In addition to community and specific plans, the Sacramento County General Plan identifies Commercial Corridor Plans that focus on planning for future improvements within specified commercial and transportation corridors on a more detailed basis than the general plan; Special Planning Areas that impose a "special" set of development standards for select areas that have unique qualities; and Neighborhood Preservation Areas, which are special zoning regulations that are adopted to preserve the unique qualities and characteristics of a neighborhood (Sacramento County 2007a).

The Sacramento County General Plan designates two boundaries that guide policies for growth within the county. The USB is the boundary of the urban area in the unincorporated County. It is a permanent boundary that will not be modified except under extraordinary circumstances and will be used as a planning tool for urban infrastructure providers for developing very long-range master plans that would accompany future urbanization. (Sacramento County 2009:3-11.)

The Urban Policy Area (UPA) defines the area expected to receive urban levels of public infrastructure and services within the 20-year planning period of the Sacramento County General Plan. The UPA provides the geographic basis for infrastructure master plans, particularly for public water and sewage, which require large capital investments and relatively long lead times for the installation of capital improvements. (Sacramento County 2009:3-11.)

SACRAMENTO COUNTY GENERAL PLAN UPDATE

The existing horizon of the Sacramento County General Plan ends in 2010, and the process to update the Sacramento County General Plan was initiated in 2002. In June 2007, Sacramento County prepared a draft general plan and began conducting an environmental review of the Sacramento County General Plan update. An NOP was prepared and circulated for public review in August 2007 (State Clearinghouse Number 2007082086). The DEIR for the general plan update was released on May 1, 2009, for a 45-day public review period. Adoption of the updated general plan is anticipated in mid 2010 (Sacramento County 2010).

The Sacramento County General Plan update will have a planning horizon of 2030, which is consistent with the planning horizons of SACOG's Sacramento Region Blueprint. The Sacramento County General Plan update contains objectives and policies that are intended to guide the County toward a more compact urban character by concentrating growth within existing urbanized areas and strategically located new growth areas, thereby using land resources as efficiently as possible (Sacramento County 2007b).

EL DORADO COUNTY GENERAL PLAN

The El Dorado County General Plan (2004) establishes a land use development pattern that makes the most efficient and feasible use of existing infrastructure and public services, defines those characteristics that make the County rural, provides guidelines for new and existing development that promotes a sense of community and maintains a rural quality of life, and provides opportunities for positive economic growth.

The general plan delineates areas where future higher density growth and urban/suburban-like activities are anticipated or will be directed. These areas may be defined as the expansion of existing communities within Community Regions and Rural Centers or the projected locations of Rural Regions and Planned Communities. The designations of Community Regions and Rural Center are applied to existing communities that contain the

highest concentration of high- and medium-density residential uses and commercial lands. Community Regions, which include Camino/Pollock Pines, El Dorado Hills, Cameron Park, El Dorado, Diamond Springs, Shingle Springs, and the City of Placerville, are existing larger communities that generally have well-developed infrastructure. Rural Centers are smaller communities, including Coloma, Cool, Georgetown, Grey's Corner, Grizzly Flat, Kelsey, Kyburz, Latrobe, Oak Hill, Phillips, Pilot Hill, Pleasant Valley, and Chrome Ridge, that provide limited services but are focal points for the surrounding rural areas. The designation of Rural Regions and Planned Communities is applied to the remaining unincorporated area and are identified as potential areas of future development. (El Dorado County 2004: 9.)

SUTTER COUNTY GENERAL PLAN

The Sutter County General Plan, adopted in 1996 and most recently amended on December 19, 2006, includes goals, objectives, and policies for the unincorporated areas of the county. The broad purpose of the Sutter County General Plan is to express policies that will guide decisions on future growth, development, and conservation of resources in a manner consistent with the goals and quality of life desired by the county's residents.

SUTTER COUNTY GENERAL PLAN UPDATE

In 2007, Sutter County began a work program to update the 1996 general plan. Thus far, the County has completed a number of public meetings related to the update. In February 2008, the County released the General Plan Update Technical Background Report (Sutter County 2008), which is available on the county's Web site. The technical background report includes an assessment of the current conditions, including the county's land use, economy, housing, and circulation systems. This information will be used as the basis for the development of the updated general plan, as well as preparation of the EIR for the plan. The County is currently preparing an EIR for the general plan update that is anticipated to be released for public review in 2010.

CITY OF FOLSOM GENERAL PLAN

The City General Plan provides for physical, economic, and environmental growth of the City. The City's General Plan is oriented toward the physical development of land uses, a circulation network, and supporting public facilities and services. As a whole, the general plan is intended to retain and enhance Folsom's quality of life, separate identity, and sense of community.

CITY OF RANCHO CORDOVA GENERAL PLAN

The City of Rancho Cordova General Plan serves as a compass to guide planners, the general public, and decision makers on the desired pattern of development in Rancho Cordova. It describes both existing and future land use activity, the latter of which was designed to achieve the city's long-range goals for physical development. The General Plan identifies the distribution, location, and intensity of all land use types throughout the city.

SACRAMENTO AREA COUNCIL OF GOVERNMENTS SACRAMENTO REGION BLUEPRINT

The SACOG Sacramento Region Blueprint depicts a way for the region to grow through the year 2050 as the current population of 2 million increases to more than 3.8 million, the number of jobs increases from 921,000 to 1.9 million, and the amount of housing increases from 713,000 to 1.5 million units (inclusive of the development described above). In December 2004 the SACOG Board of Directors adopted the Preferred Blueprint Scenario, a vision for growth that promotes compact, mixed-use development and more transit choices as an alternative to low-density development. The Preferred Blueprint Scenario predicts that undertaking a realistic long-term planning process will result in long-term environmental benefits and avoidance of impacts; these benefits are intended to minimize the extent of the inevitable physical expansion of the overall regional urban area. As a result, natural resources that might be lost under a traditional approach would be protected because less land would be required for urban uses and less agricultural land would be converted. In addition, the Preferred

Blueprint Scenario predicts less time per person devoted to travel, fewer car trips, and fewer miles traveled to work and local businesses. The reduction in traffic compared with what would occur under traditional patterns would lead to long-term reductions in air quality emissions in the region by reducing the amounts of vehicular carbon monoxide (CO) and particulate matter that would otherwise be emitted under traditional, lower density development patterns. (SACOG and Valley Vision 2004b.)

Although it is only advisory, the Blueprint provides policy guidance in the Sacramento region for long-term regional land use and transportation planning. A number of jurisdictions either are adopting the Blueprint concepts or are considering and encouraging projects consistent with the Blueprint. Although not establishing "buildout targets," the SACOG Blueprint Preferred Scenario anticipates an additional 24,400 households and 31,700 jobs in Folsom between 2000 and 2050 (SACOG and Valley Vision 2004c). With regard to the Folsom South of U.S. 50 Specific Plan project, the SACOG Blueprint Preferred Scenario anticipates approximately 12,000 households and 7,500 jobs would be generated by development of the SPA (City of Folsom 2007). The Blueprint assumes the city would have a population of 105,000 by 2050 and most of this growth would be located on vacant land within the current city boundaries and within the SPA. Further, the Blueprint anticipates the SPA would provide open space consistent with City policies and would be developed primarily with housing in similar amounts of detached and attached single-family units, rowhouses, townhomes, condominiums, and apartments to provide housing opportunities for the city's growing employment centers. (See Exhibit 3.10-2 in Section 3A.10, "Land Use and Agricultural Resources.").

SACRAMENTO INTERNATIONAL AIRPORT MASTER PLAN

The Sacramento International Airport Master Plan (Sacramento County Airport System 2007a) was adopted by the Sacramento County Board of Supervisors in August 2007. This plan represents the first full-scale master planning effort for the Airport since the mid-1970s. The master plan includes an evaluation of current conditions; definition of objectives, obstacles, and alternatives; an extensive public involvement program; and an implementation plan. The master plan is intended to guide airport development for at least the next 20 years. Phase 1 of the Master Plan (2007–2013) has been permitted and is under construction within the southern portions of "Zone 1" of the "Water" Study Area.

NATOMAS JOINT VISION PLAN

The Natomas Joint Vision Plan is a collaborative effort between the City and County of Sacramento to develop a vision for the area of the County known as Natomas. The Natomas Joint Vision Plan Project Area covers a contiguous land area of approximately 20,000 acres in the unincorporated northwestern area of Sacramento County, north of the city of Sacramento, and includes large sections of land within the south-eastern portion of NCMWC's service area. The joint vision strategy is grouped into five major phases, with Phase 1 complete, and Phase 2, outreach, currently in process. Phase 3 of the vision strategy will include a General Plan Amendment, and an amendment to City of Sacramento's Sphere of Influence. Phases 4 and 5 would consist of the eventual annexation and development of the vision area. Although the Natomas Joint Vision is not a specific development proposal, but rather would consist of numerous individual development projects, this planning process is integral to future development within the Natomas Basin and, therefore, the City considered this planning process as part of its cumulative analysis for Zone 1 of the "Water" Study Area.

An EIR is currently in preparation for use by the City, County, and LAFCo in their evaluation of the effects of the City of Sacramento's SOI amendment and necessary text and map amendments to both the City of Sacramento and Sacramento County General Plans. The EIR is being prepared jointly by LAFCo and the City of Sacramento as co-lead agencies with the County participating as a responsible agency. The draft EIR has been delayed pending the development of a more precise project description.

LONG-TERM CENTRAL VALLEY PROJECT AND STATE WATER PROJECT OPERATIONS CRITERIA AND PLAN

The CVP/SWP OCAP consists of the continued operation of the CVP and SWP and includes the operation of the temporary barriers project in the south Delta and the 500 cubic feet per second increase in SWP Delta export limit July through September. In addition to current day operations, several other actions are included in the OCAP and the supporting Biological Opinion (BO) issued by the National Marine Fisheries Service (NMFS) as part of the Section 7, Federal Endangered Species Act consultation. These actions include the following improvements: (1) an intertie between the California Aqueduct and the Delta-Mendota Canal (DMC); (2) the operation of permanent gates, which will replace the temporary barriers in the South Delta; (3) changes in the operation of the Red Bluff Diversion Dam (RBDD); and (4) Alternative Intake Project for the Contra Costa Water District.

According to the OCAP, the CVP has 253 water service contracts (including Sacramento River Settlement Contracts). These water service contracts have had varying water shortage provisions (e.g., in some contracts, M&I and agricultural uses have shared shortages equally; in most of the larger M&I contracts, agricultural water has been shorted 25% of its contract entitlement before M&I water was shorted, after which both shared shortages equally).

Lastly, the OCAP assumes that annual demands on the American and Sacramento Rivers are estimated to increase from about 324,000 AF in 2005 and 605,000 AF in 2030 without the Freeport Project maximum of 133,000 AF during drier years. In addition, the OCAP accounts for Reclamation's ongoing negotiations relating to the renewal of 13 long-term water service contracts, four Warren Act contracts, and has a role in six infrastructure or Folsom Reservoir operations actions influencing the management of American River Division facilities and water use for local water purveyors including the City, Placer County Water Agency, EID, San Juan Water District, and the Carmichael Water District.

4.1.7 ANALYSIS OF CUMULATIVE IMPACTS

The following sections discuss the cumulative effects anticipated from implementation of the "Land" and "Water" portions of the Folsom South of U.S. 50 Specific Plan project, together with the related projects and regional development, for each of the 16 environmental issue areas evaluated in this EIR/EIS. The analysis conforms with CCR Section 15130 of the State CEQA Guidelines, which specifies that the "discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great a detail as is provided of the effects attributable to the project alone." The Council on Environmental Quality (1997) provides for a similar approach.

AESTHETICS

The visual character of the SPA and Off-site Water Facilities Study Area is characterized by sweeping view of the Central Valley, coupled with the oak woodlands and grass-covered hillsides. This region is part of the Sierra Nevada foothills and the Central Valley, and is exemplary of those landscapes and of resources that are endemic to the area. Nearby planned or approved developments include the Westborough at Easton Specific Plan project to the west; the Promontory, El Dorado Hills, and Bass Lake Specific Plans projects to the northeast; the Valley View Specific Plan project to the east; and the Carson Creek Specific Plan project to the southeast. These projects would substantially change the visual conditions as open viewsheds are replaced by urban development.

At full buildout, the SPA would consist of developed urban land uses with small areas of open space and parks. Implementation of the "Land" portion of the project would substantially degrade this scenic vista, damage the character of the viewshed from a Sacramento County-designated scenic corridor, and alter the visual character of the SPA. Views along nearby roadways, including Scott Road, Old Placerville Road, White Rock Road, Prairie City Road, and U.S. 50, would change to urban land uses. Furthermore, viewsheds that include the SPA are part of thousands of acres of open space that would no longer exist. This area would become of similar visual quality

to nearby developed land, and would no longer be considered a unique or scenic vista. Therefore, the "Land" portion of the project would permanently and substantially alter the scenic vista in the SPA. No feasible mitigation measures are available to reduce impacts associated with the alteration of scenic vistas from project development to a less-than-significant level because project development would result in a permanent, large-scale change.

Although the SPA does not contain, nor is it visible from, a state-designated scenic highway, Scott Road south of White Rock Road is a designated scenic corridor in Sacramento County. The Scenic Highways Element of the Sacramento County General Plan describes views from this roadway to consist of grasslands and cattle-grazing lands. These views are exemplary of rural Sacramento County landscape. Implementation of the "Land" portion of the project would substantially damage views from the portion of Scott Road designated as a scenic corridor through conversion of the existing grassland and cattle grazing land to urban development and the site would no longer provide exemplary views of rural Sacramento County landscape. No feasible mitigation measures are available to reduce impacts associated with the damage of scenic resources within a County-designated scenic corridor to a less-than-significant level.

Nearby planned or approved developments and other development in the project region as a whole would substantially change visual conditions as open viewsheds are replaced by urban development. Increased urban development would also lead to increased nighttime light and glare in the region and more limited views of the night sky and sky glow effects. Views of the SPA and the alternative WTP sites contribute to this change in regional visual conditions, since the SPA and alternative WTP sites would be permanently altered to urban development, substantially degrading viewsheds located on Scott Road, Old Placerville Road, Prairie City Road, White Rock Road, U.S. 50, and for people located within the community of El Dorado Hills, the City of Folsom, the City of Rancho Cordova, and nearby rural residences. After development of the SPA under the "Land" portion of the project and booster pump station and WTP alternatives under the "Water" portion of the project, visual conditions in the SPA, booster pump station, and the WTP alternatives would be similar to existing views of urban settings found elsewhere in the project region. The "Land" and "Water" portions of the project include standards for design, architecture, development, and maintenance thereby ensuring that the general visual quality and character of development under the "Land" and "Water" portions of the project would be consistent with viewer expectations for similar urban environments; however, this would only partially reduce the impacts of degradation of visual character. The effect of these changes, when considering the related projects, on aesthetic resources from past and planned future projects is a cumulatively significant impact.

Assessment of visual quality is a subjective matter and reasonable people may differ as to the aesthetic value of undeveloped grasslands and oak woodlands, and whether development of urban uses in the plan area would constitute a substantial degradation of the existing visual character or quality of the site and its surroundings. Given the large scale of this urban development and the rural nature of its setting, the impacts on visual resources from implementation of the "Land" portion of the project are significant. Although design, architectural, development, and lighting standards are included to ensure that urban development in the plan area and region remains within certain aesthetic guidelines, there is no mechanism to allow implementation of the "Land" portion of the project and the related projects while avoiding the conversion of open space to urban development. Therefore, the change of views in the project region to urban land uses and the associated increase in nighttime light and glare are cumulatively significant and unavoidable impacts. In addition, the incremental contribution of the "Land" portion of the project to these impacts is cumulatively considerable (i.e., significant in and of itself).

Adoption of the Folsom General Plan Amendment (proposed GPA) would result in construction of additional multifamily residential units on infill parcels within the built-up area of the City of Folsom. These urban uses would occur in an infill area already characterized by similar uses. Therefore, the proposed GPA would not contribute to cumulatively considerable visual character or scenic view impacts. However, construction of the additional units under the proposed GPA could considerably contribute to cumulatively significant light and glare impacts.

AIR QUALITY

Both the "Land" and "Water" portions of the project are located in the Sacramento Valley Air Basin (SVAB). Past development in the SVAB combined with meteorological conditions has resulted in significant cumulative impacts on air quality. As described in Sections 3A.2 and 3B.2, "Air Quality," the SVAB is in nonattainment status for ozone and respirable particulate matter with an aerodynamic diameter of 10 micrometers or less (PM_{10}). The air quality impacts of the proposed GPA are included in the analysis of the "Land" portion of the project.

At the local level, the SPA and the Off-site Water Facilities Study Area are located in the jurisdiction of the Sacramento Metropolitan Air Quality Management District (SMAQMD). Under the "Land" portion of the project, all of the off-site elements of the project would also be under the jurisdiction of SMAQMD except the two roadway extensions into El Dorado County, which would be under the jurisdiction of the El Dorado County Air Quality Management District (EDCAQMD).

Temporary, Short-Term Construction Impacts

The "Land" and "Water" portions of the project would result in significant and unavoidable temporary, short-term construction-related air quality impacts even with implementation of all feasible mitigation measures identified in Sections 3A.2 and 3B.2, "Air Quality." Project-generated construction-related emissions would exceed SMAQMD's significance threshold of 85 pounds per day (lb/day) for oxides of nitrogen (NO_X), and substantially contribute to emissions concentrations that exceed the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS) for ozone and PM_{10}. The projected total maximum daily construction emissions for some of the off-site elements would also individually exceed SMAQMD's significance threshold of 85 lb/day for NO_X, and substantially contribute to emissions concentrations that exceed the NAAQS and CAAQS for ozone and PM_{10}.

Assuming that all related projects would also implement all feasible construction emission control measures consistent with respective SMAQMD and EDCAQMD guidelines, construction emissions on some of the related projects may be less than significant, although it is likely that larger projects, such as the Easton and Cordova Hills developments, and other projects identified in Table 4-2, would result in significant and unavoidable air quality impacts on their own. This impact cannot be more precisely determined because the related projects would develop on their own schedules, some of which are not known. It would, thus, be speculative to try to add together the various projects with their differing and changing schedules. However, given the large scale of development that would occur with the related projects, taken in total and combined with the nonattainment status of the SVAB for ozone and PM_{10} and other development that would occur in the SVAB, these cumulative projects would result in a cumulatively considerable construction-related air quality impact. Because implementation of the "Land" and "Water" portions of the project would result in a significant and unavoidable impact from the generation of NO_X, and PM_{10}, the "Land" and "Water" portions of the project would result in a cumulatively considerable incremental contribution to a significant cumulative impact.

Long-Term Operational Impacts

Operation-related activities of the "Land" portion of the project would result in project-generated mass emissions of NO_X that exceed SMAQMD's significance threshold of 65 lb/day. Implementation of mitigation measures contained in Section 3A.2, "Air Quality," would reduce impacts associated with emissions of NO_X, but not to less-than-significant levels. Operation-related activities of the "Water" portion of the project would not result in mass emissions of NO_X that exceed SMAQMD's significance threshold. Related projects would similarly contribute to a degree and their relative level of contribution is generally related to their size. Long-term operational emissions from related projects, considered in light of the nonattainment status of the air basin, would be cumulatively significant. Emissions attributable to the project, plus cumulative development listed on Table 4-2, and emissions from other reasonably foreseeable future projects in SVAB as a whole, would continue to contribute to long-term increases in emissions that would exacerbate existing and projected nonattainment

conditions. Thus, the project would result in a cumulatively considerable incremental contribution to a significant cumulative long-term operational air quality impact.

Toxic Air Contaminants

The "Land" and "Water" project activities related to temporary, short-term construction and long-term operations, could expose nearby existing off-site or proposed on-site sensitive receptors to toxic air contaminant (TAC) emissions. TAC emissions associated with temporary, short-term construction activities and stationary sources are site-specific and would be potentially significant for the "Land" and "Water" portions of the project. The proposed on-site commercial and industrial land uses have not yet been identified and could potentially generate substantial volumes of truck activity (e.g., warehouses, distribution centers) that could potentially be in the proximity of nearby sensitive receptors, thereby exposing these nearby on-site receptors to mobile-source TACs. Under the "Land" portion of the project, related impacts associated with on-site mobile source TACs are significant and unavoidable even with implementation of mitigation measures identified in Section A3.2, "Air Quality." Under the "Water" portion of the project, operational emissions associated with the booster pump station and White Rock WTP or Folsom Boulevard WTP facilities could expose sensitive receptors TACs. However, with mitigation, the project would not result in a cumulatively considerable contribution to a significant cumulative impact related to regional mobile source TACs.

Under the "Land" portion of the project, project-related exposure to mobile-source TAC emissions from nearby U.S. 50 and other high traffic-volume roadways are significant and unavoidable, with or without additional quarry truck trips in the local roadway network, and despite implementation of all feasible mitigation measures identified in Section A3.2, "Air Quality." Related projects would also develop land uses that would substantially increase traffic on nearby freeways and subsequently increase emissions of off-site mobile-source TACs. Given the large scale of development that would occur with the related projects, taken in total and combined with the increase in traffic-related pollutant emissions from U.S. 50 and other high traffic-volume roadways, the related projects would result in significant and unavoidable cumulative mobile-source TAC impacts. Therefore, the "Land" portion of the project would result in a cumulatively considerable incremental contribution to a significant cumulative TAC impact related to mobile-source TAC emissions from nearby U.S. 50 and other high traffic-volume roadways. See below for a detailed evaluation of the potential exposure of sensitive receptors in the SPA to TACs generated by quarry truck trips.

Land Use Compatibility with High-Volume Arterial Roadways

According to the land use planning maps for the Proposed Project and the other four "Land" action alternatives (see Chapter 2, "Alternatives"), arterial roadways that carry high volumes of traffic would pass by schools and residential land uses in the SPA. These roadways include segments of Prairie City Road, Oak Avenue, Scott Road, and White Rock Road. These roadways are of particular concern because they may accommodate a disproportionately high volume of diesel-powered truck trips, most of which would be associated with operation of the Teichert Quarry and other sand and gravel quarries south of the SPA. According to the *Draft EIR for the Teichert Quarry General Plan Amendment, Rezone, Use Permit, Reclamation Plan and Development Agreement* (County of Sacramento Department of Environmental Review and Assessment 2008), quarry trucks would travel by or through the SPA to U.S. 50 en route to their final destinations. The Draft EIR for the Teichert Quarry project does acknowledge the development of the SPA, it does not fully analyze the potential impacts of TAC-emitting truck traffic at off-site sensitive receptors, including those planned in the SPA. According to SMAQMD staff, the proportion of diesel trucks on the roadways is important because the volume of diesel trucks is the key variable used to develop the screening levels in SMAQMD's Protocol (DuBose, pers. comm., 2009). In order to understand the effect of the quarry truck traffic on roadways that pass by sensitive receptors, which was not addressed in any previous environmental documentation, the analysis prepared for the Folsom South of U.S. 50 Specific Plan analyzed the TAC impact of projected future travel volumes both with and without additional truck traffic from the nearby quarries. As part of this analysis, an adjustment factor was incorporated to account for the fact that traffic on arterial roadways would travel at lower speeds—and thus have different emission rates—than traffic flowing at typical freeway speeds. In addition, this analysis also examined the projected traffic volumes

using emission rates for the vehicle fleet under existing conditions (year 2010) as well as emission rates projected for the year 2030, when full build out of the project would be completed. According to model runs performed in ARB's Motor Vehicle Emissions Inventory Model (EMFAC2007) (ARB 2006), emission rates from heavy, diesel-powered trucks are expected to be substantially lower in 2030 than 2010. This reflects the fact that emission factors in future years are expected to be lower than current levels because of more stringent vehicle emissions standards, improvements in vehicle emissions technology, and statewide efforts to replace older diesel engines with new or retrofitted, cleaner engines. It is important to consider the emission factors of both the existing and future vehicle fleets in order to understand what the risk levels would be during intermediate years because there is the potential that the daily traffic volumes on roadways would increase considerably before full build out while the emission rates of the vehicle fleet during a particular intermediate year are still relatively high.

Thus, for each road segment that would pass by locations where on-site sensitive receptors would be developed in the SPA, a separate analysis was conducted with and without the additional quarry truck traffic and with existing and future projected emission rates (i.e., for vehicle fleets in 2010 and 2030. The results of the analysis are summarized in Table 4-4. All detailed calculations and assumptions are provided in Appendix C1.

As shown in Table 4-4, all direct impacts associated with TAC exposure levels at receptors along all roadway segments studied for this analysis would be less than significant without the addition of quarry truck trips. No indirect impacts would occur.

However, when quarry truck trips are added to modeled roadway segments before the year 2030, traffic volumes within 400 feet of sensitive receptors that would be constructed in the SPA could result in exposure of those receptors to high levels of toxic air contaminants (see Table 4-4). Therefore, this direct impact would be potentially significant. No indirect impacts would occur.

As discussed above, it is reasonably forseeable that the quarry truck vehicle fleet that would be used from the year 2030 onward would have lower emission factors as compared to current levels because of more stringent vehicle emissions standards, improvements in vehicle emissions technology, and statewide efforts to replace older diesel engines with new or retrofitted, cleaner engines. Therefore, as shown in Table 4-4, modeling results indicate that all direct impacts associated with TAC exposure levels at receptors along all roadway segments studied for this analysis would be less than significant with the addition of quarry truck trips after the year 2030.

Cumulative Mitigation Measure AIR-1-Land: Implement Measures to Reduce Exposure of Sensitive Receptors to Operational Emissions of Toxic Air Contaminants from Quarry Truck Traffic.

The City of Folsom does not have direct jurisdiction over the Teichert, DeSilva Gates, or Walltown quarry project applicants as these projects are located within the unincorporated portion of the County of Sacramento. The City's authority to control the activities of the quarry trucks includes restrictions or actions that would be applicable within the City's jurisdictional boundaries. For example, the City could designate truck routes through the City consistent with California Vehicle Code section 21101(c), including truck routes in the Folsom South of U.S. 50 project area, so as to prohibit or limit quarry trucks' use of City roads adjacent to areas where projected truck traffic volumes would otherwise result in exposure of sensitive receptors to operational emissions of toxic air contaminants from quarry truck traffic and/or traffic safety hazards. If this approach is selected by the City, then prior to the approval of the first tentative subdivision map or any other discretionary project approval that would place sensitive receptors along any roads the quarry trucks could use to access U.S. 50, the City's traffic department and consultants shall analyze and propose to the City Council for approval designated truck routes from the quarries through City jurisdiction to access U.S. 50 that would allow a level of truck traffic that would avoid any potentially significant impact on sensitive receptors from toxic air contaminant emissions within the Folsom South of U.S. 50 project area, as well as any other existing or planned uses that would contain sensitive receptors, so as to ensure that the risk of cancer to sensitive receptors is no more than 296 in one million (or such different threshold of significance recommended by SMAQMD or ARB at the time, if any) as may be determined by a Health Risk Assessment (HRA) paid for by the applicant.

As an alternative to designating truck routes, the following measures could be voluntarily implemented by the quarry project applicant(s) (Teichert, DeSilva Gates, and Granite [Walltown]) to reduce exposure of sensitive receptors to TACs generated by quarry truck traffic and are encouraged:

- The quarry project applicant(s) should meet with the City of Folsom to discuss mitigation strategies, implementation, and cost.

- A site-specific, project-level screening analysis and/or Health Risk Assessment (HRA) should be conducted by the City of Folsom and funded by the quarry truck applicant(s) for all proposed sensitive receptors (e.g., residences, schools) in the SPA that would be located along the sides of roadway segments that are identified in Table 4-4 as being potentially significant under any of the analyzed scenarios. Each project-level analysis shall be performed according to the standards set forth by SMAQMD for the purpose of disclosure to the public and decision makers. The project-level analysis shall account for the location of the receptors relative to the roadway, their distance from the roadway, the projected future traffic volume for the year 2030 (including the proportion of diesel trucks), and emission rates representative of the vehicle fleet for the year when the sensitive land uses would first become operational and/or occupied. If the incremental increase in cancer risk determined by in the HRA exceeds 296 in one million (or a different threshold of significance recommended by SMAQMD or ARB at the time, if any), then project design mitigation should be employed, which may include the following:

    - Increase the setback distance between the roadway and affected receptor. If this mitigation measure is determined by the City of Folsom to be necessary, based on the results of the HRA, the quarry truck applicant(s) should pay the Folsom South of 50 Specific Plan project applicant(s) and the City of Folsom a fee that shall serve as compensation for lost development profit and lost City tax revenues, all as determined by the parties. Said mitigation fee shall be determined in consultation with the quarry project applicant(s), the Folsom South of 50 Specific Plan project applicant(s), and the City of Folsom. No quarry trucks shall be allowed to pass on any roadway segment immediately adjacent to or within the SPA until said mitigation fees are paid.

    - Implement tiered tree planting of fine-needle species, such as redwood, along the near side of the roadway segments and, if feasible, along the roadway 500 feet in both directions of the initial planting (e.g., 500 feet north and south of a roadway that runs east-west) to enhance the dispersion and filtration of mobile-source TACs associated with the adjacent roadway. These trees should be planted at a density such that a solid visual buffer is achieved after the trees reach maturity, which breaks the line of sight between U.S. 50 and the proposed homes. These trees should be planted before occupation of any affected sensitive land uses. This measure encourages the planting of these trees in advance of the construction of potentially affected receptors to allow the trees to become established and progress toward maturity. The life of these trees should be maintained through the duration of the quarry projects. The planting, cost, and ongoing maintenance of these trees should be funded by the quarry project applicant(s).

    - To improve the indoor air quality at affected receptors, implement the following measures before the occupancy of the affected residences and schools:

        – equip all affected residences and school buildings developed in the SPA with High Efficiency Particle Arresting (HEPA) filter systems at all mechanical air intake points to the interior rooms;

        – use the heating, ventilation, and air conditioning (HVAC) systems to maintain all residential units under positive pressure at all times;

– locate air intake systems for HVAC as far away from roadway air pollution sources as possible; and

– Develop and implement an ongoing education and maintenance plan about the filtration systems associated with HVAC for residences and schools.

To the extent this indoor air quality mitigation would not already be implemented as part of the Folsom South of 50 Specific Plan project development, this mitigation should be paid for by the quarry project applicant(s) before any quarry trucks are allowed to pass on any roadway that is within 400 feet of any residence or school within the SPA.

Implementation: The project applicant(s) of the Folsom South of 50 Specific Plan project.

Timing: Prior to approval of first tentative map or discretionary approval within SPA that would place sensitive receptors along roadways that quarry trucks would reasonably use to access U.S. Highway 50.

Enforcement: City of Folsom Community Development Department.

Implementation of Cumulative Mitigation Measure AIR-1-Land would reduce the significant impact related to exposure of project-generated sensitive receptors to toxic air contaminants generated by quarry truck trips to a less-than-significant level because the City would either designate truck routes that would limit or prohibit truck traffic adjacent to sensitive receptors or the City would be able to reach a voluntary agreement with the quarry applicants that would require a site-specific health risk assessment to be performed according to SMAQMD protocol, and in the event the cancer risk would exceed 296 in one million, or whatever threshold of significance is recommended by SMAQMD at the time, either the setback distances of the sensitive receptors from the road would be increased, or fewer quarry trucks would be allowed to pass on the roadways within 400 feet of the sensitive receptors. However, because the City of Folsom does not have jurisdiction over the Teichert, DeSilva Gates, or Walltown quarry project applicants and operations, if the quarry project applicants decline to voluntarily implement the recommended mitigation, the City may adopt truck route restrictions, thereby reducing the impact to a less-than-significant level.

Carbon Monoxide

As described in Sections 3A.2 and 3B.2, “Air Quality,” implementation of the “Land” and “Water” portions of the project would result in less-than-significant local mobile source CO–related air quality impacts. CO emission factors in future years are expected to be lower than current levels due to more stringent vehicle emissions standards and improvements in vehicle emissions technology. Thus, ambient local CO concentrations under cumulative conditions would continue to decline. Therefore, 1- and 8-hour CO concentrations for the future cumulative conditions would not be anticipated to exceed the significance thresholds of 20 parts per million (ppm) and 9 ppm, respectively. Consequently, the “Land” and “Water” portions of the project would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related to increases in traffic volumes on the local roadway network relative to CO concentrations.

Odor Emissions

Odor intensity is a subjective measurement that is perceived differently depending on individual sensitivity. Depending on prevailing wind directions and speeds, odors may be limited to a small area immediately surrounding the source, or may be carried for longer distances to land uses further from the source. Most of the related projects considered in this analysis would result in the generation of odors on a short-term basis from construction activities, and on a long-term basis from operational activities.

Table 4-4
Summary of Roadside TAC Analysis

Road Segment Characteristics	Prairie City Road between Easton Valley Parkway and White Rock Road	Oak Avenue Parkway between Easton Valley Parkway and Road "A"		Oak Avenue Parkway between Road "A" and White Rock Road		Scott Road North between Easton Valley Parkway and Road "A"		Scott Road North between Road "A" and White Rock Road		White Rock Road between Prairie City Road and Scott Road South	White Rock Road between Scott Road South and Oak Avenue Parkway	White Rock Road between Oak Avenue Parkway and Scott Road North	White Rock Road between Scott Road North and Placerville Road
Road segment orientation	north-south	north-south		north-south		north-south		north-south		east-west	east-west	east-west	east-west
Side(s) of road on which project would locate receptors	east side	west side	east side	west side	east side	west side	east side	west side	east side	north side	north side	north side	north side
Setback distance(s) to property line of receptor (feet)	27	33	31	29	27	28	28	28	28	48	48	48	48
Proposed Project Alternative													
No Additional Quarry Truck Traffic													
Existing Vehicle Fleet (Year 2010)	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Year 2030 Vehicle Fleet	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
With Additional Quarry Truck Traffic													
Existing Vehicle Fleet (Year 2010)	PS	PS	PS	LTS	PS	LTS	PS	PS	PS	PS	LTS	LTS	PS
Year 2030 Vehicle Fleet	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Resource Impact Minimization Alternative													
No Additional Quarry Truck Traffic													
Existing Vehicle Fleet (Year 2010)	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Year 2030 Vehicle Fleet	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
With Additional Quarry Truck Traffic													
Existing Vehicle Fleet (Year 2010)	PS	PS	PS	PS	PS	LTS	PS	LTS	PS	PS	PS	PS	LTS
Year 2030 Vehicle Fleet	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Centralized Development Alternative													
No Additional Quarry Truck Traffic													
Existing Vehicle Fleet (Year 2010)	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Year 2030 Vehicle Fleet	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
With Additional Quarry Truck Traffic													
Existing Vehicle Fleet (Year 2010)	PS	PS	PS	PS	PS	LTS	PS	LTS	PS	PS	PS	PS	LTS
Year 2030 Vehicle Fleet	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Reduced Hillside Development Alternative													
No Additional Quarry Truck Traffic													
Existing Vehicle Fleet (Year 2010)	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Year 2030 Vehicle Fleet	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
With Additional Quarry Truck Traffic													
Existing Vehicle Fleet (Year 2010)	PS	PS	PS	PS	PS	LTS	LTS	LTS	PS	PS	PS	PS	LTS
Year 2030 Vehicle Fleet	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
No Federal Action Alternative													
No Additional Quarry Truck Traffic													
Existing Vehicle Fleet (Year 2010)	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Year 2030 Vehicle Fleet	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
With Additional Quarry Truck Traffic													
Existing Vehicle Fleet (Year 2010)	PS	PS	PS	PS	PS	LTS	PS	LTS	PS	PS	PS	PS	LTS
Year 2030 Vehicle Fleet	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS

Notes: PS = potentially significant; LTS = less than significant
Source: Data compiled by AECOM 2010.

Operation-related activities at the proposed on-site industrial and commercial areas could result in project-generated emissions of odors. Specific uses within those designations are not yet known and detailed site and grading plans have not yet been developed; however, these types of uses could entail painting/coating operations (e.g., auto body shops) and fast food restaurants in close proximity to proposed sensitive receptors. Thus, project-generated, on-site operation-related sources could directly expose existing and proposed receptors to emissions of objectionable odors. Implementation of mitigation measures identified in Section A3.2, "Air Quality," would reduce the exposure of sensitive receptors under the "Land" portion of the project to project-generated odor emissions to a less-than-significant level. Operation-related activities of the "Water" portion of the project could result in project-generated emissions of odors from operation of the White Rock WTP or Folsom Boulevard WTP. However, treatment chemicals used in the water treatment processes would be stored in an enclosed building and would not generate odors off-site.

New residents that would be generated by the Eason project immediately west of the "Land" portion of the project could be exposed to odors associated with construction and operation of the project. In addition, new residents that would be generated within the SPA could be exposed to odors generated by the Easton project to the west, by the proposed City Corporation Yard to the south, and by the proposed Sacramento GreenCycle Project further south below the corporation yard. Therefore, the project's odor impacts, when considered in combination with odor impacts of the related projects, could result in cumulatively significant impacts.

BIOLOGICAL RESOURCES

In addition to the related projects considered for all resource areas in this EIR/EIS, the projects identified in Table 4-5 below are also considered in the cumulative analysis for biological resources because the USACE has specifically requested an additional level of detailed cumulative analysis related to biological resources that includes a variety of additional projects to determine cumulative impacts on wetlands and waters of the U.S.

With regards to cumulative impacts related to the proposed GPA, the GPA would change permitted densities, but would not change the physical locations identified for Single Family, Multi-family Medium Density, and Multi-family High Density development in the existing Folsom General Plan. Therefore, for issue areas such as biological resources, which are related to land coverage, there would be change from the analysis already contained in the City's existing General Plan.

Generally, the geographic extent of cumulative impacts on wetlands (e.g., vernal pools, seasonal wetland swales, seeps) and other waters of the U.S. (e.g., perennial and intermittent drainage channels), oak woodlands, and biological resources associated with these habitats includes the vernal pool and blue oak woodland regions of El Dorado County, Sacramento County, and neighboring counties that support similar biological resource values and functions to those of the SPA.

Many projects near the SPA and the Off-Site Water Facilities have been constructed recently or are in various stages of planning and entitlement. Some have already resulted in adverse impacts on wetlands and other waters of the U.S. Tables 4-2 and 4-3 summarize the impacts on water of the United States of the surrounding projects that were considered in the cumulative biological resources impact analysis for the "Land" and "Water" portions of the project.

As indicated in Table 4-5, based on the data currently available, cumulative losses of wetlands and other waters of the U.S., including vernal pools, for specific projects within surrounding areas of Sacramento and El Dorado Counties in the same watershed and supporting similar biological resources have been and are expected to be substantial. Thus, related projects throughout the region would result in a cumulatively significant impact to wetlands and these habitats. Due to its size and large acreage of habitats that would be lost as a result of implementation of the "Land" portion of the project, the "Land" portion of the project would contribute substantially to this regional loss. In addition, because the exact placement of the Folsom Boulevard WTP and

conveyance pipeline alternative alignments has not been determined, the "Water" portion of the project could further contribute substantially to this regional loss.

Table 4-5
Wetlands and Other Waters at Specific Projects in the Vicinity of the Folsom South of Highway 50 Specific Plan

Project	Total Waters of the U.S. (Approximate)	Affected Acres of Waters of the U.S. (Approximate)
Sacramento County		
Anatolia I, II, III, IV	86.43	44.29
Arboretum	116.86	31.75
Arista del Sol	17.41	13.88
Capital Village	None	None
Cordova Hills	103.67	39.4
Creekview Manor	25.90	7.72
DeSilva-Gates Quarry	N/A	N/A
Douglas 98	3.91	3.91
Douglas 103	5.40	1.98
Excelsior Estates	39.81	28.77
Florin-Vineyard Gap	33.46	22.9
Glenborough at Easton and Easton Place	22.90	4.93
Grantline 208	11.19	No net loss
Heritage Falls	6.85	6.85
Mather East	2.68	0.19
Mather Field	138	30
Montelena	16.66	10.605
North Douglas	5.36	6.17
North Douglas II	4.42	0.627
North Vineyard Station Drainage Master Plan	18.10	15.48
Rio del Oro	56.63	30.08
Sunridge Lot J	2.99	2.99
Sunridge Park	1.99	1.81
The Ranch at Sunridge	21.42	15.65
Teichert Quarry	7.41	3.63
Triangle Rock Expansion Project	11.03	9.1
Villages of Zinfandel	1.15	1.15
Vineyard Springs	53.34	16.07
Walltown Quarry	42.9	10.54
Westborough	2.49	2.5
El Dorado County		
Bass Lake	2.99	1.097
Carson Creek	3.49	0.97
El Dorado Hills	28.65	13.73
Valley View	14.47	2.27
Total (Approximate)	**909.96**	**381.039**

Notes:
N/A = Not Available
Source: Data provided by City of Rancho Cordova, USACE, and ECORP

Implementing the Folsom South of U.S. 50 Specific Plan project would result in a cumulatively considerable incremental contribution to the regional loss of the habitat types presented in Table 4-6. Each of these habitats has the potential to support special-status species, as listed in Table 4-6. Therefore, project implementation would result in a cumulatively considerable incremental contribution to the decline of these species in the region.

Table 4-6
Special-Status Species Supported By the Habitat Types to Which the Project Would Contribute a Cumulatively Considerable Incremental Loss

Habitat Type	Special-Status Species Supported
Vernal Pools, Seasonal Wetlands, and Swales	Dwarf downingia
	Tuolumne button-celery
	Bogg's Lake hedge-hyssop
	Ahart's dwarf rush
	Greene's legenere
	Pincushion navarretia
	Slender Orcutt grass
	Sacramento Orcutt grass
	Vernal pool fairy shrimp
	Vernal pool tadpole shrimp
	Western spadefoot toad
	Northwestern pond turtle
Annual Grassland	Swainson's hawk
	White-tailed kite
	Tricolored blackbird
	Grasshopper sparrow
	Burrowing owl
	Northern harrier
	Loggerhead shrike
	American badger
Oak Woodland	Brandegee's clarkia
	Swainson's hawk
	White-tailed kite
	American badger

Source: Data provided by AECOM in 2010

The "Land" and "Water" portions of the project would result in degradation of wildlife habitat by developing new facilities that, when combined with other habitat impacts occurring from development within the region, would result in significant cumulative impacts. Despite the implementation of project-specific measures identified in Sections 3A.3 and 3B.3 "Biological Resources," to mitigate impacts on biological resources, a temporal loss of wetlands and other waters of the U.S. and blue oak woodland would occur during implementation of mitigation until performance standards and success criteria are met. Within the SPA, 84.94 acres of aquatic habitat exists, including vernal pools and other seasonal wetlands, seeps, ponds, and stream channels. Of these, 40.75 acres

(45%) would be permanently destroyed by project implementation. A total 50.7 acres of aquatic habitat occurs within all of Zone 4 of the "Water" Study Area and up to 13.5-acres of this total area could potentially be impacted by one or more of the Off-site Water Facility Alternatives. Off this total, approximately 45.9 acres reside within the Morrison Creek Watershed, while the remaining 4.8-acres occurring with the Coon-American sub-watershed.

It is estimated that 75% to 90% of the historic California vernal pool habitat has been lost. Results of surveys of vernal pool distribution in the Central Valley indicate that 13% of the 1,032,853 acres of vernal pool habitat mapped in 1997 was gone by 2005 (Placer Land Trust 2008). Losses of vernal pool habitat in the project region in that time period were substantial, with Sacramento County losing approximately 6,550 acres and El Dorado County losing approximately 260 acres. In the period between 1994 and 2005, Placer County lost approximately 17,115 acres of vernal pool habitat (Placer Land Trust 2008). In Sacramento County, two large new growth areas—Jackson Highway New Growth Area and Grant Line East New Growth Area—are planned for major urbanization between now and 2030. These two new growth areas support a combined 316 wetted acres of vernal pools that could be converted to urban land uses by the year 2030 (Sacramento County 2009). Full buildout of the City of Rancho Cordova General Plan planning area is projected to convert up to 20,728 acres of vernal pool grasslands containing 630 wetted acres of vernal pools. Historic losses of vernal pool habitat in combination with projected losses from existing, proposed, planned, and approved projects constitute a cumulatively substantial reduction in vernal pool habitat in the region. Habitat losses of this magnitude have a substantial adverse effect on species that rely on this habitat type, including Federally-listed vernal pool crustaceans, and contribute to the decline of these species.

The "Land" portion of the project would fill approximately 24.42 acres of vernal pools, seasonal wetlands, and seasonal wetland swales and would contribute to a cumulative loss of these wetland habitats in the region. Additional aquatic habitats that would be filled consist of 4.48 acres of seeps, 0.07 acre of marsh, 0.11 acre of willow scrub, 10.42 acres of other waters of the U.S. (i.e., ponds, stream channels, and ditches), and 1.25 acres of other aquatic habitats that are not waters of the U.S. (i.e., isolated waters). In addition, the project, when combined with surrounding planned projects, would result in the conversion of large, open habitat landscapes surrounded by other open space to smaller patches of habitat surrounded by urban development. Therefore, aquatic habitats would be confined to small geographic locations and would be more vulnerable to the effect of habitat fragmentation and other indirect impacts.

Implementation of the "Water" portion of the project could result in the fill of additional vernal pools through construction of the WTP alternatives and the conveyance pipeline alternative alignments. Portions of the Zone 4 of the "Water" Study Area within the Morrison Creek watershed include 10.3 acres of vernal pool habitat, 5.8 seasonal wetland, and 0.4 acres of seasonal wetland swale, of which the Off-site Water Facility Alternatives could impact up to 3.4 acres of vernal pools, 2.3-acres of seasonal wetland, and 1.6 acres of seasonal wetland swale within the Morrison Creek watershed. Impacts to these aquatic features as part of the Off-site Water Facility Alternatives would result in impacts to up to 2.9% of vernal pools, 3.8% of seasonal wetlands, and 2.2% of seasonal wetland swales as mapped within the Morrison Creek Watershed. Although, only a small portion of Zone 4 of the "Water" Study Area lies within the Coon-American Watershed, given only limited aquatic resources exist, the corresponding proportion of potential impacts would be greater with 18% of vernal pools, 17.6% seasonal wetlands, and 23.5% of the seasonal wetland swales potentially impacted. These impacts when considered along with the quantity of wetlands and other waters present in the new growth areas of Sacramento County, including Jackson Highway, East of Grant Line Road, and Easton, which are expected to be converted to urban land uses by the year 2030, impacts to wetlands are cumulatively considerable (Sacramento County 2009).

Considering the rate of development in Sacramento County and the limited amount of undeveloped, unspoken for land that supports existing wetlands that could be preserved, or that is suitable for creation of compensatory aquatic habitats similar to those that would be removed by implementation of the "Land" portion of the project, it may not be possible to fully mitigate the loss of habitat functions and values provided by the nearly 41 acres of aquatic habitats that would be lost in the SPA.

Blue oak woodland habitat is rapidly declining in the Sacramento Valley and Sierra Nevada foothill region and a large percentage of previously existing blue oak woodland has already been lost from the region. It is estimated that more than a million acres of California's oak woodlands were lost between 1950 and 1988 (Bolsinger 1988) and another 750,000 acres are at risk of being converted to urban land uses by 2040 (California Oaks Foundation 2006: 6). Some of the largest losses of oak woodland habitat have occurred in areas surrounding or near the SPA in El Dorado and Placer Counties. It is projected that nearly 300,000 acres of oak woodlands could be developed in the Sacramento region by 2040 and the largest anticipated losses of oak woodland in the state are in El Dorado County, which is projected to lose 80% of its oak woodlands by 2040 (California Oaks Foundation 2006: 15). Over half of the existing oak woodlands in Placer, Nevada, and Yuba Counties are at risk of development by 2040 (California Oaks Foundation 2006: 15). Sacramento County supports just over 8,000 acres of oak woodland habitat, 7,250 of which are blue oak woodland. The SPA contains a relatively large percentage (13%) of the county's blue oak woodland habitat with approximately 949 acres. Although the project has been designed to preserve the majority of oak woodland habitat in the SPA, approximately 47% (444 acres) of the existing blue oak woodland community would still be removed. This constitutes a significant contribution to the regional loss of this biological resource, which provides important functions and values to common and special-status plant and animal species and functions in carbon sequestration, and therefore results in a significant contribution to a cumulatively considerable impact.

The "Land" portion of the project would result in the loss of 2,219 acres of annual grassland habitat, which serves as foraging habitat for raptors, including Swainson's hawk, and other grassland associated wildlife species, and nesting habitat for burrowing owl. This loss would contribute significantly to the cumulatively considerable regional loss of this biological resource.

As indicated in Section 3B.3, "Biological Resources - Water," the conveyance pipeline alternative alignments would generally be constructed within existing road rights-of-way and disturbed grasslands, thereby generally minimizing disturbance to sensitive habitats and areas that potentially support special-status species bordering the roadway road rights-of-way. However, it is difficult to predict with certainty the exact placement of the conveyance pipeline within the roadway for each alternative. Based on the use of a 100-foot-wide construction easement, the conveyance pipeline could directly or indirectly affect several Federal and state-listed species that use adjacent seasonal wetlands, vernal pool complexes, annual grasslands, oak savanna, and riparian and other aquatic communities within Zone 4 of the "Water" Facilities Study Area. Without mitigation, construction-related impacts combined with other land development and roadway improvement projects within the conveyance pipeline alternative alignments could be cumulatively considerable.

Implementation of mitigation measures in Section 3A.3, "Biological Resources - Land," would reduce the direct project-specific impacts on valley elderberry longhorn beetle, tricolored blackbirds, bats, special-status plants, riparian habitat, and valley needlegrass grassland to a less-than-significant level under the "Land" portion of the project. Mitigation measures in Section 3B.3, "Biological Resources - Water," would reduce impacts on vernal pool fairy shrimp, western spadefoot toad, northwestern pond turtle, Swainson's hawk, and Sacramento Orcutt grass to a less-than-significant level under the "Water" portion of the project. However, even with implementation of the proposed mitigation and regional enforcement of the USACE "no-net-loss" standard, the value of the region as it relates to the long-term viability of these resources would be substantially diminished. The "Land" and "Water" portions of the project would result in a cumulatively considerable incremental contribution to significant cumulative biological resources impacts, including the loss and degradation of sensitive habitats, habitat for special-status wildlife, and habitat for special-status plants; and loss/ displacement of special-status wildlife.

Fisheries

The assignment of water supplies from NCMWC in the Sacramento River Basin would not adversely affect candidate, sensitive, or special-status fish species. The proposed addition of a new point of diversion and change in CVP delivery schedule as part of the Off-site Water Facility Alternatives are relatively minor when compared

to overall flows in the Sacramento River system, including total Delta inflow and outflow, and Delta CVP and SWP exports. The minor changes in hydrologic conditions would have only very minimal impacts on overall aquatic habitat quantity and quality. As a result, the Off-site Water Facility Alternatives when added to other water supply projects, including the EWA and Yuba River Accord, would result in cumulative benefits to this section of the Sacramento River. Downstream of Freeport, the minor reduction in flows attributed to the Off-site Water Facility Alternatives would be minimized by the addition of flows from other water supply projects considered in the cumulative analysis and the overall change in the delivery schedule. Therefore, the "Water" portion of the project would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related to fisheries.

CLIMATE CHANGE

Emissions of greenhouse gases (GHGs) have the potential to adversely affect the environment because such emissions contribute, on a cumulative basis, to global climate change. The proper context for addressing this issue in an EIR/EIS is as a discussion of cumulative impacts, because although the emissions of one single project will not cause global climate change, GHG emissions from multiple projects throughout the world could result in a cumulative impact with respect to global climate change. In turn, global climate change has the potential to result in rising sea levels, which can inundate low-lying areas; affect rainfall and snowfall, leading to changes in water supply; and affect habitat, leading to adverse effects on biological resources.

Because of the length of the cumulative global climate change analysis, it is presented in this EIR/EIS as a stand-alone section. Accordingly, please see Sections 3A.4 and 3B.4, "Climate Change." Sections 3A.4 and 3B.4 contain an analysis of the projected GHG emissions from the "Land" and "Water" portions of the project with respect to their potential to contribute to global climate change (see Subsections 3A.4.1 in 3A.4). Additionally, Section 3A.4 contains an analysis of the potential effects of global climate change on the "Land" portion of the project based on available scientific data. The development assumptions for the GPA were included in the modeling of impacts described for the "Land" portion of the project.

CULTURAL RESOURCES

The cumulative context for cultural resources is defined as the SPA and the Sacramento Region, including Sacramento and El Dorado Counties and the Cities of Folsom and Rancho Cordova. Cultural resources in the project region generally consist of prehistoric sites, historic sites, historic structures, and isolated artifacts. During the 19th and 20th centuries, localized urbanization and intensive agricultural use in the region caused the destruction or disturbance of numerous prehistoric sites, while many structures now considered to be historic were erected. From the latter half of the 20th century to the present, prehistoric and historic structures have been disturbed and destroyed. During this period, the creation and enforcement of various regulations protecting cultural resources have substantially reduced the rate and intensity of these impacts; however, even with these regulations, cultural resources are still degraded or destroyed as cumulative development in the region proceeds.

The records search conducted for the "Land" portion of the project indicates that the entire SPA has been previously inventoried for cultural resources and that approximately 260 prehistoric and historic-era districts, sites, features, and isolated artifacts have been identified (Appendix E2). Cultural resources identified within the SPA include: (1) traces of early Native American habitation including lithic artifact scatters and bedrock mortars; and (2) the remains of historic-era activities, in particular, those related to Gold Rush-era and later mining operations. The latter consist of the remains of small placer and quartz mines, numerous ditches and remains of similar water conveyance infrastructure, cabin sites, and other structural foundations, tailings piles, and refuse scatters.

Under the "Land" portion of the project, identified resources constitute the remains of a long series of human activities from prehistoric habitation and resource processing, to early historic mining, ranching, and transportation. Although the entire SPA has been subjected to detailed archaeological surveys and historical

investigations, much of this research has been piece-meal. Most of the prehistoric and historic-era resources documented within the SPA have not been formally evaluated for significance per National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR) criteria. Regardless of their association or eligibility, the large number of cultural resources documented indicates thin the SPA has long been the focus of intensive activity for thousands of years and due to its largely intact nature it is unique in the Sacramento/Folsom region. Construction that would be implemented as part of the "Land" portion of the project would likely result in direct adverse impacts to these resources.

The records search conducted for the "Water" portion of the project identified 19 sites that are situated within various portions of the Off-site Water Facilities Study Area (Appendix M). Many of these sites are potentially associated with the American River (Folsom) Placer Mining District. In addition to the sites identified in the records search, the Off-site Water Facilities Study Area also includes portions of White Rock Road, which at one time was part of the Lincoln Highway; a major overland transportation route between Carson City and Sacramento during the Gold Rush era. Construction of the "Water" portion of the project could disturb known cultural and historic resources. Mitigation outlined in Section 3B.2, Cultural Resources - Water," would reduce potentially significant impacts to known cultural resources to a less-than-significant level.

Implementation of mitigation measures identified for the "Land" portion of the project in Section 3A.5, "Cultural Resources," would substantially reduce the level of direct impacts on identified cultural resources, but not to a less-than-significant level. Ground-disturbing work would still result in direct impacts to cultural resources, some of which are likely to be eligible for listing on the CRHR and NRHP. The State CEQA Guidelines (CCR Section 15126.4 [b][2]) state that a project which causes a substantial adverse change in the significance of a unique archaeological resource or an historical resource may have a significant effect on the environment. In some circumstances, depending on the significance of the resource, even the requirement for documentation of an archaeological resource or historical resource may not be sufficient to reduce the impact below the level of significance. Therefore, the "Land" portion of the project would result in a cumulatively considerable incremental contribution to the regional loss of known prehistoric and historic-era sites in the project vicinity.

The density of documented resources within the SPA and in the vicinity of the off-site elements under the "Land" portion of the project suggests that the entire project footprint is also sensitive for previously unidentified and currently unknown cultural resources. As-yet-undiscovered subsurface cultural resources might also underlie the booster pump station site, alternative WTP sites, and conveyance pipeline alternative alignments under the "Water" portion of the project. Mitigation measures contained in Sections 3A.5 and 3B.5, "Cultural Resources," would reduce project-related impacts on as-yet-undiscovered cultural resources to less-than-significant levels. However, undiscovered cultural resources may underlie one or more of the other related project sites, and it is unknown whether the related projects would implement appropriate mitigation. Furthermore, even after mitigation is implemented, it may be impossible to avoid the cultural resource, and a substantial adverse change in the significance of the resource (such as damaging or destroying the qualities that make it significant) could result. Therefore, the related projects could result in potentially significant cumulative impacts on undocumented cultural resources within the project vicinity. In this context, the "Land" and "Water" portions of the project could result in a cumulatively considerable incremental contribution to a significant cumulative impact.

The proposed GPA would change permitted densities, but would not change the physical locations identified for Single Family, Multi-family Medium Density, and Multi-family High Density development in the existing Folsom General Plan. For issue areas (such as cultural resources) that are related to land coverage, there would be no change from the City's existing General Plan.

ENVIRONMENTAL JUSTICE

Past, present, and probable future projects used for this cumulative analysis are restricted to those projects that have occurred or are planned to occur within the Cities of Folsom and Rancho Cordova boundaries, Sacramento County, and El Dorado Hills. According to the Council on Environmental Quality and U.S. Environmental

Protection Agency (EPA) guidelines, a minority population is present in a study area if the minority population of the affected area exceeds 50%, or if the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis. Under the same guidelines, a low-income population exists if a study area is composed of 50% or more people living below the poverty threshold, as defined by the U.S. Census Bureau, or if the percentage of people living below the poverty threshold in the study area is substantially greater than the poverty percentage of the general population or other appropriate unit of geographic analysis.

As discussed in Section 3A.6, "Environmental Justice - Land," no minority population exceeds 50% in Folsom, Sacramento County, or El Dorado Hills. The median household and per capita income and the poverty rate in Folsom and El Dorado Hills is less than that of Sacramento County, and the Folsom and El Dorado Hills' median household and per capita income and poverty rate is not meaningfully greater than the county's rate. Therefore, Implementation of the "Land" portion of the project would not cause a disproportionately high and adverse impact on minority and low-income populations.

A portion of the alternative conveyance pipeline alignments under the "Water" portion of the project would cross through an area identified as a low-income community south of Mather Airport. Poverty rates for this area are expected to decrease substantially as a result of new development and redevelopment activities with implementation of the *Mather Airport Master Plan.* In addition, these conveyance pipeline alternative alignments would be underground and would not create a nuisance or other adverse effects on low-income and minority populations.

Therefore, the "Land" and "Water" portions of the project and related projects would not contribute to disproportionate placement of environmental impacts on low-income and minority populations or communities and no cumulatively considerable impacts would result.

GEOLOGY, SOILS, MINERALS, AND PALEONTOLOGICAL RESOURCES

Geology and Soils

The "Land" and "Water" portions of the project and the related projects are located within the western margin of the Sierra Nevada foothills and the eastern margin of the Sacramento Valley. The geologic formations and soil types vary depending on project location, and therefore are site-specific. The SPA is not underlain by or adjacent to any known faults; however, structures in the SPA could be subject to seismic ground shaking from an earthquake along active faults in Lake Tahoe. In addition, the SPA is underlain by expansive soils and subject to seasonal subsurface water flows from surface infiltration that could adversely affect development. The booster pump station, alternative WTP sites, and alternative pipeline conveyance alignments under the "Water" portion of the project are also subject to seismic ground-shaking and underlain by expansive soils as wells as corrosive soils. Implementation of mitigation measures contained in Sections 3A.7 and 3B.7, "Geology, Soils, Minerals, and Paleontological Resources," would reduce these impacts to less-than-significant levels through completion of site-specific geotechnical studies and implementation of construction and design measures developed in response to the studies, in addition to compliance with the California Building Standards Code.

Implementation of the various related projects and other projects in the region could expose additional structures and people to seismic and soils hazards. However, each project considered in this cumulative analysis must individually meet building code requirements as well as the requirements of local policies (i.e., grading and erosion control plans), and therefore no additive effect would result and no cumulatively considerable impact related to seismic or soil hazards would occur. Implementation of the "Land" and "Water" portions of the project would not create additional facilities under increased risk of hazards and would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related to geology and soils. The proposed GPA would change permitted densities, but would not change the physical locations identified for Single Family, Multi-family Medium Density, and Multi-family High Density development in the existing

Folsom General Plan. For issue areas (such as geology, soils, minerals, and paleontological resources) that are related to land coverage, there would be no change from the City's existing General Plan.

Mineral Resources

The presence of mineral resources is dependent on the type of geologic formation, which varies from location to location and therefore is site-specific. Some of the related projects contain sources of aggregate materials. None of the related projects contain potential sources of kaolin clay. The majority of the SPA is classified by the California Division of Mines and Geology (CDMG) as Mineral Resource Zone (MRZ) MRZ-3 for construction aggregate, "areas containing mineral deposits, the significance of which cannot be evaluated from existing data." The western third of the SPA contain areas where piles of cobbles were deposited during dredger gold mining operations in the 1800s and early 1900s. Similar piles of dredge tailings are present in nearby areas of Rancho Cordova, which are actively being mined, and the proposed Teichert, Walltown, and DeSilva-Gates quarries south of White Rock Road are proposed for mining as an aggregate sand and gravel resource. However, the on-site dredge tailings are located primarily within the Alder Creek drainage. Alder Creek is a perennial watercourse, and its drainage and riparian resources are protected by both Sacramento County and City of Folsom General Plan policies and ordinances. Furthermore, in 2003, the City of Folsom determined that because it did not have any active mining operations, and because none were expected in the future, that it would not update its California Surface Mining and Reclamation Act ordinance. The SPA is not delineated as an area of known mineral resources in either the City of Folsom or Sacramento County General Plans. Finally, the Alder Creek dredge tailings are not present in a large enough concentration that would warrant an economically viable on-site mining operation. Therefore, implementation of the "Land" portion of the project would not contribute substantially to a regional loss of aggregate sand and gravel resources and would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related to these mineral resources.

The western edge of the SPA is zoned MRZ-3 for kaolin clay in an area that roughly corresponds to the location of the Ione Formation in the SPA. The Ione Formation is known to contain kaolin clay in other locations in northern California (i.e., Amador County). Currently it is unknown whether or not an economically valuable deposit of kaolin clay is present. If it were present, the deposit would be unavailable for mining following project implementation, because urban development is planned throughout the area where the Ione Formation occurs in the SPA. Mitigation measures in Section 3A.7, "Geology, Soils, Minerals, and Paleontological Resources - Land," would require studies to determine whether or not an economically valuable source of kaolin clay is present in the SPA. However, this mitigation would not reduce the level of impacts associated with the loss of kaolin clay, if it is present. The only occurrence of the Ione Formation in Sacramento County is located in the SPA. However, the Ione Formation occurs in other locations along Sierra Nevada foothills south of the SPA, from Amador County to Camanche Reservoir in Calaveras County. Kaolin clay is being mined at several locations within the Ione Formation in Amador County. Because the deposits of kaolin clay in the state occur in a very limited geographic area, the "Land" portion of the project could result in a cumulatively considerable incremental contribution to a significant cumulative impact (if kaolin clay is present in the SPA).

A review of available Sacramento County mineral resource maps indicates that facilities proposed as part of the "Water" portion of the project would not impede access to these delineated mineral resources within the eastern portions of Sacramento County. Although portions of the conveyance pipeline alternative alignments would travel in close proximity to several areas identified as containing mineral resources classified as MRZ-2; given that these alignments would be confined to the existing roadway rights-of-way, their location would not contribute to any increased losses in the availability of known mineral resources. Therefore, the "Water" portion of the project would have no impacts related to mineral resources and no cumulatively considerable impacts would occur.

Paleontological Resources

Fossil discoveries resulting from excavation and earth-moving activities associated with development are occurring with increasing frequency throughout the state. The value or importance of different fossil groups varies

depending on the age and depositional environment of the rock unit that contains the fossils, their rarity, the extent to which they have already been identified and documented, and the ability to recover similar materials under more controlled conditions (such as for a research project). Unique, scientifically-important fossil discoveries are relatively rare, and the likelihood of encountering them is site-specific and is based on the type of specific geologic rock formations found underground. These geologic formations vary from location to location.

A records search of the University of California Museum of Paleontology's Paleontology Collections database in Berkeley, California, did not identify any previously recorded fossil localities within the SPA or within the alternative WTP sites or conveyance pipeline alternative alignments. Most of the SPA and the off-site elements are underlain by the Salt Springs Slate, Copper Hill Volcanics, and Gopher Canyon Volcanics. Because of the way in which these rocks formed, they would not contain vertebrate fossils or fossil plant assemblages. However, the western edge of the SPA is underlain by Eocene-age sediments of the Ione Formation, the off-site detention basin west of Prairie City Road would be located within the Mehrten Formation, and the Off-site Water Facilities Study Area would include elements in the Riverbank, Ione, and Mehrten Formations. Because of the large number of fossils that have been recovered from the Mehrten, Ione, and Riverbank Formations throughout the Central Valley, they are considered paleontologically sensitive rock units, thus suggesting that there is a potential for uncovering additional similar fossil remains during construction-related earthmoving activities in these formations in the SPA and off-site detention basin. Mitigation measures are contained in Sections 3A.7 and 3B.7, "Geology, Soils, Minerals, and Paleontological Resources," that would reduce impacts on previously undiscovered paleontological resources to less-than-significant levels.

When unique, scientifically-important fossils are encountered by construction activities, the subsequent opportunities for data collection and study generally provide a benefit to the scientific community. Therefore, because of the site-specific nature of unique paleontological resources; the low probability that any project would encounter unique, scientifically-important fossils; and the benefits that would occur from recovery and further study of those fossils if encountered, development of the related projects and other development in the region are not considered to result in a cumulatively considerable impact related to paleontological resources. Therefore, the "Land" and "Water" portions of the project would not result in a cumulatively considerable contribution to a significant cumulative impact related to paleontological resources.

HAZARDS AND HAZARDOUS MATERIALS

Health and safety impacts associated with the past or current uses of a project site usually occur on a project-by-project basis, rather than in a cumulative nature. Implementation of the "Land" and "Water" portions of the project could result in hazards and hazardous materials impacts related to exposure to on-site hazardous materials during construction development on a known hazardous materials site, and exposure to wildland fires. Within the SPA, impacts related to potential blast-related injuries during construction, exposure to electric and magnetic fields, and public health hazards from mosquitoes attracted by water features could occur. Construction of the "Water" alternatives could result in interference with adopted emergency response plans. However, mitigation measures identified in Sections A3.8 and B3.8, "Hazards and Hazardous Materials," would reduce the project-specific health and safety hazards to less-than-significant levels. Under cumulative conditions, implementation of the "Land" and "Water" portions of the project in conjunction with development of related projects is not anticipated to present a public health and safety hazard to residents.

The "Land" and "Water" portions of the project and related projects would all involve the storage, use, disposal, and transport of hazardous materials to varying degrees during construction and operation. Impacts from these activities are less than significant for the project because the storage, use, disposal, and transport of hazardous materials are extensively regulated by various Federal, state, and local laws, regulations, and policies. It is foreseeable that the project and the related projects would implement and comply with these existing hazardous materials laws, regulations, and policies. Therefore, the related projects would not cause a cumulative impact, and the "Land" and "Water" portions of the project would not result in a cumulatively considerable incremental contribution to a cumulative impact related to transport of hazardous materials. The proposed GPA would change

permitted densities, but would not change the physical locations or land uses identified for Single Family, Multi-family Medium Density, and Multi-family High Density development in the existing Folsom General Plan. For issue areas (such as hazards and hazardous materials) which are related to land coverage, there would be no change from the City's existing General Plan.

HYDROLOGY, WATER QUALITY, AND GROUNDWATER RESOURCES

Local hydrology, drainage, and water quality conditions are often affected by regional activities, in addition to local activities and related projects. Past and present projects from the Sierra Nevada (dams and reservoirs, mining operations, logging, urban development) to the Sacramento–San Joaquin Delta (water supply diversions, agricultural diversions, flood control projects, urban development, river channelization) affect hydrology and water quality conditions in Sacramento and El Dorado Counties. The following evaluation of cumulative hydrology and water quality impacts is made in light of the extent to which local and regional activities can affect hydrologic conditions in these counties. Implementation of the "Land" use portion of the project focuses on effects on water bodies in the project vicinity and immediately upstream and downstream and how the project and related projects may affect the hydrology and water quality conditions locally. The "Water" portion of the project includes water supply projects and larger statewide planning efforts that could substantially influence cumulative operational conditions along the Sacramento River. The potential cumulative impacts are discussed in detail below.

The proposed GPA would change permitted densities, but would not change the types of uses or physical locations identified for Single Family, Multi-family Medium Density, and Multi-family High Density development in the existing General Plan. For issue areas (such as hydrology and water quality) which are related to land coverage or type of use, there would be no change from the City's existing General Plan.

Surface Water Quality

Construction activities during implementation of the "Land" and "Water" portions of the project would involve extensive grading and movement of earth. Substantial construction-related alteration of on-site drainages could result in soil erosion and stormwater discharges of suspended solids, increased turbidity, and potential mobilization of other pollutants from project-related construction sites. This contaminated runoff could enter Alder Creek, Buffalo Creek, Coyote Creek, Carson Creek, or other on-site drainage channels and ultimately drain off-site. Intense rainfall and associated stormwater runoff in relatively flat areas could result in short periods of sheet erosion within areas of exposed or stockpiled soils. If uncontrolled, these soil materials could cause sedimentation and blockage of drainage channels. Accidental spills of construction-related contaminants, such as fuels, oils, paints, solvents, cleaners, and concrete, could occur during construction activities in the SPA, resulting in surface soil contamination. The "Land" and "Water" portions of the project must prepare a storm water pollution prevention plan (SWPPP) consistent with the existing statewide National Pollutant Discharge Elimination System (NPDES) discharge permits from the Central Valley Regional Water Quality Control Board (RWQCB). Implementation of these regulatory requirements in addition to mitigation in Sections 3A.9 and 3B.9, "Hydrology and Water Quality," would reduce the potentially significant water quality and erosion impacts from construction activities to a less-than-significant level. Although there are no assurances that the related projects would incorporate the same degree or methods of treatment as the project, each related project that would discharge stormwater runoff would be required to comply with NPDES discharge permits from the Central Valley RWQCB. Therefore, the "Land" and "Water" portions of the project would not result in a cumulatively considerable incremental contribution to a significant cumulative impact.

Implementation of the "Land" and "Water" portions of the project would create new impervious surfaces and landscape features that would increase the volume of runoff that could cause or contribute to long-term discharges of urban contaminants (e.g., sediment, oil and grease, fuel, trash, pesticides, fertilizer). This increase in impervious surface would increase the peak discharge rate of stormwater runoff generated in the SPA and from areas upstream (e.g., contribution of flow from off-site watersheds to Alder Creek within the SPA). Under the

"Water" portion of the project, all drainage runoff from the alternative WTP sites would enter Buffalo Creek, which flows west and is tributary to the Lower American River. The Low Impact Development (LID) principles summarized in Section 3A.9, "Hydrology and Water Quality - Land," and conformance with applicable state and local regulations regulating surface water runoff, including the procedures outlined in the Sacramento City/County Drainage Manual and the El Dorado County Storm Water Management Plan, would reduce potential water quality and erosion impacts from an increase in stormwater runoff to a less-than-significant level. Under the "Water" portion of the project, implementation of mitigation measures in Section 3B.9, "Hydrology and Water Quality - Water," and conformance with applicable state and regulations regulating surface water runoff, including the procedures outlined in the Sacramento City/County Drainage Manual, would reduce the impacts to a less-than-significant level. Although there are no assurances that the related projects would incorporate the same degree or methods of treatment as the project, each related project that would discharge stormwater runoff would be required to comply with NPDES discharge permits from the Central Valley RWQCB, which adjusts requirements on a case-by-case basis to avoid significant degradation of water quality. Therefore, the "Land" and "Water" portions of the project would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related to surface water quality.

Implementation of the "Land" portion of the project would convert a large area of undeveloped land to residential and commercial uses, thereby changing the amount and timing of potential long-term waste discharges in stormwater runoff to Alder Creek, Buffalo Creek, Coyote Creek, Carson Creek, and other drainages on- and off-site. The storm drainage system for the project is designed to direct runoff flows into on-site detention basins (and one off-site basin west of Prairie City Road), and would incorporate water quality treatment. Under the "Water" portion of the project, storm drainage system for the White Rock WTP or Folsom WTP would be incorporated into project designs. The incorporation of LID principles summarized in Section 3A.9, "Hydrology and Water Quality - Land," and conformance with applicable state and local regulations regulating surface water runoff, including the procedures outlined in the Sacramento City/County Drainage Manual and the El Dorado County Storm Water Management Plan, would reduce the potentially significant impact associated with potential long-term water quality effects of urban runoff to less-than-significant levels. Under the "Water" portion of the project, implementation of mitigation measures in Section 3B.9, "Hydrology and Water Quality - Water ," and conformance with applicable state and regulations regulating surface water runoff, including the procedures outlined in the Sacramento City/County Drainage Manual, would reduce the impacts to a less-than-significant level. Therefore, the "Land" and "Water" portions of the project would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related to surface water quality.

Surface Water Flows

The Off-site Water Facility Alternatives, along with other existing, planned, and foreseeable future projects and other changes to water management and system operations (e.g. north of Delta Storage, isolated conveyance), could directly affect Sacramento River flows by diverting water from the Sacramento River, or indirectly by inducing changes in Delta hydrologic conditions that could trigger changes in CVP and SWP reservoir operations and pumping from the south Delta.

Diversion of surface water at Freeport as opposed to NCMWC would not be considered an additional diversion, but rather a modification of an existing diversion under a new M&I delivery schedule. Table 3B.9-3 provides an indication of the changes in monthly diversions on the Sacramento River as a result the changes in the delivery schedule and reduced return flow. As shown, the modeled values indicate only minor fluctuations in monthly river flow would occur in conjunction with cumulative conditions and operation of the "Water" portion of the project. The change in the delivery schedule would require minor changes in releases from upstream CVP facilities, but would not contribute to discernable decreases (<0.04%) in Delta inflow. Therefore, changes in downstream Sacramento River flow would be minor and would not conflict with other water management objectives (e.g. BDCP, OCAP) or beneficial uses (e.g. cold water fisheries).

The amount of carryover storage has an effect on the balance between CVP and SWP long-term average annual and dry year exports. Reduced reservoir carryover storage could result in reduced SWP and CVP water deliveries in subsequent years with certain hydrologic conditions. In the case of the Off-site Water Facility Alternatives, the change to an M&I delivery schedule would incrementally add to carryover storage in CVP reservoirs by reducing diversions in summer months and more evenly distributing demand throughout the year.

Based on the changes in delivery schedule shown in Table 3B.9-3 and related effects to surface flows within the Sacramento River, the impacts of the "Water" portion of the project on hydrologic conditions within the Delta are not expected to adversely affect CVP and SWP reservoir operations or pumping in the south Delta. Because the "Water" portion of the project would not divert more than 10 cubic feet per second on average from the Sacramento River and that this diversion consists of existing CVP contract water, its direct potential maximum effect on flows of the Sacramento River and Delta would be minor. Conceivably, if other water transfer projects are proposed, they could contribute to some extent to further changes in Sacramento River flow. In addition, other larger water supply projects, such as Site Reservoir and the Bay Delta Conservation Plan, could contribute to further reductions in Sacramento River flows in the long-term. However, based on the magnitude of change in river flows associated with the Off-site Water Facility Alternatives, these changes would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related changes in Delta inflow and outflow that could otherwise interfere with any CVP and SWP export diversions.

Flood Protection

The SPA is not in an area protected by levees and is not located within the Folsom Dam inundation zone; however, there are two ponds within the site and one pond upstream of the site. These ponds are formed behind existing on-site dams in topographically low areas along existing drainages. The height of the two dams and/or volume of water in the associated impoundments are unknown. Additionally, evaluation of the dams has not been conducted to determine stability, potential for risk of failure, and/or estimated area of downstream inundation in the event of failure. Implementation of mitigation described in Section 3A.9, "Hydrology and Water Quality - Land," would reduce the potential for increased risk of flooding as a result of dam failure to a less-than-significant-level because the small dams and associated impoundments within and upstream of the SPA meet minimum stability requirements and not exposure of people or structures to a significant risk of flooding.

The SPA is located within an area that at this time is not included in the 200-year floodplain as defined by California Water Code Section 9610[a], pursuant to Senate Bill (SB) 5. Furthermore, site-specific modeling has been performed to determine where the 200-year floodplain in the SPA would be located under pre-development and post-development conditions. Therefore, implementation of the "Land" portion of the project would not subject people and/or structures to impacts related to flooding as a result of a 200-year storm because the project development would comply with SB 5 criteria protecting the proposed development from the 200-year flood.

As discussed in Section 3B.9, "Hydrology and Water Quality - Water," the alternative WTP sites would not be located in a 100-year floodplain. Portions of the conveyance pipeline alternative alignments would be located within a 100-year floodplain; however, these facilities would be located underground. Therefore, the "Water" portion of the project would result in less-than-significant impacts related to the increased risk of flooding and flood hazards.

Some of the related projects in the region may also result in the placement of structures in areas designated as 100- or 200-year floodplains. However, as with the "Land" portion of the project, the related projects would be required by law to comply with all applicable state and local regulations regarding flooding and flooding hazards, including protection of residents and workers from 100- and 200-year flood flows. Therefore, implementation of the related projects would not result in a cumulative impact, and the "Land" portion of the project's contribution to the impact from 100- and 200-year flood flows would not be cumulatively considerable.

Surface Drainage

Implementation of the "Land" portion of the project would convert a large area of undeveloped land to residential and commercial uses, which could substantially alter drainage courses and runoff patterns from existing conditions. Compacting soils and constructing impervious surfaces can reduce the net amount of infiltration of rain water into the soil, thereby increasing runoff rates and volumes. As discussed above, the storm drainage system for the project is designed to direct runoff flows into on-site detention basins (and one off-site basin west of Prairie City Road), and would incorporate water quality treatment. The incorporation of LID principles summarized in Section 3A.9, "Hydrology and Water Quality - Land," and conformance with applicable state and local regulations regulating surface water runoff, including the procedures outlined in the Sacramento City/County Drainage Manual and the El Dorado County Storm Water Management Plan, would reduce the long-term impacts from changes in drainage and runoff patterns in the SPA to a less-than-significant level. As a result, no adverse project-specific impacts would occur.

Under the "Water" portion of the project, operation of the WTP alternatives would contribute additional stormwater runoff to Buffalo Creek, resulting in potential downstream flooding. Implementation of mitigation measures in Section 3B.9, "Hydrology and Water Quality - Water," and conformance with applicable state and regulations regulating surface water runoff, including the procedures outlined in the Sacramento City/County Drainage Manual, would reduce the long-term impacts from changes in drainage and runoff patterns to a less-than-significant level.

In other new developments within Sacramento County, Folsom, and Rancho Cordova, stormwater conveyance would also consist of surface runoff to detention basins, swales, or other detention facilities. Such new development, like the project, would be required to comply with the requirements of the design criteria identified in the Stormwater Quality Design Manual for the Sacramento and South Placer Regions. In addition, cumulative impacts of related projects would undergo separate environmental review to ensure that design criteria facilities are included as part of those projects. Therefore, the "Land" and "Water" portions of the project would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related to changes in drainage and runoff patterns and stormwater conveyance.

Groundwater Recharge

Planned development under the "Land" portion of the project would include increases in impervious surfaces and the amount of surface runoff generated by proposed development. Soils in the SPA and surrounding area have a poor capacity for groundwater recharge, with most of the substantial recharge occurring along active stream channels. Those areas within the SPA that are most conducive to groundwater recharge, such as the Alder Creek stream and tributary corridors as well as the retention basins, would be sited and designed to maximize infiltration. Furthermore, no new wells would be established for domestic use, and increased seasonal groundwater recharge from landscape irrigation activities would occur. Impacts on groundwater recharge would be less-than-significant. Therefore, the "Land" portion of the project would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related to groundwater recharge.

Groundwater Resources

Construction of the conveyance pipeline alternative alignments, booster pump station, and WTP alternatives would, at times, require dewatering of shallow, perched groundwater in the immediate vicinities of excavations and installation of underground features at a limited number of areas where groundwater depths are shallow. Groundwater withdrawn from the construction areas would be subsequently discharged to local waterways or drainage ditches, or via land application, and could result in soil erosion and stormwater discharges of suspended solids, increased turbidity, and potential mobilization of other pollutants from project-related construction sites. Implementation of mitigation measures in Section 3B.17, "Groundwater Resources - Water," would reduce impacts associated with construction dewatering to a less-than-significant level. Because construction dewatering

of shallow groundwater would be temporary, it would not act in combination with other projects to result in a cumulatively considerable incremental contribution to a significant cumulative impact on local groundwater resources.

Construction of the White Rock WTP or Folsom Boulevard WTP under the "Water" portion of the project would include increases in impervious surfaces and the amount of surface runoff generated by proposed development. However, these impermeable surfaces would be limited in extent to less than 0.5-acre of the 10-acre alternative WTP sites (including buildings, paved roads, storage and treatment facilities, and parking lots) and only a portion of the well sites (including access roads and auxiliary facilities). This area would be very small in comparison to adjacent areas that would remain open and permeable. Impacts on groundwater recharge from implementation of the "Water" portion of the project would be less-than-significant. Therefore, the "Water" portion of the project would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related to groundwater recharge.

Implementation of the "Water" portion of the project would not construct new wells or require groundwater to meet water demands of the "Land" portion of the project. However, operation of the "Water" portion of the project could indirectly contribute to an increase in the volume of groundwater pumped by SCWA within the South American Subbasin in the future. Other projects that may contribute to future cumulative impacts include: new development associated with the Sacramento County General Plan Update, the Long-Term EWA Program, East Sacramento County Groundwater Replacement Project, and SCWA Zone 40 Conjunctive-Use Program. Under future cumulative conditions (beyond 2030), other incremental water demands from developments within the unincorporated portions of Sacramento County in conjunction with new growth within the City's of Rancho Cordova and Elk Grove could place additional demands on local groundwater. These additional demands as contemplated in Sacramento County's General Plan EIR for the Preferred Alternative when combined with SCWA's incremental reduction in capacity within the Freeport Project could lead to cumulatively considerable impacts to local groundwater resources by exceeding the groundwater basin's safe yield of 273,000 AFY.

In the Sacramento County General Plan Update EIR, the County identified an additional water demand of 31,633 AFY for the proposed Preferred Alternative. This additional demand, if solely supplied through groundwater, and combined with other existing groundwater demands is estimated at 262,280 AFY in 2030 and would exceed the sustainable yield for the Central Basin. The largest component of the total 31,633 AFY for SCWA Zone 40's new water demand is almost entirely created by the Jackson and Grant Line East New Growth Areas and is an order of magnitude larger than the purveyor with the next largest demand (California American Water Suburban/Rosemont) at 2,342 AFY demand predicted for the Central Basin.

The County's General Plan EIR notes that SCWA's Zone 40 is allocated 40,900 AFY of groundwater from the Central Basin with the completion of the Freeport Project and, as provided in the County's draft General Plan Update EIR, SCWA is not proposing any new groundwater supply in excess of this allocation to support growth in the General Plan Update's Preferred Alternative. At this time, SCWA is proposing additional water conservation, use of recycled water, and a robust conjunctive use plan that identifies an active groundwater banking program during wet weather and increased groundwater pumping during dry periods. In addition, the draft General Plan Update EIR identifies an additional policy requiring that a water supply plan demonstrating that new growth within the Jackson and Grant Line East New Growth Areas will not exceed the sustainable yield of the Central Groundwater Basin be approved prior to development.

Although the County's Preferred Alternative, General Plan (2007), has not been formally adopted, the potential indirect impacts to groundwater resources created by the Off-Site Water Facility Alternatives could contribute a cumulative demand for groundwater resources. Beyond 2030, the combined demand for groundwater during dry years could exceed the safe yield of the Central Basin, thereby resulting in a significant, cumulatively considerable impact. At this time, the City is unable to confirm whether potential future groundwater impacts could be reduced to less than significant levels. Based on this circumstance, the City concludes that the Off-site

Water Facility Alternatives could indirectly contribute to potentially cumulative, significant and unavoidable impacts to the South American Groundwater Subbasin beyond 2030.

LAND USE AND AGRICULTURAL RESOURCES

The SPA is generally located in eastern Sacramento County immediately south of the Folsom city limits and west of the Sacramento/El Dorado County line. Under the "Water" portion of the project, the alternative WTP sites are located within unincorporated Sacramento County and the conveyance pipeline alternative alignments would be installed within the boundaries of the City of Rancho Cordova and unincorporated Sacramento County. Proposed, planned, and approved development in El Dorado and Sacramento Counties and regional development anticipated by the SACOG Blueprint must be considered for the purpose of evaluating land use impacts on a cumulative level (Exhibits 4-1 and 4-2). Under cumulative conditions, future projects will increase development and provide additional housing, employment, shopping, and recreational opportunities.

The SPA consists of livestock grazing lands, and there is only one existing single-family residence and associated agricultural outbuildings located on the western side of the SPA. No residential land uses are located on the alternative WTP sites or within the conveyance pipeline alternative alignment under the "Water" portion of the project. Therefore, implementation of the "Land" and "Water" portions of the project would not physically divide an established community and it would not contribute to a cumulative impact on this basis.

Future growth under cumulative conditions may result in a variety of physical impacts related to consistency with adopted land use plans. Impacts involving adopted land use plans or policies and zoning generally would not combine to result in cumulative impacts. The determination of significance for impacts related to these issues, as described by Appendix G of the State CEQA Guidelines, and referenced earlier in Sections 3A.10 and 3B.10, "Land Use and Agricultural Resources," is whether a project would conflict with any applicable land use plan or policy adopted for the purpose of avoiding or mitigating environmental impacts. Such a conflict is site-specific; it is addressed on a project-by-project basis. Implementing the "Land" and "Water" portions of the project would not result in significant land use planning impacts, and the project's ultimate consistency with adopted local land use plans, policies, and zoning is provided for through entitlements to revise the City of Folsom General Plan and Zoning Code under the "Land" portion of the project and the Sacramento County General Plan and Zoning Code.

Any land use inconsistencies of future projects, by themselves, are not considered a significant cumulative effect because it is a land use regulation, not an environmental impact. However, implementation of those plans and policies adopted for the purpose of avoiding or mitigating environmental impacts could lead to physical environmental impacts, which are considered in the appropriate sections of this EIR/EIS. Because land use impacts would occur on a project-specific basis rather than a cumulative basis, the project would not contribute to cumulatively considerable land use impacts. The proposed GPA would change permitted densities, but would not change permitted uses or the physical locations identified for Single Family, Multi-family Medium Density, and Multi-family High Density development in the existing Folsom General Plan. For issue areas (such as land use and agricultural resources) which are related to land coverage, there would be no change from the City's existing General Plan.

Agricultural Resources

Land in the project vicinity has been converted from agricultural uses to urban development over the last 50 years. Because of the soil types, land in the project vicinity is generally most suitable for grazing land, rather than intensive agriculture such as row crops. Approximately 187,102 acres of land in Sacramento County was under Williamson Act contracts in 2007 (California Department of Conservation [DOC] 2008:26). Of these lands, approximately 10,605 acres were in the nonrenewal process (DOC 2008:29). The nonrenewal process is the most common mechanism for termination of Williamson Act contract lands and most Williamson Act contracts are terminated through nonrenewal expiration. In Sacramento County, approximately 406 acres of land under of

Williamson Act contracts entered the nonrenewal process, and the amount of contract land terminated through nonrenewal expirations was approximately 524 acres as of 2007 (DOC 2008:34, 35).

Under the "Land" portion of the project, approximately 2,493 acres of the SPA consists of agricultural lands under existing Williamson Act contracts. Notices of nonrenewal were filed on these parcels in 2004 and 2006; as a result, these existing contracts will expire in 2014 and 2016, respectively. Under the "Water" portion of the project, the White Rock WTP site is under an existing Williamson Act contract, and a notice of nonrenewal was filed on this parcel (APN 072-0060-052-000) and the existing contract will expire in 2018. Implementation of the "Land" and "Water" portions of the project would require the cancellation of one or more of these Williamson Act contracts before their expiration date because the proposed land and water uses would not be permitted under the existing contracts. No feasible mitigation measures are available to reduce impacts associated with the cancellation of these Williamson Act contracts to a less-than-significant level.

In the vicinity of the SPA and Off-site Water Facilities Study Area, the only agricultural lands under existing Williamson Act contracts are south of White Rock Road. Nearby proposed projects, including the Teichert and Walltown quarries, would require cancellation of lands under Williamson Act contracts. Therefore, the impact of these related projects would be cumulatively considerable (i.e., significant), and the "Land" and "Water" portions of the project would result in a cumulatively significant incremental contribution to this cumulatively significant and unavoidable impact. It should be noted that the Williamson Act contract for the DeSilva-Gates Quarry project specifically lists mining as a compatible use under the terms of the existing contract and no cancellation of this contract would be required (Sacramento County 2007a).

The Sacramento County Important Farmland map, published by DOC's Division of Land Resource Protection, designates the SPA, the off-site freeway interchange improvements, the sewer force main, and the detention basin under the "Land" portion of the project, and the alternative WTP sites and conveyance pipeline alternative alignments under the "Water" portion of the project, as Grazing Land and/or Urban and Built-Up Land (DOC 2006). The two off-site roadway extensions from the Folsom Heights property into El Dorado Hills are designated by the El Dorado County Important Farmland Map as Grazing Land and Urban and Built-Up Land. These farmland designations are not considered Important Farmland under CEQA (California Public Resources Code Sections 21060.1 and 21095 and State CEQA Guidelines Appendix G). Therefore, the "Land" and "Water" portions of the project would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related to conversion of Important Farmland to nonagricultural uses.

NOISE

CUMULATIVE IMPACTS - NOISE

When determining whether the overall noise (and vibration) impacts from related projects would be cumulatively significant and whether the project's incremental contribution to any significant cumulative impacts would be cumulatively considerable, it is important to note that noise and vibration are localized occurrences; as such, they decrease rapidly in magnitude as the distance from the source to the receptor increases. Therefore, only those related projects that are in the direct vicinity of the "Land" and "Water" portions of the project and those that are considered influential in regards to noise and vibration (e.g., not located where ambient conditions are dominated by traffic noise from U.S. 50 and relatively large in size) would have the potential to be considered in a cumulative context with the project's incremental contribution (e.g., Easton, Carson Creek, City Corporation Yard, and the Teichert, Walltown, and DeSilva Gates quarries).

Temporary, Short-Term Exposure of Sensitive Receptors to Increased Equipment Noise

Construction equipment noise from the aforementioned related projects would be similar in nature and magnitude to those discussed from the "Land" and "Water" portions of the project in Section 3A.11 and 3B.11, "Noise." Specifically, noise levels from on-site construction activities would fluctuate depending on the particular type,

number, and duration of usage for the varying equipment. The site preparation phase would be anticipated to generate the most substantial noise levels as the on-site equipment associated with grading, compacting, and excavation tend to be the loudest. Although detailed information is not currently available, construction of the related projects would be anticipated to result in noise levels of approximately 87 dB L_{eq} and 90 dB L_{max} at 50 feet from the simultaneous operation of heavy-duty equipment, which could exceed applicable standards at nearby sensitive receptors and/or result in substantial increases in ambient noise levels especially during the more noise-sensitive hours of the day. While temporary, short-term construction source noise levels from the related projects could be considered exempt in the City of Folsom and the County of Sacramento if such noise would only occur during the daytime hours, there is no guarantee that all of the related projects would include such restrictions, and the County of El Dorado has not adopted a daytime construction noise exemption. Therefore, the related projects could generate significant impacts related to short-term exposure of sensitive receptors to increased equipment noise. Construction of the "Land" and "Water" portions of the project could also result in a significant impact from temporary, short-term equipment noise levels in the direct vicinity and possible during the same time frame as the related projects. Implementation of Mitigation Measures in 3A.11 and 3B.11, "Noise," would limit construction activities to daytime hours and require the construction of temporary noise barriers; however, these measures would not be sufficient to avoid significant construction noise impacts. Thus, the incremental contribution of the "Land" and "Water" portions of the project to this significant cumulative impact would be cumulatively considerable.

Temporary, Short-Term Exposure of Sensitive Receptors to Potential Groundborne Noise and Vibration

Groundborne noise and vibration levels from construction of the aforementioned related projects would be similar in nature and magnitude to those discussed in section 3A.11 and 3B.11, "Noise." Specifically, construction activities would result in varying degrees of temporary groundborne noise and vibration, depending on the specific construction equipment used and activities involved (see, for example, Table 3A.11-17). Although detailed information is not currently available, construction of the related projects would be anticipated to result in maximum groundborne noise and vibration levels associated with bulldozing and blasting activities. According to FTA, levels associated with the use of a large bulldozer and blasting are 0.089 and 1.13 in/sec PPV (87 and 109 VdB) at 25 feet, respectively. With respect to the prevention of structural damage, bulldozing would not exceed the Caltrans-recommended level of 0.2 in/sec PPV even at a distance of 25 feet. However, blasting could exceed this level within 80 feet of said activities based on FTA's recommended procedure for applying a propagation adjustment to these reference levels. In addition, with respect to prevention of human disturbance, bulldozing and blasting could exceed the FTA-recommended level of 78 VdB within 50 and 275 feet, respectively. The exact locations of bulldozing activities and blasting points have not been determined at this time; however, nearby sensitive receptors could be located within the distances modeled above that are correlated with the Caltrans- and FTA- recommended exceedance levels. Therefore, the related projects could result in a significant impact from short-term exposure of sensitive receptors to potential groundborne noise and vibration. As discussed in Sections 3A.11 and 3B.11, "Noise," construction of the "Land" and "Water" portion of the project would result in a significant impact from temporary, short-term groundborne noise and vibration levels in the immediate vicinity and possibly during the same time frame as the related projects. Implementation of Mitigation Measures contained in Sections 3A.11 and 3B.11, "Noise" would reduce this impact, but not to a less-than-significant level. Thus, the incremental contribution of the "Land" portion of the project to this significant cumulative impact would be cumulatively considerable. Under the "Water" portion of the project, construction-related blasting activities would be temporary and short-term and located a sufficient distance away from existing structures, including residencies, such that this impact would be less than significant.

Long-Term Exposure of Sensitive Receptors to Increased Stationary-Source Noise

Stationary-source noise from the aforementioned related projects would be similar in nature and magnitude to those discussed from the "Land" and "Water" portions of project in Sections 3A.11 and 3B.11 for mechanical HVAC equipment, emergency electrical generators, parking lot activities, loading dock and delivery activities, emergency facilities, and outdoor recreational and educational activities. With respect to the City Corporation

Yard, noise sources could include on-site truck and forklift activities (e.g., idling and circulating), generators, fans, air compressors, maintenance shops, metal fabricating shops, welders, cutting equipment, grinders, outdoor speakers, blowers, loading docks, and pallets dropping. New stationary noise sources at the booster pump station and White Rock WTP or Folsom Boulevard WTP under the "Water" portion of the project include generators, pumps, and heavy equipment. According to EPA and other documented references, noise levels for such equipment can range from approximately 76 to 91 dB at 3 feet from the source depending on the exact type and at 50 feet typical from 55 to 75 dB L_{eq} and from 80 to 84 dB L_{max} (EPA 1971). Operation of the related projects could result in the long-term stationary source noise levels that exceed applicable standards at nearby sensitive receptors and/or result in substantial increases in ambient noise levels. While these types of noise levels could be controlled and associated noise levels reduced at the source (e.g., noise walls, enclosures, located in shielded locations, properly equipped and maintained), there is no guarantee these would be included in all of the related projects. Therefore, a significant impact could occur from the related projects. As discussed in Sections 3A.11 and 3B.11, operation of the "Land" and "Water" portions of the project could result in a significant impact from long-term stationary source noise levels; however, implementation of Mitigation Measures in Sections 3A.11 and 3B.11 would reduce this impact to a less-than-significant level in the direct vicinity of the related projects. Thus, the incremental contribution of the "Land" and "Water" portions of the project to this significant cumulative impact would not be cumulatively considerable.

Long-Term Exposure of Sensitive Receptors to Increased Traffic Noise Levels

This analysis examines the potential for degradation of the existing ambient noise environment from project implementation based on thresholds contained in the CEQA checklist, which also encompass the factors taken into account for impacts under NEPA, where a 5 dBA increase at 50 dBA existing sound levels would be considered a significant impact, and a 3 dBA increase at 60 dBA existing sound levels would be considered a significant impact.

Implementation of the aforementioned related projects would result in an increase in ADT volumes on affected roadway segments and, consequently, an increase in traffic source noise. Traffic noise levels associated with the related projects were predicted for affected roadway segments using FHWA's Highway Noise Prediction Model (FHWA-RD-77-108) (FHWA 1978) and traffic data (e.g., ADT volumes, vehicle speeds, and percent distribution of vehicle types) from DKS Associates, Inc. and Caltrans. This model is based on the California vehicle noise (CALVENO) reference noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and ground attenuation factors and does not assume any natural or human-made shielding (e.g., the presence of vegetation, berms, walls, or buildings). Table 4-8 summarizes the modeled traffic noise levels at the approximate road corridor boundary under future no project conditions, essentially the noise levels attributable only to the related projects including the quarry-related activities. In comparison to those levels shown in Table 3A.11-18 under the existing no project conditions, implementation of the related projects would result in substantial (e.g., 3 dB L_{dn}/CNEL where traffic noise levels range between 60 and 65 dB L_{dn}/CNEL, or 1.5 dB L_{dn}/CNEL where traffic noise levels are greater than 65 dB L_{dn}/CNEL) net increases along affected roadway segments. It is also important to note here that the addition of the quarry-related traffic alone under future conditions (i.e., compare no project [without quarry trucks] to no project [with quarry truck] in Table 4-8 below) results in substantial increases in traffic noise levels. Therefore, the related projects could result in a significant impact from long-term exposure of sensitive receptors to increased traffic noise levels. As discussed in Impact 3A.11-4, project operation would result in a significant impact from the long-term exposure of sensitive receptors to increased traffic noise levels on the same affected roadway segments, which for the purposes of that analysis, did not include quarry-related traffic. Implementation of Mitigation Measure 3A.11-4 would reduce this impact, but not to a less-than-significant level. In addition, even when considering the addition of quarry-related traffic under future conditions, implementation of the project would still result in substantial increases when comparing future no project with future plus project conditions as indicated in bold in Table 4-8 below.

Table 4-8
Summary of Modeled Traffic Noise Levels of the "Land" Portion of the Project Under Future (2030) No Project and Future Plus Project Conditions, With Quarry Truck Trips

Roadway Segment	Between		Predicted Noise Level (dB L_{dn}/ CNEL) at Approximate Road Corridor Boundary											
			NP (Without Quarry Trucks)	With Quarry Trucks										
				NP	Δ in dB	PP	Δ in dB	RIM	Δ in dB	CD	Δ in dB	RHD	Δ in dB	NF	Δ in dB
Prairie City Road	Blue Ravine Road	Iron Point Road	72.0	73.2	1.2	73.6	**1.6**	73.6	**1.6**	73.7	**1.7**	73.7	**1.7**	73.6	**1.6**
Prairie City Road	Iron Point Road	U.S. 50	72.4	73.5	1.1	74.1	**1.7**	74.1	**1.7**	74.2	**1.8**	74.2	**1.8**	74.1	**1.7**
East Bidwell Street	Blue Ravine Road	Oak Avenue Parkway	74.2	75.1	0.9	75.3	1.0	75.3	1.1	75.4	1.2	75.4	1.2	75.4	1.2
East Bidwell Street	Oak Avenue Parkway	Broadstone Parkway	76.3	76.8	0.6	77.1	0.8	77.2	0.9	77.2	1.0	77.3	1.0	77.2	1.0
East Bidwell Street	Broadstone Parkway	Iron Point Road	75.9	76.5	0.6	77.0	1.1	77.2	1.3	77.3	1.3	77.3	1.4	77.2	1.3
East Bidwell Street	Iron Point Road	U.S. 50	76.7	77.2	0.5	77.8	1.1	78.1	1.4	78.3	**1.6**	78.4	**1.7**	78.2	**1.5**
Scott Road	U.S. 50	Easton Valley Parkway	71.7	76.9	**5.2**	77.2	**5.6**	77.2	**5.5**	77.7	**6.0**	77.8	**6.1**	77.4	**5.7**
Scott Road	Easton Valley Parkway	Road "A"	71.7	76.9	**5.2**	75.0	**3.3**	74.4	**2.8**	74.6	**3.0**	75.1	**3.5**	74.1	**2.5**
Scott Road	Road "A"	White Rock Road	71.7	76.9	**5.2**	74.2	**2.6**	74.8	**3.1**	74.8	**3.2**	75.0	**3.3**	74.7	**3.0**
Oak Avenue Parkway	U.S. 50	Easton Valley Parkway	0.0	0.0	0.0	76.2	0.0	76.7	0.0	77.2	0.0	77.3	0.0	76.8	0.0
Oak Avenue Parkway	Easton Valley Parkway	Road "A"	0.0	0.0	0.0	75.2	0.0	74.8	0.0	75.4	0.0	75.7	0.0	74.6	0.0
Oak Avenue Parkway	Road "A"	White Rock Road	0.0	0.0	0.0	75.3	0.0	74.8	0.0	75.3	0.0	75.4	0.0	75.0	0.0
Grant Line Road	White Rock Road	Centennial Road	77.0	81.0	**4.0**	81.3	**4.3**	81.4	**4.5**	81.5	**4.5**	81.5	**4.5**	81.5	**4.5**
Grant Line Road	Centennial Road	Douglas Road	76.8	80.9	**4.1**	81.1	**4.4**	81.3	**4.6**	81.4	**4.6**	81.4	**4.6**	81.4	**4.6**
Grant Line Road	Douglas Road	Keifer Boulevard	75.8	80.3	**4.4**	80.4	**4.6**	80.5	**4.7**	80.6	**4.7**	80.6	**4.7**	80.6	**4.7**
Grant Line Road	Keifer Boulevard	Jackson Road	74.0	80.0	**6.0**	80.1	**6.1**	80.2	**6.2**	80.3	**6.2**	80.3	**6.2**	80.3	**6.2**
Grant Line Road	Jackson Road	Sunrise Boulevard	74.7	79.4	**4.6**	79.5	**4.7**	79.6	**4.9**	79.6	**4.9**	79.6	**4.9**	79.6	**4.9**
Jackson Road (SR 16)	Grant Line Road	Dillard Road	72.0	72.3	0.3	72.2	0.1	72.1	0.1	72.1	0.1	72.1	0.1	72.1	0.1
Jackson Road (SR 16)	Dillard Road	Stone House Road	72.3	72.5	0.2	72.5	0.2	72.5	0.2	72.5	0.2	72.5	0.2	72.5	0.2
Prairie City Road	U.S. 50 eastbound ramp	Easton Valley Parkway	73.8	76.8	**3.0**	76.9	**3.1**	76.7	**3.0**	77.3	**3.6**	77.4	**3.6**	76.8	**3.0**
Prairie City Road	Easton Valley Parkway	White Rock Road	71.8	75.9	**4.1**	76.7	**4.9**	76.6	**4.9**	76.8	**5.0**	76.8	**5.0**	76.5	**4.7**
Scott Road (south)	White Rock Road	Latrobe Road	62.6	77.1	**14.6**	77.2	**14.7**	77.4	**14.8**	77.5	**14.9**	77.5	**14.9**	77.4	**14.9**

Table 4-8
Summary of Modeled Traffic Noise Levels of the "Land" Portion of the Project Under Future (2030) No Project and Future Plus Project Conditions, With Quarry Truck Trips

Roadway Segment	Between		Predicted Noise Level (dB L_{dn}/ CNEL) at Approximate Road Corridor Boundary											
			NP (Without Quarry Trucks)	With Quarry Trucks										
				NP	Δ in dB	PP	Δ in dB	RIM	Δ in dB	CD	Δ in dB	RHD	Δ in dB	NF	Δ in dB
Stonehouse Road	Latrobe Road	Jackson Road (SR 16)	64.2	64.8	0.6	65.8	1.7	66.0	1.8	66.1	2.0	66.1	2.0	66.1	2.0
White Rock Road	Villagio Parkway	Grant Line Road	71.6	73.6	**2.0**	74.3	**2.7**	74.3	**2.7**	74.4	**2.8**	74.5	**2.9**	74.3	**2.7**
White Rock Road	Grant Line Road	Prairie City Road	77.6	81.2	**3.5**	81.5	**3.9**	81.7	**4.0**	81.8	**4.1**	81.8	**4.1**	81.7	**4.1**
White Rock Road	Prairie City Road	Scott Road (south)	76.4	81.5	**5.2**	81.6	**5.3**	81.9	**5.5**	81.9	**5.5**	81.9	**5.6**	81.9	**5.5**
White Rock Road	Scott Road (south)	Oak Avenue Parkway	76.5	79.2	**2.8**	79.3	**2.9**	79.6	**3.2**	79.7	**3.2**	79.7	**3.3**	79.7	**3.2**
White Rock Road	Oak Avenue Parkway	Scott Road (north)	76.5	79.2	**2.8**	80.2	**3.8**	80.5	**4.0**	80.5	**4.1**	80.6	**4.1**	80.5	**4.0**
White Rock Road	Scott Road (north)	Placerville Road	74.8	75.3	0.6	75.5	0.7	75.6	0.9	75.7	0.9	75.8	1.0	75.6	0.9
White Rock Road	Placerville Road	Empire Ranch Road	76.1	76.6	0.5	77.0	0.9	77.8	**1.7**	78.0	**1.8**	78.1	**1.9**	77.8	**1.7**
White Rock Road	Empire Ranch Road	Carson Crossing Road	76.1	76.6	0.5	78.1	**1.9**	74.6	-1.5	74.8	-1.4	75.0	-1.1	74.7	-1.5
White Rock Road	Zinfandel Drive	Sunrise Boulevard	64.7	69.7	**5.0**	69.7	**4.9**	69.6	**4.9**	69.6	**4.8**	69.6	**4.9**	69.5	**4.7**
White Rock Road	Sunrise Boulevard	Rancho Cordova Parkway	72.8	74.2	1.4	74.2	1.3	74.1	1.3	74.1	1.3	74.1	1.3	74.1	1.2
White Rock Road	Rancho Cordova Parkway	International Drive	68.1	71.4	**3.2**	71.3	**3.2**	71.2	**3.1**	71.2	**3.1**	71.3	**3.1**	71.2	**3.0**
White Rock Road	International Drive	Rio del Oro Parkway	68.8	71.9	**3.1**	72.2	**3.4**	72.1	**3.4**	72.1	**3.3**	72.2	**3.4**	72.1	**3.3**
White Rock Road	Rio del Oro Parkway	Villagio Parkway	68.9	72.2	**3.3**	72.7	**3.7**	72.6	**3.7**	72.6	**3.7**	72.7	**3.8**	72.5	**3.6**
White Rock Road	Villagio Parkway	Grant Line Road	72.3	74.2	**2.0**	75.0	**2.7**	75.0	**2.7**	75.1	**2.8**	75.1	**2.9**	75.0	**2.7**
White Rock Road	Carson Crossing Road	Stonebriar Drive	72.7	73.4	0.8	73.8	1.1	74.6	2.0	74.8	**2.1**	74.9	**2.2**	74.6	**1.9**
White Rock Road	Stonebriar Drive	Windfield Way	73	74	0.8	74.9	**2.1**	71.5	-1.3	71.7	-1.1	71.9	-0.9	71.6	0.0
White Rock Road	Windfield Way	Latrobe Road	70	72	1.2	71.9	**1.5**	73.2	**2.8**	73.2	**2.8**	73.2	2.8	73.2	0.0
White Rock Road	Latrobe Road	Valley View Parkway	70	71	1.2	71.6	**1.6**	72.0	**2.0**	72.1	**2.1**	72.1	2.1	72.0	0.0
White Rock Road	Valley View Parkway	U.S. 50	71.5	72.4	0.9	72.4	0.9	72.5	1.0	72.6	1.0	72.6	1.1	72.6	1.0
U.S. 50	Zinfandel Drive	Sunrise Boulevard	80.4	80.9	0.5	81.0	0.6	81.1	0.6	81.1	0.7	81.1	0.7	81.1	0.7

Table 4-8
Summary of Modeled Traffic Noise Levels of the "Land" Portion of the Project Under Future (2030) No Project and Future Plus Project Conditions, With Quarry Truck Trips

Roadway Segment	Between		Predicted Noise Level (dB L_{dn}/ CNEL) at Approximate Road Corridor Boundary											
			NP (Without Quarry Trucks)	With Quarry Trucks										
				NP	Δ in dB	PP	Δ in dB	RIM	Δ in dB	CD	Δ in dB	RHD	Δ in dB	NF	Δ in dB
U.S. 50	Sunrise Boulevard	Rancho Cordova Parkway	80.0	80.5	0.5	80.7	0.7	80.8	0.8	80.9	0.9	80.9	0.9	80.8	0.8
U.S. 50	Rancho Cordova Parkway	Hazel Avenue	80.2	80.7	0.5	80.8	0.7	80.9	0.8	81.0	0.9	81.0	0.9	81.0	0.8
U.S. 50	Hazel Avenue	Folsom Boulevard	79.4	80.0	0.6	80.4	1.0	80.6	1.2	80.7	1.3	80.7	1.4	80.7	1.3
U.S. 50	Folsom Boulevard	Prairie City Road	78.1	78.9	0.8	79.3	1.2	80.1	**2.0**	80.3	**2.2**	80.3	**2.2**	80.2	**2.1**
U.S. 50	Prairie City Road	Oak Avenue Parkway	78.8	79.2	0.4	79.4	0.7	79.6	0.9	79.7	1.0	79.8	1.0	79.7	1.0
U.S. 50	Oak Avenue	Scott Road	77.8	78.3	0.5	78.3	0.5	78.5	0.7	78.7	0.8	78.7	0.9	78.6	0.8
U.S. 50	Scott Road to Empire Ranch Road	Empire Ranch Road	76.9	77.2	0.3	77.5	0.6	78.1	1.2	78.1	1.2	78.2	1.3	78.1	1.2
U.S. 50	Empire Ranch Road	Latrobe Road	77.6	77.8	0.2	78.0	0.4	77.9	0.3	77.9	0.3	78.0	0.4	77.9	0.3
U.S. 50	Latrobe Road	Silva Valley Parkway	76.1	76.4	0.3	76.6	0.5	76.7	0.6	76.7	0.6	76.7	0.7	76.7	0.6
U.S. 50	Silva Valley Parkway	Bass Lake Road	76.5	76.9	0.4	77.1	0.6	77.2	0.7	77.2	0.7	77.2	0.7	77.2	0.7

Notes: CNEL = Community Noise Equivalent Level; dB = A-weighted decibels; L_{dn} = day-night average noise level; Δ = Change; NP = No Project; PP = Proposed Project Alternative; RIM = Resource Impact Minimization Alternative; CD = Centralized Development Alternative; RHD = Reduced Hillside Development Alternative; NF = No Federal Action Alternative

Bold: Represents the potential for substantial increase (e.g., 3 dB L_{dn}/CNEL where existing or projected future traffic noise levels range between 60 and 65 dB L_{dn}/CNEL, 1.5 dB L_{dn}/CNEL where existing or projected future traffic noise levels are greater than 65 dB L_{dn}/CNEL) in comparison to existing No Project conditions.

Refer to Appendix J for detailed modeling input data and output results.

Source: Data provided by AECOM in 2009

Over the long-term, operation of the "Water" portion of the project could generate a minimal number of new vehicle trips from employees traveling to and from the White Rock WTP or Folsom Boulevard WTP and routine maintenance and inspection activities of the conveyance pipeline and booster pump station. These trips could substantially degrade the existing ambient noise environment.

Thus, the traffic noise impacts from the "Land" and "Water" portion project and related projects, taken together, are cumulatively significant. Construction of sound walls and other noise-attenuating features (e.g., berms, dual-pane windows) throughout the region would require a regional program (which does not exist) and may not be feasible to implement. Because it is considered infeasible to sufficiently reduce noise at every existing and proposed sensitive receptor that would be affected, this cumulative traffic noise impact is significant and unavoidable, and the project's incremental contribution to the significant cumulative impact is itself cumulatively considerable (i.e., significant and unavoidable).

Compatibility of Sensitive Land Uses with the Ambient Noise Environment

After consideration has been made of the project-related increase in the ambient noise level (discussed in the preceding paragraph), this analysis considers whether the total noise level with project implementation would be within the allowable exterior local jurisdictional noise element standard. Any total noise level above the local jurisdictional noise element standard would be considered a significant impact.

Ambient noise levels in the general area of the aforementioned related projects would be influenced largely by vehicle traffic on nearby roadways. Table 4-8 summarizes the modeled traffic noise levels on area roadways at the approximate road corridor boundary under future no project conditions including quarry-related activities. As shown in Table 4-8, when considering traffic noise levels associated with the related projects including quarry-related activities, modeled noise levels exceed 60 L_{dn}/CNEL (which is the level considered acceptable in the applicable standards for sensitive uses) by as much as 20 dB, which could result in incompatibilities with existing sensitive uses and/or those proposed as part of the related projects (e.g., Easton and Carson Creek). Therefore, a significant impact could occur from the related projects from land use incompatibility with vehicle traffic. The 60-dB L_{dn}/CNEL noise contours for adjacent roadways (i.e., U.S. 50, White Rock Road, and Prairie City Road) with the inclusion of projected quarry truck trips completely encompass the SPA. Even considering that a typical 6-foot sound wall would reduce noise levels from approximately 5-6 dB and for each additional foot of wall another 1 dB (Caltrans 1998), and incorporating the maximum setback distance feasible, noise levels would still exceed applicable standards at those sensitive uses proposed as part of the project. Thus, the incremental contribution of the "Land" portion of the project to this significant cumulative impact would be cumulatively considerable.

Based on the analyses of operational noise impacts from the "Water" portion of the project, minimal noise from vehicular traffic would be expected from the Off-Site Water Facilities WTP. However, the proximity of pump and generator facilities for the Off-Site Water Facilities pumping facilities, and the WTP, to adjacent sensitive receptors is not known at this time and, therefore, the City is unable to confirm whether enclosing pump and generator facilities at the booster pump station and well sites would mitigate water-related operational noise to a less-than-significant level. Although unlikely, in order to be conservative, this analysis assumes that pumping and WTP operations, when considered in combination with the related projects, could, at times, be in excess of Sacramento County and City of Rancho Cordova standards. Therefore, the incremental contribution of the "Water" portion of the project to this significant cumulative impact could be cumulatively considerable.

Cumulative Mitigation Measure Noise-1-Land: Implement Measures to Reduce Exposure of Sensitive Receptors to Increased Traffic Noise Levels from Quarry Truck Traffic.

The City of Folsom does not have direct jurisdiction over the Teichert, DeSilva Gates, or Walltown quarry project applicants as these projects are located within the unincorporated portion of the County of Sacramento. The City's authority to control the activities of the quarry trucks includes restrictions or actions that would be applicable within the City's jurisdictional boundaries. For example, the City could

designate truck routes through the City consistent with California Vehicle Code section 21101(c), including truck routes in the Folsom South of U.S. 50 project area, so as to prohibit or limit quarry trucks' use of City roads adjacent to areas where projected truck traffic volumes would otherwise result in exposure of sensitive receptors to operational noise from quarry truck traffic and/or traffic safety hazards. If this approach is selected by the City, then prior to the approval of the first tentative subdivision map or any other discretionary approval that would place sensitive receptors along any roads the quarry trucks could use to access U.S. 50, the City's traffic department and consultants shall analyze and propose to the City Council for approval designated truck routes from the quarries through City jurisdiction to access U.S. 50 that would allow a level of truck traffic that would avoid any potentially significant impact on sensitive receptors from truck traffic noise within the Folsom South of U.S. 50 project area, as well as any other existing or planned uses that would contain sensitive receptors, so as to ensure that sensitive receptors are not exposed to interior noise levels in excess of 45 dBA, or increases in interior noise levels of 3 dBA or more, whichever is more restrictive.

As an alternative to designating truck routes, the following measures could be voluntarily implemented by the quarry project applicant(s) (Granite [Walltown], Teichert, and DeSilva Gates) to reduce exposure of new sensitive receptors developed in the SPA to increases in traffic noise levels generated by quarry truck traffic, and are encouraged.

- The quarry project applicant(s) should meet with the City of Folsom to discuss mitigation strategies, implementation, and cost.

- A site-specific, project-level screening analysis should be conducted by the City of Folsom and funded by the quarry truck applicant(s) for all proposed sensitive receptors (e.g., residences, schools) in the SPA that would be located along the sides of roadway segments that are identified in Table 4-8 as being potentially significant under any of the analyzed scenarios. The analysis should be conducted using an approved three dimensional traffic noise modeling program (i.e., TNM or SoundPlan). Each project-level analysis should be performed according to the standards set forth by the City of Folsom for the purpose of disclosure to the public and decision makers. The project-level analysis should account for the location of the receptors relative to the roadway, their distance from the roadway, and the projected future traffic volume for the year 2030 (including the percentage of heavy trucks). If the incremental increase in traffic noise levels are determined to exceed the threshold of significance recommended by the City of Folsom, then design mitigation should be employed, which may include the following:

    - Model the benefits of soundwalls (berm/wall combination) along the quarry truck hauling roadways and affected receptors not to exceed a total height of eight feet (two-foot berm and six-foot concrete mason wall). If this mitigation measure is determined by the City of Folsom to be inadequate, additional three dimensional traffic noise modeling should be conducted with the inclusion of rubberized asphalt at the expense of the quarry truck applicant(s). No quarry trucks should be allowed to pass on any roadway segment immediately adjacent to or within the SPA until said mitigation has been agreed upon by the City of Folsom and fees for construction of said mitigation are paid by the quarry truck applicant(s).

    - Implement the installation of rubberized asphalt (quiet pavement) on roadway segments adjacent to sensitive receptors that carry quarry trucks if soundwalls do not provide adequate reduction of traffic noise levels. The inclusion of rubberized asphalt would provide an additional 3 to 5 dB of traffic noise reduction. The cost of construction using rubberized asphalt should be borne by the quarry truck applicant(s). Said mitigation fee should be determined in consultation with the quarry project applicant(s), the Folsom South of 50 Specific Plan project applicant(s), and the City of Folsom. No quarry trucks should be allowed to pass on any roadway segment immediately adjacent to or within the SPA until said mitigation fees are paid.

- To improve the indoor noise levels at affected receptors, implement the following measures before the occupancy of the affected residences and schools:

  – Conduct an interior noise analysis once detailed construction plans of residences adjacent to affected roadways are available to determine the required window package at second and third floor receptors to achieve the interior noise level standard of 45 dB L_{dn} without quarry trucks.

  – Determine the interior quarry truck traffic noise level increases at second and third floor receptors adjacent to affected roadways compared to no quarry truck conditions. Window package upgrades are expected to be necessary due to the traffic noise level increases caused by quarry trucks along affected roadways. Quarry truck applicant(s) should pay for the cost of window package upgrades (increased sound transmission class rated windows) required to achieve the interior noise level standard of 45 dB L_{dn} with the inclusion of quarry truck traffic.

Implementation: The project applicant(s) of the Folsom South of 50 Specific Plan project.

Timing: Prior to approval of first tentative map or discretionary approval within SPA that would place sensitive receptors along roadways that quarry trucks would reasonably use to access U.S. Highway 50.

Enforcement: City of Folsom Community Development Department.

Implementation of Cumulative Mitigation Measure Noise-1-Land would reduce the significant impact related to exposure of project-generated sensitive receptors to noise from increased traffic levels generated by quarry truck trips to a less-than-significant level because the City would either designate truck routes that would limit or prohibit truck traffic adjacent to sensitive receptors or the City would be able to reach a voluntary agreement with the quarry applicants that would require a site-specific noise assessment to be performed using an approved three dimensional traffic noise modeling program, and in the event the quarry trucks are shown to cause a 3 dBA increase in sound levels (or to increase interior sound levels above 45 dBA) within 400 feet of any project-generated sensitive receptors, either the setback distances of the sensitive receptors from the road would be increased, the sound wall heights would be increased, additional sound reduction measures such as quiet pavement would be constructed, or fewer quarry trucks would be allowed to pass on the roadways within 400 feet of the sensitive receptors such a 3 dBA increase would not occur. However, the City of Folsom does not have direct jurisdiction over the Teichert, DeSilva Gates, or Walltown quarry project applicants and operations; therefore, if the quarry project applicants decline to voluntarily implement the recommended mitigation, the City may adopt truck route restrictions, thereby reducing the impact to a less than significant level.

PARKS AND RECREATION

Regional recreational facilities are located near the SPA, including Bass Lake in El Dorado County and Folsom Lake, Lake Natoma, the Powerhouse State Historic Park, the Prairie City State Vehicular Recreation Area (OHV Park), and the American River Parkway in Sacramento County. Neighborhood and community parks are located throughout Sacramento and El Dorado Counties. The City of Folsom provides and maintains a full range of recreational activities and park facilities.

Implementation of the "Land" portion of the project would generate demand for parks and recreational facilities. Table A3.12-1, in Section 3A.12, "Parks and Recreation - Land," summarizes park facilities and total acreage and developed acreage of parkland in the City. A total of 385.35 acres of parkland are currently located within the City of Folsom (City of Folsom 2008). Currently, the City's parkland acreage to population ratio is currently 5.3 acres per 1,000, which is slightly above the City's park acreage standard of 5 acres per 1,000 residents. As shown

on Table 3A.12-3, in Section 3A.12, "Parks and Recreation - Land," between 84.8 and 170.0 acres of developed parks and active recreation areas would be created depending on the alternative chosen for development. All of the "Land" alternatives would meet the City's requirement of 5 acres of parkland per 1,000 residents thereby providing sufficient park facilities to meet the demand generated by the projected population at buildout. Therefore, while the related projects may result in a cumulatively considerable impact, the "Land" portion of the project would not contribute to such an impact. For the proposed GPA, existing Parks and Recreation planning in the City of Folsom has considered the growth which could occur in Multi-family Density and Multi-family High Density areas under the existing Folsom General Plan. Only the excess units (951 in total) which would be permitted under the increased density maximums are not accounted for in local park planning. The City of Folsom has an existing park surplus, with approximately 5.3 acres per 1,000 residents. Addition of 951 excess residents would lower this ratio to approximately 5.2 acres per 1,000 residents, still a surplus of park land.

In addition to the on-site facilities, the new residents would also be expected to use existing off-site recreational facilities such as those at Folsom Lake State Recreational Area, Folsom Powerhouse State Historic Park, the Prairie City OHV Park, Bass Lake, and the American River Parkway, including bicycle trails, campgrounds, boat launch facilities, and sports parks. Additional use of facilities could cause the potential physical deterioration of existing off-site local and regional park facilities. Although it cannot be fully ascertained with any degree of certainty exactly how many residents and with what frequency they would choose to use off-site recreational facilities, for purposes of this analysis, it is assumed that revenues from use charges and admission fees of these off-site facilities would increase along with increased usage, thus supporting increased maintenance. Similarly, increases in use from the related projects would be expected to result in an increase in admission revenues for park maintenance. As a result, the "Land" portion of the project, the proposed GPA, and related projects would not contribute to physical deterioration of regional park facilities, and the project would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related to regional park facilities.

Within the Off-site Water Facilities Study Area, the Sacramento River provides water-dependent activities, such as boating and fishing, and recreational activities including camping, hiking, picnicking, and sightseeing. Implementation of the "Water" portion of the project would result in very minor changes in flows within the Sacramento River. These changes are generally attributed to changes in the surface water delivery schedule and quantity of return flow back to the Sacramento River. As discussed in Section 3B.12, "Parks and Recreation - Water," this operational change would result in a negligible change in the frequency with which flows in the Sacramento River are within a range suitable for water-dependent recreation during the peak recreation season (May to September). Therefore, the "Water" portion of the project would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related to water-dependant recreational opportunities.

POPULATION, EMPLOYMENT, AND HOUSING

Depending on the action alternative chosen for development, implementation of the "Land" portion of the project would include an estimated population of 16,761–24,335 new residents at full buildout. As discussed in Section 3A.13, "Population, Employment, and Housing - Land," it cannot be determined whether the "Land" portion of the project would generate population growth that exceeds estimates for Folsom or Sacramento County under their currently adopted General Plans, and the "Land" portion of the project could potentially result in unplanned population growth in the area. Population growth, by itself, is not considered a significant cumulative effect because it is not an environmental impact. However, the direct and indirect effects, such as housing and infrastructure needs that are related to population growth, can lead to physical environmental effects, the impacts of which are considered throughout Chapter 3 of this EIR/EIS.

The "Water" portion of the project would not involve construction of new housing that would directly result long-term increases in population. Therefore, the "Water" portion of the project would have no impacts related directly to population growth and no cumulatively considerable impacts would occur.

The proposed GPA could result in an excess of 532 units within the current City boundaries beyond those incorporated in the currently adopted Folsom General Plan. Population growth, by itself, is not considered a significant cumulative effect because it is not an environmental impact. However, the direct and indirect effects, such as housing and infrastructure needs that are related to population growth, can lead to physical environmental effects, the impacts of which are considered in Section 3A.10, "Land Use and Agricultural Resource – Land," throughout Chapter 3 of this EIR/EIS, and in the City's General Plan EIR.

Jobs/Housing Balance

The concept of jobs/housing balance presumes that the environment and quality of life in a given area benefit when the area has a balance between its housing supply and its employment base. In the broadest sense, the balance of jobs and housing in a metropolitan region is defined as provision of an adequate supply of housing to house workers employed in a defined geographic area, such as a community, a city, or other subregion. Alternatively, a jobs/housing balance can be defined as adequate provision of employment in a defined area that generates enough local workers to fill the housing supply. The opportunity to live close to the workplace afforded by providing housing close to jobs should translate to lower congestion and commute times by eliminating the necessity for long-distance commutes. It also provides increased opportunities to use transit, bike, or walk to work in lieu of driving. An area that has too many jobs relative to its housing supply is likely (in the absence of offsetting factors) to experience substantial in-commuting, relatively rapid increases in housing prices, and intensified pressure for additional residential development. Conversely, if an area has relatively few jobs in comparison to the number of employed residents, many of the workers are required to commute to jobs outside their area of residence. Commuting results in more traffic congestion, air quality degradation, and noise generation.

The simplest measure of jobs/housing balance is an index based on the ratio of employed residents (which is influenced by the number of homes) to jobs in the area. An index of 1.0 indicates that the supply of jobs and housing are balanced. An index above 1.0 indicates that employment growth is outpacing housing growth and, therefore, there are more jobs than employed residents, and may suggest that many employees are commuting in from outside the community. An index below 1.0 indicates that housing growth is outpacing employment growth and, therefore, there are more employed residents than jobs and may suggest that many residents are commuting to jobs outside the community. Imbalance is often a result of local land use policy; therefore, long-term job uses and housing in an urban area should eventually equalize with good planning practices, and thus reduce commuting.

Jobs/housing indices are more useful for examining the potential for "self-containment" at the regional level than for determining whether this self-sufficiency actually exists in a given community. Balance involves more than matching numbers of housing units and numbers of jobs. Even if communities have a statistical balance between jobs and housing, they are still very likely to experience in-commuting and out-commuting, given the variety and dispersed nature of employment and residential opportunities elsewhere in the region and the high level of mobility offered by automobiles. Trip-making decisions, including the choice of mode, are based on many factors. In the most rational scenario, mode choice is based on the relative time, cost, and availability of alternative transportation modes. However, mode choice is not simply the result of a rational decision between equally weighed travel tradeoffs. Based on theory and empirical research, the perceived cost, household characteristics, and land use also affect mode choice. Additional factors shape the context in which people make trip decisions, including the fact that two-income households usually work in different locations; frequent job turnover reduces the ability to locate with reference to one's workplace; and factors other than jobs access, such as quality of schools, housing prices, and access to other amenities, influence residential location choices as much as or more than proximity to employment. (Atlanta Regional Commission 2002.)

Because the "Land" portion of the project would provide employment opportunities in Sacramento County, including the City of Folsom, as well as the greater Sacramento region, and would be located on the El Dorado County line with off-site improvements being constructed in El Dorado County, the geographic area is defined as

El Dorado and Sacramento Counties. To allow for consistency in comparisons, the jobs/housing balance indices in this analysis were calculated using the SACOG Metropolitan Transportation Plan's (MTP's) estimated housing and employment projections for these counties. These projections were based on employment, population and housing growth in specific geographic locations using recent growth trends; planned projects (both adopted and in-process) in each jurisdiction; planning-related issues such as flood control, habitat and infrastructure; and the long-range planning projects in each location. The jobs/housing indices were determined by dividing the projected number of jobs by the projected number of housing units. (SACOG 2007:15-1.)

The ratio of jobs to housing varies considerably in Sacramento County. Rancho Cordova had the highest jobs ratio in 2005 with a jobs/housing index of 2.70, followed by the Cities of Sacramento and Folsom with jobs/housing indices of 1.99 and 1.29, respectively. Citrus Heights had the lowest jobs to housing ratio in 2005 with a jobs/housing index of 0.53. As a whole, the jobs/housing index for Sacramento County was 1.34 in 2005. Over the next 25 years, job growth is expected to improve the number of jobs compared to the number of employed residents living in the county and the jobs/housing index is projected to decrease in Sacramento County to 1.21 in 2035. (SACOG 2007:15-3.)

El Dorado County has maintained a low ratio of jobs-to-housing units. In 2005, the jobs/housing index for El Dorado County was 0.79. The majority of the county's employment growth has occurred in the unincorporated communities of El Dorado Hills and Cameron Park at the western edge of the county. These areas have experienced robust residential growth due to entitlement of several specific plans. Apart from additional commercial and industrial growth along U.S. 50, El Dorado Hills will continue to function as El Dorado County's main jobs center. Employment growth in the county is expected bring the jobs/housing index for El Dorado County to 0.98. (SACOG 2007:15-2, 15-3.)

The estimated number of jobs generated by the "Land" portion of the project and the number of employable residents in the SPA would depend on the project (action) alternative chosen for development. The jobs/housing index would be 1.2 for the Proposed Project Alternative, 1.3 for the Resource Impact Minimization Alternative, 1.5 for the Centralized Development Alternative, 1.1 for the Reduced Hillside Development Alternative, or 1.8 for the No Federal Action Alternative, which indicates that the project would be job rich regardless of the alternative implemented. The jobs/housing index for Folsom was 1.29 in 2005, and is projected to decrease to 1.23 in 2035, which indicates the city would remain job rich (SACOG 2007:15-2). Therefore, the project would cumulatively affect the city's jobs-housing balance.

At a more regional level, the jobs/housing index for Sacramento County was 1.34 in 2005 and is projected to decrease to 1.21 in 2035. Overall, the jobs/housing index for the Sacramento region (Sacramento, El Dorado, Placer, Sutter, Yolo, and Yuba Counties) as a whole was 1.24 in 2005 and is projected to decrease to 1.15 by 2035. The jobs/housing indices for these counties indicate that planned housing projects, including this project, are expected to provide housing opportunities and improve the current jobs/housing balance to approximately 1.15 jobs to one housing unit by 2035; however, the Sacramento region would remain slightly job rich. In this respect, the project would cumulatively affect the county and Sacramento region jobs-housing balance. (SACOG 2007:15-2.)

The jobs/housing index prepared for the "Land" portion of the project is not applicable to the No Project Alternative because the No Project Alternative consists of development of only 44 rural residences scattered over 3,500 acres. Therefore, the No Project Alternative would have a negligible effect on the jobs/housing balance .

PUBLIC SERVICES

In terms of cumulative impacts, the appropriate service providers are responsible for ensuring adequate provision of public services within their jurisdictional boundaries. As indicated in Section A3.14, "Public Services," public services would be provided to the SPA by the City of Folsom Fire Department, the City of Folsom Police Department, and the Folsom-Cordova Unified School District (FCUSD). The related projects within the City of

Folsom would use these same service providers. Related projects outside the City of Folsom would rely on different service providers, within Sacramento and El Dorado Counties. Significant impacts of the project analyzed in the EIR/EIS associated with the potential to impede the provision of emergency services during construction, increase demand for fire protection services and facilities, and adequate water pressure for fire flow would be reduced to less-than-significant levels through implementation of the mitigation measures identified in Chapter 3A.14, "Public Services - Land."

Future development in the City of Folsom would increase the demand for public services. In terms of cumulative impacts, appropriate service providers are responsible for ensuring adequate provision of public services within their jurisdictional boundaries. At this time, it is unknown whether sufficient police, fire, school facilities and other public services are planned to serve the related projects. While some of the related projects include proposals for the construction of service facilities, including schools, others do not. However, it is clear that sufficient police facilities, fire stations, and schools would need to be constructed to serve the related projects.

For the "Land" portion of this project, proposed on-site elementary and high schools would have sufficient capacity to accommodate students living in the SPA. In addition, these elementary and high school facilities would potentially have capacity for some additional students generated by related projects. Proposed on-site middle school facilities would have sufficient capacity to accommodate students generated under the Resource Impact Minimization, Centralized Development, and No Federal Action Alternatives. However, under the Proposed Project and Reduced Hillside Development Alternatives, the middle school would not accommodate all students, resulting in a shortfall of school services. The Proposed Project and Reduced Hillside Development Alternatives could potentially result in a significant cumulative environmental effect associated with the development of new school facilities. California Government Code Section 65996 provides that payment of school impact fees constitutes adequate CEQA mitigation for all project-specific and cumulative effects relating to adequacy of school facilities as a result of residential development.

Although a cumulative shortage of public services and facilities would not represent in itself a significant environmental impact under CEQA because these are not physical impacts on the environment, such a shortage would lead to the need to develop additional public-services facilities, which could in turn lead to significant construction- and operation-related physical impacts on the environment. It is assumed that the development of the related projects, and development of the additional public-services facilities required to serve them, would be preceded by the required CEQA review. However, conducting the required CEQA review of the related projects would not necessarily guarantee that significant environmental effects associated with construction of new fire, police, school facilities, and other public services would not occur. Hence, significant cumulative environmental indirect impacts associated with the development of new fire, police, school facilities, and other public services associated with the related projects could result in a cumulatively considerable impact.

At this time, it is unknown whether sufficient police, fire, school facilities and other public services are planned to serve the additional residential units which could be built under the proposed GPA. Implementation of existing City regulations and mitigation measures proposed in Section 3A.14, "Public Services - Land," would reduce these impacts to a less-than-significant level, but could require construction of new or expanded facilities to serve the new population, potentially resulting in a considerable contribution to a cumulatively significant impact.

Measure W would require the project applicant(s) to fund and construct fire, police, and school facilities in the SPA without reducing current service levels in the City. With payment of the state-mandated school impact fees, implementation of the "Land" portion of the project would also have a less-than-significant impact on school services and facilities. Therefore, the implementation of the "Land" portion of the project would not result in cumulatively considerable incremental contribution to a significant cumulative impact related to the development of necessary public services facilities.

Implementation of the "Water" portion of the project would allow the City to provide water service to new development within the SPA, including water service for fire protection, public safety, and educational activities.

Therefore, the "Water" portion of the project would have no impacts related to increased demand for public services and no cumulatively considerable impacts would occur.

TRAFFIC AND TRANSPORTATION

For traffic and transportation analysis purposes, cumulative conditions reflect year 2030 conditions, the anticipated build-out date of the SPA, and include the increased population that would be generated by the proposed GPA. Land use for the cumulative scenarios is based on the following sources: SACOG forecasts; the City of Folsom General Plan; the City of Rancho Cordova General Plan; the El Dorado County General Plan; the proposed Easton/Glenborough Specific Plan; the Cordova Hills area unapproved Phase I plan; and the proposed Teichert, Walltown, and DeSilva-Gates quarries south of the site. The cumulative traffic volume increases would result in unacceptable levels of service at various roadway segments, intersections, and freeway ramps in the study area as detailed in Section 3A.15, "Traffic and Transportation - Land," of this EIR/EIS. Furthermore, many of the identified impacts would occur outside of the City's jurisdiction and therefore the City cannot impose or enforce mitigation; however, it is expected that these impacts would be reduced to a less-than-significant level if the respective agencies, i.e., Caltrans, Sacramento County, El Dorado County, imposed and enforced specific mitigation measures. Buildout of the "Land" project, in conjunction with other planned, proposed, and approved projects in the vicinity, would result in cumulatively considerable increases to peak-hour and daily traffic volumes, even if the other agencies cooperated to implement mitigation measures.

Construction of the "Water" portion of the project would generate temporary and short-term and intermittent reductions of roadway capacities associated with the movement of construction equipment. Related projects within the Off-site Water Facilities Study Area include roadway improvement projects such as the White Rock Road Realignment and Widening Project, the Florin Road Widening Project, and the Capital Southeast Connector Project. Mitigation in Section 3B.15, "Traffic and Transportation - Water," would reduce the potential for traffic disruptions and temporary delays to a less-than-significant level through preparation of a traffic control plan. Over the long-term, operation of the "Water" portion of the project could generate a minimal number of new vehicle trips from employees traveling to and from the White Rock or Folsom Boulevard WTP and routine maintenance and inspection activities of the conveyance pipeline and booster pump station. Therefore, the "Water" portion of the project would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related to long-term increased traffic on local or regional roadways.

UTILITIES AND SERVICE SYSTEMS

Future development in Sacramento and El Dorado Counties would increase the demand for utilities in the region. In terms of cumulative impacts, the appropriate service providers are responsible for ensuring adequate provision of public utilities within their jurisdictional boundaries. As indicated in Sections 3A.16 and 3B.16, "Utilities and Service Systems," the necessary public utilities would be provided to the SPA by the City, SRCSD, EID, Sacramento Metropolitan Utility District (SMUD), Pacific Gas & Electric Company (PG&E), AT&T, and Comcast. Public utilities would be provided to the "Water" portion of the project by SMUD and AT&T. The related "Land" projects within the Cities of Folsom and Rancho Cordova would rely on similar service providers (with the exception of EID). Related projects outside the Cities of Folsom and Rancho Cordova would rely on a variety of service providers, within Sacramento and El Dorado Counties, some of which could include SRCSD, EID, PG&E, AT&T, and Comcast. The "Land" portion and "Water" portions of the project and the proposed GPA would result in less-than-significant impacts associated with increased demand for electrical and communications services and infrastructure, and the "Land" portion of the project would result in less-than-significant impacts associated with increased demand for SRCSD off-site wastewater collection and conveyance facilities; increased generation of solid waste; and increased demand for natural gas and cable television services and infrastructure. Tables 3A.16-3, 3A.16-4, and 3A.16-5 in Section 3A.16, "Utilities and Service Systems - Land," summarize wastewater generation, solid waste generation, and electrical and natural gas service demands, respectively.

Water Supply

Presently, there are no public water supply facilities in the SPA. Implementation of the "Water" portion of the project would allow the City to provide water service to new development within the SPA. The "Water" portion of the project proposes to acquire not more than 8,000 AFY of CVP settlement supply water from the NCMWC to meet the water supply demands at buildout of the "Land" portion of the project. That water would be permanently assigned to the City and this water supply would be provided by Reclamation for diversion from the Sacramento River.

In compliance with SB 610, the City has prepared a water supply assessment (WSA) to evaluate the adequacy of existing and future water supplies to meet the water demand created by the "Land" portion of the project in conjunction with existing and future development (Appendix M1). The WSA concluded that NCMWC would have sufficient surface water supplies to serve the "Land" portion of the project.

Water Conveyance and Treatment Facilities

Presently, there are no public water supply facilities in the SPA. A new on-site water system would be constructed and would include transmission and distribution pipelines, aboveground water storage tanks, and booster pump stations. The on-site water system would be incrementally expanded to meet the demands of the "Land" portion of the project.

The "Water" portion of the project would construct off-site water conveyance and treatment facilities to convey water to the SPA. These off-site facilities consist of (1) a point of diversion on the Sacramento River at the Freeport Project, (2) a raw or treated-water booster pump station, and (3) a raw or treated-water transmission pipeline to convey the water to the SPA. The point of diversion, booster pump station, and water transmission pipeline would be sized to accommodate not more than 6,000 AFY of water purchased from NCMWC. Water treatment would be provided through the Vineyard WTP or construction of the White Rock WTP or Folsom Boulevard WTP. The WTP alternatives would have an ultimate capacity of approximately 10 million gallons per day (mgd).

Implementation of mitigation measures in Sections 3A.16 and 3B.16, "Utilities and Service Systems," would reduce potentially significant project-related impacts related to on- and off-site water conveyance facilities to a less-than-significant level by ensuring that sufficient on- and off-site water conveyance infrastructure and facilities would be available to serve all "Land" portions of the project. Therefore, the "Land" and "Water" portions of the project would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related to water conveyance and treatment facilities.

WASTEWATER CONVEYANCE FACILITIES

The SPA is presently not served by any municipal wastewater collection and treatment systems. Approximately 3,313 acres of the SPA west of Empire Ranch Road is within the SRCSD service area and the remaining 189 acres east of Empire Ranch Road is within both the SRCSD and EID service areas.

A draft sewer master plan was prepared for the project to address the viability of providing sewer service to the SPA and identify on- and off-site facility needs and design. Proposed on-site wastewater collection trunk lines and all other planned elements of the wastewater system would be sized to accommodate planned wastewater flows.

The proposed GPA could result in construction of 546 units beyond those envisioned in the existing Folsom General Plan. In combination with future projects that may be built within the City of Folsom, the proposed GPA could contribute considerably to a potentially significant cumulative impact related to wastewater conveyance. Mitigation Measures 3A.16-1 and 3A.16-3 would require proof of capacity prior to approval of development under the proposed GPA, and would also result in a less than considerable cumulative contribution.

Sacramento Regional County Sanitation District

The wastewater generated within the 3,313-acre SRCSD service area would ultimately be conveyed to the Folsom South Pump Station that is north of Easton Valley Parkway and approximately 1,500 feet west of Oak Avenue. From the Folsom South Pump Station, the proponents of the Folsom South of U.S. 50 Specific Plan would construct an off-site force main to convey flows to an existing SRCSD 24-inch force main located within Iron Point Road north of U.S. 50 and downstream of the existing Folsom East 3B Pump Station. The existing 24-inch force main is currently a dry pipeline and was constructed as part of SRCSD's Folsom East Interceptor project for future use by the "Land" portion of the project. Therefore, the "Land" portion of the project and the proposed GPA would not result in a cumulatively considerable incremental contribution to a significant cumulative impact on SRCSD wastewater conveyance facilities.

El Dorado Irrigation District

Approximately 189 acres of the SPA east of Empire Ranch Road is within the EID service area and wastewater collection and conveyance facilities for that area would be provided by EID. Sewer flows from the EID service area would be conveyed to an existing pump station at the intersection of White Rock Drive and Winterfield Drive and ultimately conveyed to the El Dorado Hills Wastewater Treatment Plant (WWTP). The existing collection and conveyance facilities may not have the capacity to accommodate wastewater flows generated by the "Land" portion of the project om the EID service area and could require improvements to meet project demands. Implementation of mitigation contained in Section 3A.16, "Utilities and Service Systems - Land," would reduce significant impacts associated with increased demand for EID conveyance facilities to a less-than-significant level because adequate wastewater conveyance facilities would be documented before approval final maps and issuance of building permits.

However, potential improvements could include expanding the capacity of existing sewer pipelines, upgrading or replacing the existing pump, and installing an additional manhole; it is not known at this time what specific improvements would be required. Any improvements to these facilities would require additional analysis in a subsequent CEQA document to identify specific impacts and any required mitigation measures. Impacts resulting from improvements to EID collection and conveyance facilities could include: temporary, short-term generation of criteria air pollutants, such as PM_{10} (e.g., respirable particulate matter with a diameter smaller than 10 microns) and emissions of ozone precursors (e.g., reactive organic gases and oxides of nitrogen) during construction; temporary lane closures; increased truck traffic and other roadway impacts during construction; exposure of sensitive receptors to noise levels above noise ordinances during construction; exposure of sensitive noise receptors to new stationary-source noise from potential pump station improvements; and exposure of construction crews and the public to hazardous materials used in construction.

Since it is unknown if existing collection and conveyance facilities have the capacity to accommodate wastewater flows generated by project development, the "Land" portion of the project could directly and indirectly contribute to the need for off-site EID wastewater facility improvements. The "Land" portion of the project would contribute to the potentially significant environmental effects associated with improvements to these facilities for which feasible mitigation may not be available to reduce impacts to a less-than-significant level.

Because future improvements to the EID collection and conveyance facilities would be required to serve the project and other development in the EID service area, the environmental impacts of these facilities are associated with development of the project. Therefore, the "Land" portion of the project and related projects could contribute to the indirect and direct significant impacts associated with the future improvements to the collection and conveyance facilities that would be needed to serve the "Land" portion of the project and the related projects. Therefore, related projects could result in cumulatively considerable (i.e., significant) impacts associated with increased demand for wastewater conveyance facilities, and the "Land" portion of the project would result in a cumulatively considerable incremental contribution to this cumulatively significant impact.

Wastewater Treatment Facilities

Sacramento Regional County Sanitation District

Depending on the project or action alternative chosen for development, approximately 3.83 to 5.76 million gallons per day (mgd) of average dry-weather flow and 8.58 to 12.10 mgd peak wet-weather flow would be generated within the SRCSD service area (MacKay & Somps 2008b; Zoller, pers. comm. 2009).

The wastewater flows generated in the SPA, including the 189-acre portion of the SPA that would be served by EID, have been planned for in the SRCSD Master Plan 2000. The master plan estimates that buildout of the SPA would generate an average dry-weather flow of 6.82 mgd and a peak wet-weather flow of 14.48 mgd (SRCSD 2003b:Table 3-1). Because 189 acres of the SPA would be served by EID, the project-related average-dry weather flow and peak-wet weather flow would be less than those identified in the SRCSD Master Plan 2000.

The *Sacramento Regional Wastewater Treatment Plant 2020 Master Plan* (2001) provides for expansion of the Sacramento Regional Water Treatment Plant (SRWTP) to 218 mgd, and provides a phased program of recommended wastewater treatment facilities and management programs to accommodate planned growth through the year 2020. According to the 2020 Master Plan EIR, the permitted capacity (181 mgd) of the SRWTP was expected to be reached before 2010. However, flows to the SRWTP have consistently decreased between 2000 and 2006 from 155 mgd to 131 mgd. The reason for reduced flows is a result of water conservation efforts over the last 10 years. In addition, State legislation passed in 2009 and the SRCSD commitment to promote water supply reliability and Delta sustainability would substantially reduce the amount of wastewater generated in the future.

The expansion of the SRWTP to 218 mgd was based on growth rates expected to be achieved in the Sacramento County region by 2020. This projected capacity does not specifically include buildout of the "Land" portion of the project or the proposed GPA. Note that the 218 mgd total does not represent a buildout population total for SRCSD; rather, it represents the amount of growth expected within SRCSD based on projections. The SRCSD has determined that growth within the district is less than what was projected in the 2020 master plan and the SRWTP can provide capacity to future development beyond what was originally anticipated. Although there is expected to be sufficient SRWTP capacity to accommodate project flows through 2020, there would be no assurances that the SRWTP would have adequate capacity for new wastewater flows for the SPA occurring after 2020. Over time, additional planning at the SRWTP would occur, and overall capacity would be assessed and additional capacity planned for and added. The SRWTP site has sufficient land area to accommodate a substantially higher flow than 218 mgd; however, SRCSD's plans beyond the next 12 years are speculative.

Because there is a relationship between the "Land" portion of the project (and the proposed GPA) and the need for expansion of the SRWTP, implementation of the "Land" portion of the project and the proposed GPA would contribute indirectly and incrementally to the related impacts. As described in the 2020 Master Plan EIR, construction and operation of the expanded SRWTP would result in several environmental impacts (including impacts on water quality, hydrology, and fisheries), most of which would be reduced to a less-than-significant level through implementation of mitigation. The only significant and unavoidable impact would be from temporary, short-term increases in NO_X during construction of SRWTP facilities. However, the adequacy of the EIR for the 2020 Master Plan is being litigated (see Section 3A.16, "Utilities and Service Sysems - Land" for additional information). In addition to the impacts identified above, there is a potential that new significant impacts to water quality or other resources could be identified if the EIR for the SRWTP is found inadequate and impacts are re-analyzed. However, it is speculative to draw any such conclusion at this point.

The "Land" portion of the project, the proposed GPA, and the related projects would contribute to the need to expand wastewater treatment capacity at the SRWTP facility identified by SRCSD in its 2020 Master Plan; therefore, the "Land" portion of the project and the proposed GPA would contribute to a cumulatively

considerable incremental contribution to a significant cumulative impact related to the short-term impact on air quality from expansion of the SRWTP identified in the 2020 Master Plan EIR.

El Dorado Irrigation District

Depending on the project or action alternative chosen for development, approximately 0.05 to 0.31 mgd of average dry-weather flow and 0.14 to 0.78 mgd of peak wet-weather flow would be generated within the EID service area (MacKay & Somps 2008b).

Currently, the design capacity of the El Dorado Hills WWTP is 3.0 mgd average dry-weather flow and 7.6 mdg peak wet-weather flow. As of 2007, the average dry weather flow is approximately 2.86 and the peak wet-weather flow is 8.04 mgd. Expansion of the WWTP is required to provide wastewater treatment capacity for land uses in El Dorado Hills as identified by the El Dorado County General Plan (2003). The treatment plant is currently being expanded to 4.0 mgd, which is anticipated to be completed in 2010. The full buildout of the treatment plant to 5.4 mgd is expected to occur by 2025.

Implementation of mitigation in Section 3A.16, "Utilities and Service Systems - Land," would reduce significant impacts associated with increased demand for wastewater treatment plant facilities from development of the Folsom South of U.S. Specific Plan to a less-than-significant level because adequate wastewater treatment facilities would be documented before approval of final maps and issuance of building permits.

However, the SPA was not included in the planned future capacity of the El Dorado Hills WWTP; therefore, this project would potentially result in increased in wastewater flows that exceed treatment plan capacity. Any improvements to the treatment plant would require additional analysis in a separate CEQA document to identify specific impacts and any required mitigation measures. Impacts resulting from improvements to the El Dorado Hills WWTP could include: temporary, short-term generation of criteria air pollutants such as PM_{10} and emissions of ozone precursors (e.g., reactive organic gases and oxides of nitrogen) during construction; generation of new odors from operation of expanded treatment plant facilities; degradation of water quality from increased discharges to Carson Creek; temporary roadway lane closures, increased truck traffic, and other roadway impacts during construction; exposure of sensitive receptors to noise levels above noise ordinances during construction; and exposure of construction crews and the public to hazardous materials used in construction.

It is unknown if the existing El Dorado Hills WWTP has the capacity to accommodate wastewater flows generated by development of the EID portion of the SPA, and whether the "Land" portion of the project could directly and indirectly contribute to the need for El Dorado Hills WWTP improvements. Therefore, the "Land" portion of the project could contribute to the potentially significant environmental effects associated with improvements to treatment plant facilities for which feasible mitigation may not be available to reduce impacts to a less-than-significant level.

Because future improvements to the EID WWTP would be needed to serve the "Land" portion of the project and other developments in the EID service area, the environmental impacts of these facilities would be associated with development of the "Land" portion of the project. Therefore, the "Land" portion of the project and related projects could contribute to the indirect and direct significant impacts associated with the future improvements to the EID WWTP that would be needed to serve the project and the related projects. Therefore, related projects could result in cumulatively considerable (i.e., significant) impacts associated with increased demand for wastewater conveyance facilities, and the project would result in a cumulatively considerable incremental contribution to this cumulatively significant impact.

Solid Waste

Operation of the "Land" portion of the project and the proposed GPA would incrementally increase generation of solid waste throughout buildout in the year 2030. Depending on the project (action) alternative chosen for development, approximately 67.3 to 113.9 tons per day (tpd) of solid waste would be generated for disposal at

Kiefer Landfill. The landfill is permitted to accept 10,800 maximum tpd of solid waste; however, the average intake is only approximately 6,000 tpd. The landfill is permitted to accept a maximum of 10,800 tpd of solid waste. The Kiefer Landfill receives over 700,000 tons of waste per year (Sacramento County 2009a:4-2). The landfill has a total capacity of 117 million cubic yards, and a remaining capacity of 113 million cubic yards. Currently, the landfill has a closure date of 2064. (California Integrated Waste Management Board [CIWMB] 2008.) The project-related impact from increased generation of solid waste is less than significant. Because Kiefer Landfill would have adequate capacity to serve the "Land" portion of the project, the GPA and other development in its service area, implementation of the "Land" portion of the project, the GPA, and the related projects would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related to solid waste.

Electricity

SMUD is the electrical service provider for Folsom and would provide electrical service for the "Land" and "Water" portions of the project. Depending on the project alternative chosen for development under the "Land" portion of the project, the project would increase electrical demand in the SMUD service area by an average of 35.7 to 55.5 megavolt amperes (MVA) with a peak demand of 75.9 to 118.7 MVA (Capitol Utilities Specialists 2009:4). SMUD concurs with this assessment; however, SMUD has calculated the worst-case scenario as increasing electrical demand by a total of 120 MVA (Capitol Utilities Specialists 2009:5; Kim, pers. comm., 2009).

The "Land" and "Water" portions of the project and cumulative development of the related projects would increase the demand for electricity within SMUD's service area. SMUD has long-term contracts with other generators to provide an additional 1,189 megawatt (MW) of electricity for distribution per day. Throughout the year, SMUD buys and sells energy and capacity on a short-term basis to meet load requirements and reduce costs. In 2007, SMUD generated approximately 10,917 million kilowatt (kW) hours of electricity within its service area (California Energy Commission [CEC] 2008a).

SMUD received approval from CEC to build the first phase of the 500-MW Cosumnes Power Plant (CPP), which provides SMUD with 1,000 MW of power to ensure SMUD's long-range plans to meet the growing power needs of Sacramento County. The gas-fired plant, which came on line in 2006, provides enough power to meet the annual needs of 450,000 single-family homes (SMUD 2006). In addition to the CPP, SMUD has the Upper American River Project, which consists of 11 reservoirs and eight powerhouses that generate enough electricity to meet nearly 15% of SMUD's customer demand. The Upper American River Project can provide approximately 1.8 billion kW hours of electricity during a normal water year, which is enough energy to power about 180,000 homes (SMUD 2009).

SMUD currently has existing capacity to serve the "Land" portion of the project and the GPA from its electrical distribution system north of U.S. 50 (Capitol Utility Specialists 2009:5). To provide service within the SPA, SMUD has determined that a minimum of three distribution substations would be required to serve the proposed development. Also, a new 69-kV overhead transmission line would be constructed along Old Placerville Road from U.S. 50 to White Rock Road. Additional overhead transmission lines may be required depending on the location of the distribution substations. SMUD has stated that it has adequate electricity supplies to support the "Land" portion of the project without affecting service to existing customers and that it would provide new electrical infrastructure (Kim, pers. comm., 2009).

For the "Water" portion of the project, the booster pump station and WTP alternatives would increase demands for electricity. Electrical distribution infrastructure exists adjacent to each of the WTP alternatives sites and any improvements and extensions required to accommodate the "Water" portion of the project would be limited to on-site locations and performed in consultation with SMUD prior to installation. Therefore, the project-related impact from increased demand for electricity supplies and infrastructure is less than significant and the "Land"

and “Water” portions of the project would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related to increased demand for electrical service.

Natural Gas

PG&E is the natural gas supplier for Folsom and would provide natural gas service for the “Land” portion of the project, the proposed GPA, and related projects within its service area. Depending on the alternative chosen, natural gas demand would increase by 655.9 to 1,050.7 thousand cubic feet per hour within the PG&E service area.

The “Land” portion of the project and cumulative development of the related projects would increase the demand for natural gas. Implementation of the “Land” portion of the project would require two additional transmission mains and two natural gas regulator stations to provide service to the “Land” portion of the project at full build-out. PG&E has indicated that it currently has capacity in its system to serve the SPA and the related projects within its service area. PG&E is able to provide natural gas and associated infrastructure to the SPA and the increase in demand for natural gas would not be substantial in relation to existing natural-gas consumption in PG&E’s service area. Therefore, the project-related impact from increased demand for natural gas is less than significant and the “Land” portion of the project would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related to increased demand for natural gas.

The “Water” portion of the project would not require natural gas service. Therefore, the “Water” portion of the project would have no impacts related increased demand for natural gas and no cumulatively considerable impacts would occur.

Communications and Cable Television

The “Land” and “Water” portions of the project, the proposed GPA, and cumulative development of related projects would increase the demand for communications and cable television service. AT&T would provide communications service and infrastructure to the SPA. The “Land” portion of the project would receive service from the Folsom Nimbus Wire Center and the El Dorado Wire Center. Residential service would be provided via fiber-optic cable and commercial and retail service would be provided via copper or fiber-optic cable. AT&T would be able to provide the necessary telecommunications services and infrastructure without affecting service to its existing customers.

Comcast would provide cable television service and infrastructure to the SPA. Comcast generally improves or relocates hub sites as the need arises to meet customer demand. Comcast would extend service to the SPA via existing facilities. The “Water” portion of the project would not require cable television service; therefore, the “Water” portion of the project would have no impacts related increased demand cable television and no cumulatively considerable impacts would occur.

Because AT&T and Comcast would provide communications and cable television service and associated infrastructure to the SPA, the project-related impact from increased demand for communications and cable television services is less than significant. Therefore, related projects and other development in the region are not considered to result in a cumulatively considerable impact related to communications and cable television service, and the proposed project would not result in a cumulatively considerable incremental contribution to a significant cumulative impact.

4.2 GROWTH-INDUCING IMPACTS

4.2.1 INTRODUCTION

According to the CEQA Guidelines (CCR Section 15126.2[d]), an EIR must discuss the growth-inducing impacts of a project. In other words, the EIR must examine whether a project would lead to economic or population growth or would encourage development or other activities that could result in physical impacts on the environment. Specifically, CEQA states that the EIR shall:

> [d]iscuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects that would remove obstacles to population growth (a major expansion of a wastewater treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also, discuss the characteristics of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

Direct growth-inducement would result if a project involved construction of new housing. Indirect growth-inducement would result, for instance, if implementing a project resulted in any of the following:

- substantial new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises);
- a construction effort with substantial short-term employment opportunities that indirectly stimulates the need for additional housing and services to support the new temporary employment demand; or,
- removal of an obstacle to additional growth and development, such as removing a constraint on a required public utility or service (e.g., construction of a major sewer line with excess capacity through an undeveloped area) or adding development adjacent to undeveloped land.

Growth-inducement itself is not an environmental effect, but it may foreseeably lead to environmental effects. These environmental effects may include increased demand on other community and public services and infrastructure, increased traffic and noise, degradation of air or water quality, degradation or loss of plant or animal habitats, or conversion of agricultural and open space land to urban uses.

4.2.2 SUMMARY OF GROWTH PLANNED IN THE CITY OF FOLSOM GENERAL PLAN

The City of Folsom General Plan (1988) provides for physical, economic, and environmental growth of the City. The City's General Plan is oriented toward the physical development of land uses, a circulation network, and supporting public facilities and services. As a whole, the general plan is intended to retain and enhance Folsom's quality of life, separate identity, and sense of community.

The following population data for the City of Folsom are taken from City of Folsom General Plan Housing Element Background Report, adopted June 25, 2002. The population data in the City's adopted Housing Element is drawn largely from the City's 1992 Housing Element, 1990 and 2000 U.S. Census Bureau data, DOF, and SACOG. As presented in the background report, Folsom's population was anticipated to increase from 51,884 in 2000 to 74,185 in 2010, an average annual growth rate of 3.6%. As of January 1, 2009, the population of Folsom was estimated to be 71,018 (DOF 2009), indicating that growth was closely tracking projections.

The City is the process of updating its General Plan Housing Element for the planning period of January 1, 2006 to June 30, 2013. The Draft Housing Element is based on 2000 U.S. Census Bureau data, DOF data (2007), and SACOG's most recent projections released in 2007. The City's Draft Housing Element (2008) estimates the population of Folsom will grow to 69,800 in 2013 and 76,333 in 2015 (but also show that expected population levels in 2013 may have already been eclipsed). These population projections show a substantial decline in growth from what occurred between 1990 and 2008. By 2035, population is anticipated to increase to 97,485 persons. These projections do not include population that would be generated by the project or the excess 546 units which could occur under the proposed GPA.

4.2.3 GROWTH-INDUCING IMPACTS OF THE PROJECT

DENSITY OF DEVELOPMENT

The SPA is located in unincorporated Sacramento County immediately south of the Folsom city limits (see Exhibits 2-1 and 2-2 in Chapter 2, "Alternatives"). The SPA is currently designated by the Sacramento County General Plan (1993) as General Agriculture (80 acres) and General Agriculture (80 acres)/Resource Conservation Area and is zoned by the Sacramento County zoning codes as AG-80 (Agricultural, 80-acre minimum lot size), AG-20 (Agricultural, 20-acre minimum lot size), A-10 (Interim Agricultural, 10-acre minimum lot size), and SPA (Special Planning Area). As such, up to 44 rural residences could be developed under the existing Sacramento County agricultural land use and zoning classifications.

In June 2001, the Sacramento Local Agency Formation Commission (LAFCo) approved the City's sphere of influence amendment application (Resolution No. LAFC 1196), and the City's sphere of influence was expanded to include the SPA. As part of the amendment approval, LAFCo identified conditions to ensure that future annexation of the SPA would include adequate services for new development within proposed annexation areas; avoid premature conversion of agricultural resources; preserve open space; and encourage planned, logical, and orderly patterns of urban growth. (See Chapter 2, "Alternatives," for a detailed discussion of the project background and history, including the LAFCo resolution, Memorandum of Understanding, and Measure W.)

Following LAFCo's approval of the annexation, if this occurs, Sacramento County would relinquish land use planning authority to the City, and the Sacramento County General Plan would no longer apply to the annexed areas. The project would require approval of a general plan amendment by the City of Folsom designating the SPA for urban uses consistent with the Specific Plan, and the City's jurisdictional boundary would be expanded to include the SPA. These actions are proposed with the project.

Sacramento Area Council of Governments' Sacramento Region Blueprint

The SACOG Blueprint identifies the SPA as a future planned community that would accommodate the long-term needs of Folsom and contribute to the Sacramento region. The SACOG Blueprint Preferred Scenario anticipates the project would generate approximately 7,500 jobs and develop 12,000 households (City of Folsom 2007). The Blueprint's land use designation for the SPA is illustrated in Exhibit 3.10-2, in Section 3.10A, "Land Use and Agricultural Resources - Land." It should be noted that SACOG has no land use authority. SACOG makes clear that the land use designations presented on the Blueprint are conceptual and reflect general land use locations in a local area.

Depending on the alternative selected, project implementation could result in conflicts between the project and the SACOG Sacramento Region Preferred Blueprint Scenario. The Blueprint envisions a higher density of development in the SPA than proposed under the Resource Impact Minimization and No Federal Action Alternatives. Although lower density development on a particular property may reduce the levels of impacts occurring on or emanating from the property, low densities can be considered an inefficient use of finite land resources. In areas with growing populations, low-density development can push market demand for development outward toward other areas on the urban periphery, ultimately resulting in a greater overall loss of habitat, open

space, and farmland. In the long term, these alternatives would be growth inducing and could result in greater expansion of the overall regional urban areas.

Although the Proposed Project, Centralized Development, and Reduced Hillside Development Alternatives would include a greater density of residential development and exceed the jobs projections identified in the Blueprint for the SPA, these alternatives fulfill the principles of smart growth identified in the Blueprint. These alternatives would allow for a system of multimodal transportation; would provide a variety of mixed-use areas and a range of housing choices; and would emphasize compact development, quality design, and natural resource conservation. Under smart growth principles, areas that are planned for development are developed at higher than typical densities. Although these higher densities may result in greater on-site impacts on biological, cultural, open-space, and agricultural resources, the overall area of disturbance within the region is reduced in the long term as development is concentrated in particular locations. Further, higher densities make public transit more feasible, potentially taking relative pressure off highways compared with traditional automobile-dependant development. Sacramento County is experiencing demographic pressure reflecting an increasing statewide population and intrastate migration from the San Francisco Bay Area, and the City of Folsom is interested in furthering its goals and objectives of providing a mix of housing and new jobs to its residents. Smart growth principles therefore suggest that developing the site with a higher density use while avoiding wetland areas would focus market demand for development into an area near existing development, infrastructure, and services. Thus, the Proposed Project, Centralized Development, and Reduced Hillside Development Alternatives would be growth-inducing, the higher density of development would likely provide a regional environmental benefit in terms of development patterns over the long term.

ROADWAY IMPROVEMENTS

Access to the SPA would be provided by improved roads along existing roadway alignments in the project vicinity and new roads within the SPA itself. The following off-site roadway improvements would be necessary to serve the Proposed Project or the other four action alternatives, all of which would serve the project and provide access through the SPA to adjacent properties:

- improvements to the existing interchange at U.S. 50 and Prairie City Road,
- a new interchange at U.S. 50 and Oak Avenue,
- a new overcrossing of U.S. 50 at Rowberry Drive,
- improvements to the existing interchange at U.S. 50 and Scott Road/East Bidwell Street (improvements for traffic from the south only), and
- a new interchange at U.S. 50 and Empire Ranch Road.

Growth in the SPA, and as a result of other projects in Sacramento and El Dorado Counties, would result in the need for capacity improvements to existing off-site roadways, including state highways, arterial roadways, and regional intersections. SACOG's Metropolitan Transportation Plan for 2035 (MTP 2035) addresses the regional transportation needs for Sacramento, El Dorado, Placer, Sutter, Yolo, and Yuba Counties through 2035 based on land use assumptions in the Preferred Blueprint Scenario (SACOG 2007: 21-1). The 2035 MTP has several planned roadway improvements in and in the vicinity of the SPA including:

- U.S. 50 car pool lane extensions and new auxiliary lanes from El Dorado Hills to Shingle Springs interchange;
- U.S. 50 mainline widening from Silva Ranch Parkway to Empire Ranch Road interchange;

- U.S. 50 new carpool lanes from Sunrise Boulevard to downtown Sacramento and new auxiliary lanes at various locations in Sacramento;
- White Rock Road widening to four lanes from Manchester Road to El Dorado/Sacramento County line, from Latrobe Road to U.S. 50/Silva Parkway Interchange, and from Grant Line Road to Prairie City Road;
- Prairie City Road widening to four lanes from U.S. 50 to White Rock Road; and
- Oak Avenue widening to four lanes from U.S. 50 to White Road.

These improvements, which would also serve the SPA, were identified as necessary to serve existing traffic and future development anticipated in El Dorado and Sacramento Counties. Roadway improvements are considered growth-inducing because they would serve the project, would provide access through the SPA to adjacent properties, and would provide enhanced access to currently undeveloped areas that are planned for future development. Growth pressure on these lands could potentially result in the loss of agricultural land and biological habitat, the generation of additional traffic, and the creation of air quality and noise impacts.

UTILITIES AND SERVICE SYSTEMS

Stormwater Drainage

No public storm drain facilities currently serve the SPA. Development of the project would require that a new urban storm drainage management system be provided to effectively drain the site, control flooding, and provide water quality benefits. A network of conveyance pipes, inlets, manholes, and regulating structures would direct runoff flows into a network of 16 on-site detention basins and one off-site basin west of Prairie City Road, and would incorporate water quality treatment. The on-site storm system and off-site detention basin would not be sized or intended to serve any new development on lands other than the SPA and therefore would not be growth inducing.

Water Supply

The "Water" portion of the project proposes to acquire not more than 8,000 AFY of CVP contract entitlement water from the NCMWC to meet the water supply demands at buildout of the "Land" portion of the project. CVP contract entitlement water would be permanently assigned to the City and this water supply would be provided by Reclamation for diversion from the Sacramento River. The CVP contract supplies acquired by the City as part of the Offsite Water Facilities would more than satisfy demands associated with all phases of development within the SPA during normal and dry years (for information on project phasing, please refer to Section 2.3.1 in Chapter 2, "Alternatives"). This higher quantity of water is required to factor in the 25% reduction that could occur in dry years thereby reducing the quantity delivered to 6,000 AFY. This shortage provision could leave a margin of only 400 AFY between the project demand at build-out and the available surface water supply. In recognition of this surplus, which ranges from 400 AFY in dry years up to 2,000 AFY, the City intends to make these supplies available to the NCMWC for diversion for irrigation. Under the "Land" portion of the project, the normal–year and dry-year water demands are estimated to be 5,421 AFY and 5,557 AFY respectively, for the Proposed Project Alternative. Based on the demand projections, the capacity of the conveyance and treatment improvements would be sufficient to supply projected growth through 2030. However, in assuming a lower growth rate or the addition of non-potable water supplies, the 10 mgd capacity improvements could be adequate to support additional growth through a longer period, thereby outdating the planning horizon of the Folsom Specific Plan.

The City has identified water supply and associated infrastructure as a constraint to growth within the SPA. Given that the primary objectives of the "Water" portion of the project is to secure a reliable water supply for the SPA and construct the necessary conveyance and treatment improvements to meet peak water demands, the Offsite Water Facilities would remove this obstacle. With additional conservation or recycled water, this water supply acquired for the SPA could be reasonably stretched to serve areas outside the SPA beyond 2030; although no

specific development proposal has been filed with Sacramento County. In this context, the "Water" portion of the project could indirectly facilitate growth and related secondary effects beyond the SPA in future years beyond 2030. The potential secondary effects could include the following types of impacts that are analyzed programmatically for the "Land" portion of the project:

- impacts to air quality from ozone precursors, particulate matter, TACs, and GHGs;
- increases in the ambient noise environment;
- increased traffic delay and intersection congestion;
- potential land use conflicts;
- potential impacts to special-status biological resources, wetlands, and vegetation, and other sensitive communities;
- potential impacts to historical and/or archaeological resources; and
- increased demands for public services and utility infrastructure.

Based on the discussion provided above, the degree of growth accommodation offered by "Water" portion of the project is attributed to the provision of a critical public infrastructure, in the form of potable water supplies and related infrastructure. This infrastructure would serve planned development within the SPA and new projects that might be proposed in conjunction beyond the SPA in future years beyond 2030. In this context, the securing of 8,000 AFY of CVP water and constructing the necessary conveyance and treatment infrastructure could contribute to significant and unavoidable impacts associated with the secondary effects of growth inducement.

Mitigation measures conditioned on new development in the future would be speculative to infer in this EIR/EIS. In this context, even following the application of mitigation, several of these secondary effects of growth could remain significant and unavoidable. Because the Proposed Project and the other four action alternatives would also result in a surplus of water that could be used to serve other projects in future years beyond 2030, implementing the Proposed Project or any of other four action alternatives would also contribute to significant and unavoidable impacts associated with the secondary effects of growth inducement.

There are no public water supply facilities in the SPA. On-site water supply distribution facilities (including transmission and distribution pipelines, aboveground water storage tanks, booster pumps, and potentially an on-site WTP) would be constructed specifically to serve the "Land" portion of the project and would not be connected to any existing water supply system. The on-site water transmission system and WTP would be sized to accommodate project-related water demands; therefore, on-site water supply distribution facilities would not be growth inducing.

Wastewater Conveyance and Treatment Facilities

The SPA is presently not served by any municipal wastewater collection and treatment systems. Project implementation would result in increased generation of wastewater and construction of wastewater collection and conveyance facilities. The proposed on-site sewer system would be constructed specifically to serve the Project and would be sized to accommodate planned project sewer flows.

Approximately 3,313 acres of the SPA west of the planned extension of Empire Ranch Road is within the SRCSD service area, and the remaining 189 acres east of the planned extension of Empire Ranch Road is within both the SRCSD and EID service areas.

The project-generated wastewater within the 3,313-acre SRCSD service area would ultimately be conveyed to the Folsom South Pump Station north of Easton Valley Parkway and approximately 1,500 feet west of Oak Avenue. From the Folsom South Pump Station, the project would construct an off-site force main to convey flows to an existing SRCSD 24-inch force main located within Iron Point Road north of U.S. 50 and downstream of the existing Folsom East 3B Pump Station. The existing 24-inch force main is currently a dry pipeline and was constructed as part of SRCSD's Folsom East Interceptor project for future use by the project; therefore, it would not be growth-inducing.

Wastewater flows from within the SRCSD service area would ultimately be transported to SRWTP for treatment and disposal. The SRWTP receives and treats an average of 141 mgd (as of 2008) and has a permitted dry-weather flow design capacity of 181 mgd. Flows to the SRWTP would increase over time as the population in the SRCSD service area increases. According to the *Sacramento Regional Wastewater Treatment Plant 2020 Master Plan* (2020 Master Plan), the permitted capacity of the SRWTP was expected to be reached before 2010. However, the actual rate of growth in demand has substantially slowed, and flows to the SRWTP have consistently decreased between 2000 and 2008, from 155 mgd to 141 mgd. The 2020 Master Plan provides for the expansion of the SRWTP to 218 mgd based on growth rates expected to be achieved in the Sacramento County region by 2020. This flow rate does not represent a buildout population total for SRCSD; rather, it represents the amount of growth expected within the district based on projections. The SRCSD has determined that growth within the district is less than what was projected in the 2020 master plan and the SRWTP can provide capacity to future development beyond what was originally anticipated and there is no threat that permitted capacity will be reached over the next several years. Over time, additional planning at the SRWTP would occur, and overall capacity would be assessed and additional capacity planned for and added. Upgrades to the SRWTP would occur without development of the Project, are required to serve regional development, and would be needed whether or not the project is developed. Expansion of the SRWTP is planned to be phased to provide for sufficient long-term capacity for regional development. Because the SRWTP is planned to accommodate growth in the region by 2020, development in the SPA that occurs by 2020 would be accommodated by planned SRWTP capacity. The SRWTP site has sufficient land area to accommodate a substantially higher flow than 218 mgd; however, future plans beyond the next 12 years are speculative. The project and regional development would contribute to the need to expand wastewater treatment capacity at the SRWTP facility and therefore would be growth inducing.

Approximately 189 acres of the SPA east of the planned extension of Empire Ranch Road is within the EID service area and off-site wastewater collection and conveyance facilities would be provided by EID. Sewer flows from the EID service area would be conveyed to an existing pump station at the intersection of White Rock Drive and Winterfield Drive and ultimately conveyed to the El Dorado Hills WWTP. The existing collection and conveyance facilities may not have the capacity to accommodate wastewater flows generated by the Project and could require improvements to meet project demands. The EID wastewater conveyance facilities would not be sized or intended to serve any new development on lands other than the SPA and therefore would not be growth-inducing.

Currently, the design capacity of the El Dorado Hills WWTP is being expanded to provide wastewater treatment capacity for land uses in El Dorado Hills as identified by the El Dorado County General Plan (2003), to meet anticipated regulatory requirements for water quality, and to help meet recycled water demands. The treatment plant is currently being expanded to 4.0 mgd, which is anticipated to be completed in late 2010. The full buildout of the treatment plant to 5.4 mgd is expected to occur by 2025. However, the SPA was not included in the planned future capacity of the El Dorado Hills WWTP; therefore, the project would potentially result in increased in wastewater flows that exceed treatment plant capacity. Any additional improvements to the WWTP required to serve the project would not add capacity for use by any new development other than the SPA and therefore would not be growth-inducing.

CONSTRUCTION-RELATED HOUSING DEMAND

Project construction activities would occur at intervals throughout the planning horizon of the project, and the site would ultimately be built out in approximately 19 years (2011-2030). It is estimated, based on prior analyses of similar projects, that project-related construction would generate approximately 500 construction jobs during the peak construction period of each of the four phases (for information on project phasing, please refer to Section 2.3.1 in Chapter 2, "Alternatives"). A greater number of construction workers would be employed during peak construction periods (determined by market demand and overall economic conditions), while fewer construction workers would be employed during nonpeak periods.

Construction workers serving the project can be expected to come from Folsom and El Dorado Hills, and other nearby communities in Sacramento, El Dorado, and nearby counties. According to the latest labor data available from the U.S. Census Bureau (2007), it is estimated that 2,269 residents in Folsom, 54,964 residents in Sacramento County, and 850 residents in El Dorado Hills are employed in the construction industry. These existing residents in the city and counties who are employed in the construction industry would likely be sufficient to meet the demand for construction workers that would be generated by the project. Because construction workers serving the project could be expected to come from Folsom itself and from nearby communities in Sacramento County or El Dorado County, neither substantial population growth nor an increase in housing demand in the region is anticipated as a result of these jobs. Furthermore, because construction workers typically do not change residences each time they are assigned to a new construction site, it is not anticipated that there would be any substantial project-related relocation of construction workers to the immediate project area.

PUBLIC SERVICES

The project includes construction of two fire stations, one police service center, five elementary schools, and one combined middle school/high school, at different locations in the SPA. The timing of construction and staffing of each fire station and the police station would be completed in a manner that ensures that adequate levels of service are provided. Measure W would require the applicants to fund and construct fire, police, and school facilities in the SPA without reducing current service levels in the City.

Five elementary schools and one combined middle school/high school would be constructed in the SPA. The proposed on-site elementary schools and the high school would have sufficient capacity to accommodate students living in the SPA. In addition, these elementary and high school facilities would potentially have capacity for some additional students. Proposed on-site middle school facilities would have sufficient capacity to accommodate students generated under the Resource Impact Minimization, Centralized Development, and No Federal Action Alternatives. However, under the Proposed Project and Reduced Hillside Development Alternatives, the middle school would not accommodate all of the project-generated students, resulting in a shortfall of school services. However, the project applicants must comply with Measure W, and therefore the project applicants would be required to fund and construct sufficient middle school facilities to serve students generated by the Project. At project buildout, the elementary and high schools could accommodate all students generated by the Project as well as other students residing elsewhere in Folsom.

Implementing the Proposed Project or the other four action alternatives would not facilitate additional development with respect to public services (with the exception of schools) because the Proposed Project and the other four action alternatives would provide or ensure that additional public services would be available to meet project demands, and it would not create additional public service capacity in Folsom beyond what would be necessary to serve project development.

JOBS/HOUSING BALANCE

As described in Section 4.1, "Cumulative Impacts," the simplest measure of jobs/housing balance is an index based on the ratio of employed residents (which is influenced by the number of homes) to jobs in the area. An

index of 1.0 indicates a jobs/housing balance. An index above 1.0 indicates that employment growth is outpacing housing growth and, therefore, there are more jobs than employed residents, and may suggest that many employees are commuting in from outside the community. An index below 1.0 indicates that housing growth is outpacing employment growth and, therefore, there are more employed residents than jobs and may suggest that many residents are commuting to jobs outside the community. For the Proposed Project and the other four action alternatives, the jobs/housing indices were determined by dividing the projected number of jobs by the projected number of housing units.

The estimated number of jobs generated by the project and the number of employable residents in the SPA would depend on the project alternative chosen for development. The jobs/housing index would be 1.3 for the Proposed Project Alternative (13,210 jobs and 10,210 housing units), 1.2 for the Resource Impact Minimization Alternative (9,501 jobs and 7,965 housing units), 1.5 for the Centralized Development Alternative (13,575 jobs and 9,026 housing units), 1.1 for the Reduced Hillside Development Alternative (14,180 jobs and 12,995 housing units), or 1.8 for the No Federal Action Alternative (11,171 jobs and 6,373 housing units). These indices indicate that the project would be job-rich regardless of the alternative implemented, with jobs generated in excess of proposed number of housing units for each alternative.

The jobs/housing index for Folsom was 1.29 in 2005, and is projected to decrease to 1.23 in 2035. Although the city's jobs/housing index is expected to improve, the city would remain job rich (SACOG 2007:15-2). The excess jobs associated with Proposed Project and the other four action alternatives would be considered as contributing to increased housing demand in Folsom.

At a more regional level, the jobs/housing index for Sacramento County was 1.34 in 2005 and is projected to decrease to 1.21 in 2035. Overall, the jobs/housing index for the Sacramento region (El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba Counties) as a whole was 1.24 in 2005 and is projected to decrease to 1.15 by 2035. The jobs/housing indices for these counties indicate that planned housing projects, including this project, are expected to provide housing opportunities and improve the current jobs/housing balance to approximately 1.15 jobs to one housing unit by 2035; however, the Sacramento region would remain slightly job rich. If these workers could not be accommodated by housing units in the region, then new housing units beyond those anticipated in the Sacramento region would be needed to meet the housing demand generated by the proposed jobs. In this respect, implementation of the Proposed Project or the other four action alternatives would create a housing demand and would be growth inducing. (SACOG 2007:15-2.)

CONVERSION OF ADJACENT UNDEVELOPED LAND TO URBAN DEVELOPMENT

Surrounding land use designations are primarily determined by El Dorado and Sacramento Counties and the City of Folsom (see Exhibit 3A.10-2 in Section 3A.10, "Land Use and Agricultural Resources - Land"). The lands east of the SPA are located the unincorporated area of El Dorado County and are governed by the El Dorado County General Plan land use designations. These lands are currently developed in residential land uses.

Land north of the SPA is located within the existing Folsom city limits and is governed by the City of Folsom General Plan. This area consists of large residential and commercial developments, several of which are currently under construction or have been recently completed.

Lands south and west of the SPA are located in an unincorporated area regulated by the Sacramento County General Plan. Industrial land owned by Aerojet General Corporation and associated buffer lands are located to the west of Prairie City Road. The majority of these lands are designated by the Sacramento County General Plan as Industrial Extensive and zoned SPA (Special Planning Area) and are intended for future Aerojet General Corporation industrial buffer lands or are part of the Easton Specific Plan area.

Lands south of the SPA are characterized primarily by seasonal grazing land. These lands are designated by the Sacramento County General Plan as General Agriculture (80 acres) and are zoned AG-80 (Agricultural, 80-acre

minimum lot size) and SPA (Special Planning Area), which identifies areas that are intended for long-term agricultural purposes and have parcels large enough to maintain economically viable farming operations.

As the Project is developed, it would place urban development adjacent to undeveloped grazing lands south of the SPA. Historically, economic returns from urban development are typically substantially higher than continued use of undeveloped land, and encroaching urban uses typically make attractive the conversion of other undeveloped land to urban uses. Thus, it could be reasoned that implementing the Proposed Project or the other four action alternatives would place pressure on land south of the SPA to convert to urban uses. No urban development is currently proposed immediately south of the SPA. The land south of the SPA is located in a rural unincorporated portion of Sacramento County beyond the USB. The USB defines the ultimate boundary of urban development and is intended to be permanent, allowing modification only under special circumstances. These lands are not within the UPA, and it is not expected this area would receive urban levels of public infrastructure and services to support urban development. Further, because it would require Sacramento County to amend its general plan, land use designations, and zoning, such a land use conversion to urban development is not assured.

Approximately 2,493 acres of the SPA consists of agricultural lands under existing Williamson Act contracts. Project implementation would require the cancellation of one or more of these Williamson Act contracts before their expiration date because the proposed land uses would not be permitted under the existing contracts. Removing the impediment of Williamson Act contracts for urban development in the SPA could induce additional urban development south of White Rock Road, thereby potentially resulting in the cancellation of additional Williamson Act contracts on those lands. Nearby proposed projects, including the Teichert and Walltown quarries, would require cancellation of lands under Williamson Act contracts. Other land uses inconsistent with Williamson Act provisions and resulting in subsequent contract non-renewals could occur. As discussed above, future urban development would require Sacramento County to amend its general plan, land use designations, and zoning, and therefore such a land use conversion to urban development is not assured. Therefore, it would be speculative to try to predict if implementation of these projects would result in the cancellation of Williamson Act contracts.

4.2.4 SUMMARY OF GROWTH-INDUCING IMPACTS

Overall, the Proposed Project and the other four action alternatives would be growth-inducing because they would involve improving and constructing roadways, which would enhance access to currently undeveloped areas; contribute to the need to expand wastewater treatment capacity at the SRWTP facility; and could provide school capacity beyond that needed to serve the Proposed Project or the other four action alternatives. The impacts associated with this growth are discussed above.

The Resource Impact Minimization and No Federal Action Alternatives would conflict with the SACOG Sacramento Region Preferred Blueprint Scenario by developing the SPA at lower densities than anticipated in the Blueprint. Low densities can be considered an inefficient use of finite land resources and can push market demand for development outward toward other areas on the urban periphery. In the long term, these alternatives would be growth-inducing.

The Proposed Project, Centralized Development, and Reduced Hillside Development Alternatives would include a greater density of residential development and exceed the jobs projections identified in the Blueprint for the SPA. Although these higher densities may result in greater on-site impacts on biological, cultural, open-space, and agricultural resources, the overall area of disturbance within the region is reduced in the long term as development is concentrated in particular locations. Therefore, developing the site with a higher density use while avoiding on-site impacts would focus market demand for development into an area near existing development, infrastructure, and services, and the Proposed Project, Centralized Development, and Reduced Hillside Development Alternatives would be growth-inducing.

Implementing the Proposed Project or the other four action alternatives would effectively result in development of a population and employment base that is the size of a small town. These alternatives would result in a condition in which jobs exceed employable residents, potentially generating additional demand for housing in Folsom and the Sacramento region. Although the Proposed Project and the other four action alternatives include the provision of commercial and retail services, on-site services would meet only some of the needs of the project population. The additional population associated with the project would spur an increase in demand for goods and services in Folsom and the Sacramento region, which could result in additional development to satisfy this demand. In this respect, the Proposed Project and the other four action alternatives would be growth-inducing. It would be speculative, however, to try to predict exactly where any such new services would be located. The most logical assumption is that they would be located where the existing Folsom, Sacramento, and El Dorado Counties' and other surrounding communities' general plans currently anticipate them. The general plans have already undergone environmental review and any new individual projects requiring discretionary approvals would be required to undergo their own environmental review.

Implementing the Proposed Project or the other four action alternatives would result in large-scale urban development adjacent to undeveloped grazing lands south of the SPA and could potentially place pressure on these lands to convert to urban uses. As explained above, the land south of the SPA is located in a rural unincorporated portion of Sacramento County beyond the USB and UPA, and it is not expected this area would receive urban levels of public infrastructure and services to support urban development. Further, because it would require Sacramento County to amend its general plan, land use designations, and zoning, such a land use conversion to urban development is not assured.

4.3 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

CEQA requires that irreversible and irretrievable commitment of resources be addressed for certain categories of projects, including the "[t]he adoption, amendment, or enactment of a plan, policy, or ordinance of a public agency" and any project also subject to NEPA. (State CEQA Guidelines CCR Sections 15127[a] and 15127[c].) NEPA requires that an environmental analysis include identification of "…any irreversible and irretrievable commitment of resources which would be involved in the proposed action should it be implemented." (Section 102 [42 USC Section 4332(c)].) Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that this use could have on future generations. Irreversible effects result primarily from the use or destruction of a specific resource (e.g., energy and minerals) that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action (e.g., extinction of a threatened or endangered species or the disturbance of a cultural resource).

There are several resources, both natural and built, that would be expended in the construction and operation of the "Land" and "Water" portions of the project. These resources include the building materials used in construction of the project and energy in the form of natural gas, petroleum products, and electricity consumed during construction and operation of housing and commercial land uses. Loss of these resources is considered irreversible because their reuse for some other purpose than the project would be impossible or highly unlikely. The project constitutes an irreversible and irretrievable commitment of the site as a land resource, thereby rendering land use for other purposes infeasible. Thus, except to the extent minimized by the designation of the on-site wetland preserve, the land would also be permanently lost as a habitat area. In addition, if the SPA is found to contain a source of kaolin clay, this natural resource would be lost a result of project construction, since buildout of the site with urban land uses would render the clay inaccessible.

4.4 RELATIONSHIP BETWEEN SHORT-TERM USE OF THE ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

Effects on resources are often characterized as being short-term or long-term in duration. Impacts that occur only during construction are considered temporary. Impacts that occur over a period of 3 years or less result from short-term uses of the resources in an area most often associated with construction and up to 3 years after construction ceases. Construction can create temporary water quality effects and increases in noise, emissions, traffic, and human population that can disturb resources in an area but subside when the work is complete. Long-term effects relate to the maintenance and enhancement of long-term productivity—in particular, the consistency of the project with long-term economic, social, regional, and local planning objectives. These impacts may lead to permanent loss or degradation of resources. As required by Public Resources Code section 21001(g), the short- and long-term effects of the "Land" and "Water" portions of the project under consideration are summarized below.

4.4.1 SHORT-TERM USES

Implementation of the Proposed Project, Resource Impact Minimization, Centralized Development, Reduced Hillside Development, or No Federal Action Alternatives, and implementation of any of the "Water" alternatives, would result in temporary and short-term construction-related impacts. As discussed elsewhere in this EIR/EIS, the temporary and short-term construction impacts would be associated predominantly with water quality, traffic, air quality emissions, and noise. The project applicant(s) would implement mitigation measures identified in each topical section to reduce these impacts to a less-than-significant level wherever feasible and available. At the same time, however, construction of the project would create economic benefits during construction, in the form of jobs and the subsequent direct and indirect demand for goods and services.

Under the No Project Alternative/No Water Facilities Alternative, a total of 44 single-family dwelling units could be constructed. All or a portion of these dwelling units could be constructed by individual property owners. Construction of these individual dwelling units would require a minimal number of construction workers and subsequently would create minimal economic benefits during construction and minimal direct and indirect demand for goods and services.

4.4.2 LONG-TERM USES

Implementation of the Proposed Project, Resource Impact Minimization, Centralized Development, Reduced Hillside Development, or No Federal Action Alternatives, and implementation of the "Water" alternatives (Preferred Alternative or alternatives 1, 1A, 2, 2A, 2B, 3, 3A, or 4, 4A) would result in long-term impacts related to the loss of biological resources and habitat, open space, and cultural resources; a change in the visual character and quality of the SPA; air quality emissions; noise; increased traffic; and increased demand for public services and utilities, including water supply, wastewater service, natural gas, electricity, communications service, fire protection, police service, and public schools. However, long-term economic productivity in Folsom and the Sacramento region would be substantially enhanced through development of commercial and retail services. Long-term benefits and increases in productivity from implementation of the project are described below.

- A well-integrated, mixed-use master-planned community would be developed. A pedestrian-friendly, human-scale community environment would be developed, with a safe and pleasant place for people to live, work, and recreate.

- The project would provide employment-generating uses, including a regional commercial center, town center, and smaller neighborhoods centers, for Folsom and the surrounding Sacramento region. These uses would

result in long-term community benefits, including generation of substantial permanent employment opportunities and needed retail uses and fiscal benefits from tax-generating land uses.

- A regional commercial center would be situated along U.S. 50 and Scott Road adjacent to and just north of the mixed-use town center. This adjacency is intended to promote a relationship between this regional-scale commercial and the walkable character of the town center. Additional commercial uses would be of a larger scale and highway oriented. Commercial- and service-based uses would be incorporated into neighborhood centers and include residential elements such as separate, higher density residential buildings.

- A variety of housing types are proposed to better serve the economic diversity of local homebuyers, including single-family detached and attached homes, apartments, condominiums, and townhomes. This would help alleviate the existing and future jobs/housing imbalance in Folsom and the Sacramento region. Particular emphasis would be placed on affordability and proximity of housing to the major employment-generating centers along the U.S. 50 corridor.

- Open space, recreational uses, and parks are proposed throughout the community and integrated within its design. Approximately 30% of higher density residential uses would be located near commercial uses, parks, and schools to create walkable communities.

- A public transit corridor would be included throughout the SPA with connections to the regional commercial center, town center, and neighborhood centers. Bus transit routes would be integrated into systems provided by Folsom and Regional Transit. Multi-use trails, bicycle trails, and pedestrian walkways and sidewalks would be incorporated into the development so that people could complete trips without depending exclusively on major roads, secondary roads, or automobiles.

Under the No Project Alternative/No Water Facilities Alternative, a total of 44 single-family dwelling units could be constructed. Construction of these individual dwelling units would result in substantially fewer than the impacts associated with project development; however, there would be a significant cost to the long-term productivity and future economic and socioeconomic well-being of the area.

4.5 SIGNIFICANT AND UNAVOIDABLE ADVERSE IMPACTS

CCR Section 15216.2(b) of the State CEQA Guidelines requires EIRs to include a discussion of any significant environmental impacts that cannot be avoided if the project is implemented. Chapter 3 of this EIR/EIS provides a detailed analysis of all significant and potentially significant environmental impacts related to implementing the project; identifies feasible mitigation measures, where available, that could avoid or reduce these significant and potentially significant impacts; and presents a determination whether these mitigation measures would reduce these impacts to less-than-significant levels. Section 4.1 identifies the significant cumulative impacts resulting from the combined effects of the project and related projects. If a specific impact in either of these sections cannot be fully reduced to a less-than-significant level, it is considered a significant and unavoidable adverse impact.

As described below in Sections 4.5.1 through 4.5.14 and listed in Table 4-9, project implementation would result in significant and unavoidable adverse impacts in nine environmental issue areas. Additional significant and unavoidable impacts could occur if mitigation for off-site elements that is outside the control of the lead agencies is not implemented (see Section 4.5.15 below). Finally, the project would make a cumulatively considerable incremental contribution to significant cumulative impacts in seven environmental issue areas (see Section 4.5.16 below).

Table 4-9
Summary of Project-Related Significant and Unavoidable Impacts

Section Name/Issue Area/Project Component	Impact Number	Impact Title
Aesthetics - Land	3A.1-1	Substantial alter nation of a scenic vista
	3A.1-2	Damage to scenic resources within a designated scenic corridor
	3A.1-3	Substantial degradation of visual character
	3A.1-4	Temporary, short-term degradation of visual character for developed project land uses during construction
	3A.1-5	New skyglow effects
Air Quality - Land	3A.2-1	Generation of construction emissions of NO_X and PM_{10}
	3A.2-2	Generation of long-term operational (regional) emissions of ROG and NO_X
	3A.2-4	Exposure of sensitive receptors to short- and long-term emissions of toxic air contaminants
	3A.2-6	Possible exposure of sensitive receptors to odorous emissions
Air Quality - Water	3B.2-1	Exceed Air Quality Standards
Biological Resources - Land	3A.3-1	loss and degradation of Waters of the U.S., including wetlands, and Waters of the State
	3A.3-2	Loss and degradation of habitat for special-status wildlife species and potential direct take of individuals
	3A.3-5	Loss of blue oak woodland and individual oak trees
Biological Resources - Water	3B.3-2	Loss and degradation of habitat for special-status wildlife species and potential direct take of individuals
Climate Change - Land	3A.4-1	Generation of temporary, short-term construction-related GHG emissions
	3A.4-2	Generation of long-term operational GHG emissions
Climate Change - Water	3B.4-1	Net Increase in Greenhouse Gases
Geology, Soils, Minerals, and Paleontological Resources - Land	3A.7-9	Possible loss of mineral resources – kaolin clay
Land Use and Agricultural Resources - Land	3A.10-3	Cancellation of existing on-site Williamson Act contracts
	3A.10-4	Potential conflict with existing off-site Williamson Act contracts
Land Use and Agricultural Resources - Water	3B.10-2	Conflict with applicable local agency land use plans, policies, or regulations.
	3B.10-4	Cancellation of existing on-site Williamson Act contracts
Noise - Land	3A.11-1	Temporary, Short-Term Exposure of Sensitive Receptors to Increased Equipment Noise from Project Construction
	3A.11-3	Temporary, Short-Term Exposure of Sensitive Receptors to Potential Groundborne Noise and Vibration from Project Construction
	3A.11-4	Long-Term Exposure of Sensitive Receptors to Increased Traffic Noise Levels from Project Operation
Noise - Water	3B.11-1	Temporary, short-term exposure of sensitive receptors to increased equipment noise from project construction
	3B.11-3	Permanent increase in ambient noise levels
Traffic and Transportation - Land	3A.15-1d	Unacceptable LOS at the Scott Road (North)/Easton Valley Parkway intersection (Intersection 38)
	3A.15-2	Increased demand for single-occupant automobile travel in the project area

Table 4-9 Summary of Project-Related Significant and Unavoidable Impacts		
Section Name/Issue Area/Project Component	**Impact Number**	**Impact Title**
Utilities and Service Systems - Land	3A.16-3	Increased demand for SRWTP wastewater treatment plant facilities – indirect contribution to significant and unavoidable air quality impact from expansion of treatment plant
	3A.16-4	Increased demand for EID off-site wastewater collection and conveyance facilities – potential direct and indirect contribution to need for new EID collection and conveyance facilities, the environmental effects of which are presently unknown
	3A.16-5	Increased demand for EID wastewater treatment plant facilities - potential direct and indirect contribution for need for EID plant expansion, the environmental effects of which are presently unknown
Notes: NA = no analysis; ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter less than ten microns in diameter, and $PM_{2.5}$ = particulate matter 5 micrometers or less; GHG = greenhouse gases; SACOG = Sacramento Area Council of governments; LOS = level of service; SRWTP = Sacramento Regional Wastewater Treatment Plant; EID = El dorado Irrigation District Source: Data compiled by AECOM in 2010		

The detailed discussion of specific significant and unavoidable impacts below follows the issue areas, impacts, and "Land" or "Water" portions of the EIR/EIS that are identified in Table 4-9. If no significant and unavoidable impacts would occur, that topic or that portion of the EIR/EIS is not discussed below.

4.5.1 AESTHETICS - LAND

The SPA consists of a flow from oak woodlands, to gently rolling grasslands, to steep vegetation-covered hillsides. Because the SPA contains high levels of vividness, intactness, and unity, and due to its location along U.S. 50 where it is seen by thousands of motorists, viewer sensitivity is considered to be high. Project implementation would substantially alter the existing scenic vista in the SPA, from open grazing land to urban development (Impact 3A.1-1). No feasible mitigation measures are available to reduce impacts associated with the alteration of scenic vistas from project development to a less-than-significant level. Therefore, this impact would be significant and unavoidable.

Scott Road south of White Rock Road is a designated scenic corridor in Sacramento County, because the existing grasslands and cattle-grazing lands are considered exemplary views of the rural Sacramento County landscape. Project implementation would substantially damage views from the portion of Scott Road designated as a scenic corridor because the rural landscape on Scott Road north of White Rock Road, which would be visible from the scenic corridor, would be replaced with urban land uses (Impact 3A.1-2). No feasible mitigation measures are available to reduce impacts associated with the damage to the scenic resources visible on the designated scenic corridor from project development to a less-than-significant level. Therefore, this impact would be significant and unavoidable.

Project implementation would substantially degrade the visual character of the SPA through conversion of grazing land to developed urban uses (Impact 3A.1-3). Because of the large scale and location of the SPA (visible by a large number of viewers along U.S. 50 and within the City of Folsom), there is no feasible mitigation available to fully reduce visual resource impacts associated with the conversion of a large expanse of agricultural land to urban development. Therefore, this impact would be significant and unavoidable.

The presence and movement of heavy construction equipment and staging areas would temporarily degrade the existing visual character and/or quality of the SPA and surrounding area (Impact 3A.1-4). Project implementation would involve four phases of similar types of construction over a 19-year phased buildout period (for information on project phasing, please refer to Section 2.3.1 in Chapter 2, "Alternatives"). During this time, adjacent project

development, including sensitive land uses such as housing, schools, and parks, would be occupied while construction is occurring in a different phase. Construction areas would also be visible to motorists and employees of existing businesses. As required by Mitigation Measure 3A.1-4, the project applicant(s) of all project phases would locate staging and material storage areas as far away from sensitive land uses (i.e., residential areas, schools, parks) developed in earlier development phases, and would provide visual screening, to the maximum extent practicable. However, because screening may not always be feasible (e.g., projects covering a large area or tall buildings), this temporary impact would be significant and unavoidable.

Project implementation would require lighting of new development that could inadvertently cause increased skyglow effects, effectively obscuring views of stars, constellations, and other features of the night sky (Impact 3A.1-6). Implementation of Mitigation Measure 3A.1-5 would partially reduce significant impacts associated with effects from skyglow. However, because of the scale and location of the SPA, these lighting guidelines would not fully reduce new skyglow effects to a less-than-significant level. Therefore, project-related skyglow impacts would be significant and unavoidable.

4.5.2 AIR QUALITY - LAND

Construction activities associated with the project would generate intermittent emissions of NO_X and PM_{10}. Because of the large size of the project, construction-generated emissions of NO_X, an ozone precursor, and fugitive PM_{10} dust would exceed SMAQMD-recommended thresholds and would substantially contribute to emissions concentrations that exceed the NAAQS and CAAQS. Also, project-generated construction-related emissions of ROG could exceed EDCAQMD-recommended thresholds for construction of the two off-site roadway extensions from Folsom Heights into El Dorado Hills. Thus, project-generated, construction-related emissions of criteria air pollutants and precursors could violate or contribute substantially to an existing or projected air quality violation, expose sensitive receptors to substantial pollutant concentrations, and/or conflict with air quality planning efforts (Impact 3A.2-1). Implementation of Mitigation Measures 3A.2-1a and 3A.2-1d would reduce NO_X emissions to levels below the applicable thresholds. However, generation of PM_{10} from on-site construction activities, and generation of PM_{10} from the off-site U.S. 50 interchange improvements and the Rowberry Drive Overcrossing, could potentially exceed or contribute substantially to exceedances of the CAAQS and NAAQS at nearby receptors even after implementation of Mitigation Measures 3A.2-1a, 3A.2-1b, 3A.2-1c, 3A.2-1e, and 3A.2-1f. Because no other feasible mitigation measures are available to reduce project-generated construction-related PM_{10} emissions, this impact would be significant and unavoidable.

Operational area- and mobile-source emissions from project implementation would exceed the SMAQMD-recommended threshold of 65 lb/day for ROG and NO_X, and would result in or substantially contribute to emissions concentrations that exceed the NAAQS or CAAQS. In addition, because of the large increase in emissions associated with project build out and the fact that the project is not within an already approved plan (which means that increased emissions would not already be accounted for in applicable air quality plans), project implementation could conflict with air quality planning efforts in the SVAB (Impact 3A.2-2). Implementation of Mitigation Measure 3A.2-2 would reduce ROG and NO_X emissions associated with operation of the project. As described in detail in Impact 3A.2-2, even if operational emissions of NO_X were 35% lower than the levels reported in Tables 3A.2-6 through 3A.2-10 (to account for differences in modeling output and the required air quality mitigation plan), they would still exceed SMAQMD's significance threshold of 65 lb/day. As a result, this impact would be significant and unavoidable.

Project implementation would result in exposure of sensitive receptors to short- and long-term emissions of TACs from on-site stationary and mobile sources and from off-site mobile sources (Impact 3A.2-4). Implementation of Mitigation Measure 3A.2-4 would lessen health-related risks associated with the operation of off-road diesel powered equipment during construction activity and would lessen health-related risks associated with mobile-source TACs; however, TAC exposure levels would not necessarily be reduced to less-than-significant levels. Because no additional feasible mitigation measures are available, exposure to mobile-source TAC emissions from on-site mobile sources therefore would be a significant and unavoidable impact. This conclusion has been reached

due to the uncertainty about the potential TAC emission sources associated with on-site commercial and industrial land use activities and the proximity of sensitive receptors to such uses. In addition, there is also uncertainty about the feasibility and effectiveness of extending the setback distances between roadways and receptors and the effectiveness and feasibility of tiered planting of fine-needle tree species. Therefore, this conclusion may change as more detailed information regarding proposed on-site commercial uses becomes available and analyses of individual phases are performed at the project level.

Project construction activities associated with the development of on-site land uses could result in odorous emissions from diesel exhaust generated by construction equipment. During some periods of the 19-year buildout of the project intense levels of construction activity could potentially occur in close proximity to existing or future-planned sensitive receptors or construction activity could potentially occur near sensitive receptors for an extended period of time. In particular, a substantial number of people in the existing residential neighborhood that located just east of the SPA in El Dorado Hills could be exposed to odorous diesel exhaust emissions generated by on-site construction activity. Implementation of Mitigation Measure 3A.2-1a and Mitigation Measure 3A.2-1f would reduce the mass levels of odorous diesel exhaust during construction of the on-site elements. However, given that construction activity would occur in the SPA during the 19-year buildout of the project, generation of construction-generated diesel exhaust, particularly during periods of intense grading on the eastern hillside of the SPA, could expose a substantial number of people to odorous emissions and, therefore, this impact would not be reduced to a less-than-significant level. Therefore, the potential exposure of a substantial number of people to these objectionable odors is considered to be significant and unavoidable.

4.5.3 AIR QUALITY - WATER

Construction of the Off-Site Water Facility Alternatives could result in temporary and short-term, but significant and unavoidable impacts to air quality through the generation of criteria ozone precursors (e.g. NO_X). Even after the application of mitigation, residual construction-related direct and indirect air quality impacts would be significant for the Preferred Off-Site Water Facility Alternative and Off-Site Water Facility Alternatives 1, 1A, 3, 3A, 4, and 4A. Due to the substantially smaller footprint of the Off-Site Water Faculties under Alternative 2, 2A, and 2B, residual construction-related ozone impacts would be less-than-significant without mitigation. Only minor quantities of criteria air pollutants would be generated during the operation of all the Off-site Water Facility Alternatives and, therefore, the residual impact would be less-than-significant with no mitigation required.

4.5.4 BIOLOGICAL RESOURCES - LAND

Implementation of the project could result in the placement of fill material into Waters of the U.S., including wetlands subject to U.S. Army Corps of Engineers jurisdiction under the Federal Clean Water Act, and the potential loss and degradation of wetland habitats protected under state and local regulations (Impact 3A.3-1). Implementation of Mitigation Measure 3A.3-1a and 3A.3-1b would reduce significant direct and indirect impacts, but not to a less-than-significant level. Considering the rate of development in Sacramento County and the limited amount of undeveloped, unspoken for land that supports existing wetlands that could be preserved, or that is suitable for creation of compensatory aquatic habitats similar to those that would be removed by project implementation, it may not be possible to fully mitigate the loss of habitat functions and values provided by the nearly 45 acres of aquatic habitats that would be lost in the SPA. Therefore, the direct impact would be significant and unavoidable. Furthermore, a number of different project-related factors (described in Impact 3A.3-1) could substantially diminish the water quality, hydrologic, and habitat functions of all wetlands remaining on site and downstream in the project vicinity, therefore resulting in indirect impacts that would be significant and unavoidable

Project implementation would result in the loss and degradation of habitat for several special-status wildlife species. Take of several listed species, including vernal pool invertebrates, valley elderberry longhorn beetle, and Swainson's hawk, could also occur. (Impact 3A.3-2.) Implementation of Mitigation Measures 3A.3-2a, 3A.3-2b, 3A.3-2c, 3A.3-2d, 3A.3-2e would lessen significant direct and indirect impacts on special-status wildlife;

however, this impact would remain significant and unavoidable because the direct removal of approximately 2,700 acres and indirect effect to approximately 800 acres of potential habitat for special-status wildlife cannot be fully mitigated. Impacts on special-status wildlife species could be fully mitigated only through a combination of habitat preservation and restoration in the vicinity of the SPA. Parcels of similar habitat quality are currently present in the project vicinity, but these parcels would be of lesser value following development of the project because of the effects of habitat fragmentation and secondary and indirect impacts related to the project. Moreover, there would be a net loss of approximately 3,500 acres of potential habitat for special-status species regardless of the acreage preserved. Therefore, fully compensating for the impact by preserving existing habitat in the project vicinity is infeasible. The mitigation does include elements of habitat creation and enhancement that would increase the habitat value of preserved lands so that mitigation habitat could be of greater value than habitat lost and degraded, but there is not sufficient undeveloped land in the project vicinity to offset the effects of habitat fragmentation on special-status species, and thus, fully mitigate the impact or reduce it to a less-than-significant level.

Project implementation would result in the removal of 444 acres of blue oak woodland and thousands of individual oak trees meeting the criteria for protection under Folsom Municipal Code and the Sacramento County Tree Ordinance (Impact 3A.3-5). Implementation of Mitigation Measure 3A.3-5 would reduce significant impacts from loss of blue oak woodland and protected trees, but not to a less-than-significant level because the loss of individual oak trees and blue oak woodland acreage and function would be extensive and would contribute substantially to the regional loss of this resource. It is unknown at this time if blue oak woodland habitat acreage having similar tree sizes and densities, species composition, site condition, and landscape context to the blue oak woodland to be removed would be available for purchase and preservation in perpetuity. Furthermore, planting replacement trees would result in temporal losses of oak tree resources until the replacement trees reached comparable sizes as the trees to be removed; a process that would take many decades, and it is unknown if a suitable site to plant thousands of trees and restore historic or existing blue oak woodland would be available in Sacramento County or even nearby in neighboring counties. Therefore, impacts on blue oak woodland and protected trees would remain significant and unavoidable.

4.5.5 BIOLOGICAL RESOURCES - WATER

Vernal pools, seasonal wetlands, and seasonal wetland swale are documented throughout Zone 4 of the "Water" Study Area, comprising approximately 10.8 acres, 7.8 acres, and 4.9 acres, respectively, and support special-status invertebrates such as vernal pool fairy shrimp and vernal pool tadpole shrimp. Other species may include California linderiella fairy shrimp (*Linderiella occidentalis*) or conservancy fairy shrimp (*Branchinecta conservatio*). As shown in Table 3B.3-5, vernal pool fairy shrimp and vernal pool tadpole shrimp are known to occur in the vicinity of all the Off-site Water Facility Alternatives that cross through Zone 4 of the "Water" Study Area. Depending on the location of the construction (i.e., roadway centerline verses shoulder) construction activities associated with the pipelines and WTPs could result in significant direct and indirect impacts to vernal pool habitat and, hence, vernal pool crustaceans. Impacts to vernal pool crustaceans species could only be mitigated through a combination of habitat preservation and restoration in the vicinity of the selected Off-site Water Facilities. Given that even following the restoration of the impacted area(s), the take of these species could have already occurred, the City is unable to demonstrate complete avoidance. Therefore, demonstrating full compensation for these impacts by preserving and restoring existing habitats for vernal pool crustaceans in the vicinity of the selected Off-site Water Facility Alternative is infeasible. For this reason, the direct and indirect impacts would remain significant and unavoidable.

4.5.6 CLIMATE CHANGE - LAND

Project implementation would result in increased generation of GHGs, which could contribute to global climate change on a cumulative level. The project would contribute to cumulatively considerable GHG emissions in both the short term and the long term (Impacts 3A.4-1 and 3A.4-2).

Implementation of Mitigation Measures 3A.2-1 and 3A.4-1 would partially reduce GHG emissions from short-term GHG emissions associated with construction activity. Because this analysis is conducted at a program level and the project would be constructed in phases over a 19-year period (for information on project phasing, please refer to Section 2.3.1 in Chapter 2, "Alternatives"), the extent to which feasible technologies and GHG reduction measures will continue to be developed is not known at the time of writing this EIR/EIS. Therefore, this analysis concludes that the reductions achieved by implementing Mitigation Measures 3A.2-1 and 3A.4-1 would not be sufficient to fully reduce the construction-generated GHGs to the extent that they would not be cumulatively considerable.

Although implementation of Mitigation Measures 3A.2-2, 3A.4-2, and 3A.4-3 would reduce the project's incremental contribution to long-term operational GHG emissions, it is unknown at the time of writing this EIR/EIS whether the selected project-specific measures during each project phase, in combination with the GHG reductions realized from the regulatory environment that exists at that time, would result in attainment of the applicable CO_2e/SP goal. Therefore, the project's long-term contribution of operational GHG emissions is considered potentially significant and unavoidable.

4.5.7 CLIMATE CHANGE - WATER

Based on a quantification of the Offsite Water Facility Alternatives' energy requirements to support conveyance, treatment, and local distribution operations at build-out of the Folsom Specific Plan, the Offsite Water Facility Alternatives are expected to indirectly generate substantial emissions of GHGs. Even with the application of the prescribed mitigation, the collective measures are not expected to reduce Offsite Water Facilities-related GHG emissions below the applied threshold and, therefore, this impact is considered significant and unavoidable.

4.5.8 GEOLOGY, SOILS, MINERALS, AND PALEONTOLOGICAL RESOURCES - LAND

The SPA is located within the Sacramento-Fairfield Production-Consumption Region designated by CDMG and may contain a deposit of kaolin clay (Impacts 3A.7-9 and 3A.7-19). The western edge of the SPA is zoned MRZ-3 for kaolin clay. This classification was applied by CDMG because that area roughly corresponds to the location of the Ione Formation in the SPA. The Ione Formation is known to contain kaolin clay in other locations in northern California. Implementation of Mitigation Measure 3A.7-9 would provide data that would allow the project applicant(s) and the lead agencies to determine whether or not economically valuable mineral resources are present in the MRZ-3 kaolin clay area of the SPA. However, if economically valuable mineral resources were found to be present, they would be covered over with urban land uses as a result of project development, and would no longer be available for mining. Therefore, this impact is considered potentially significant and unavoidable, because there are no feasible mitigation measures available to avoid or reduce this impact to a less-than-significant level.

4.5.9 LAND USE AND AGRICULTURAL RESOURCES - LAND

Approximately 1,530 acres of the SPA consist of agricultural lands under existing Williamson Act contracts. Notices of nonrenewal were filed on these parcels in 2004 and 2006; as a result, these existing contracts will expire in 2014 and 2016, respectively. However, project implementation would require the cancellation of one or more of these Williamson Act contracts before their expiration date because the proposed land uses would not be permitted under the existing contracts (Impacts 3.10-3 and 3.10-7). No feasible mitigation measures are available to reduce impacts associated with the cancellation of these Williamson Act contracts to a less-than-significant level. Therefore, this impact would be significant and unavoidable.

Project implementation could conflict with lands under Williamson Act contracts south of the SPA; thereby potentially resulting in indirect impacts related to cancellation of those contracts (Impact 3.10-4). Land south of the SPA is characterized primarily by seasonal grazing land in an unincorporated area regulated by Sacramento County, outside of the Urban Service Boundary, and the majority of these lands are under Williamson Act

contracts. Land uses inconsistent with Williamson Act provisions and resulting in subsequent contract non-renewals could occur through requests for general plan amendments and rezoning of these lands as a result of indirect pressure to develop from implementation of the project. No feasible mitigation measures are available to reduce impacts associated with conflicts or cancellation of these Williamson Act contracts on adjacent land to a less-than-significant level. Therefore, this impact would be potentially significant and unavoidable.

Several impacts of the proposed GPA would remain significant and unavoidable after implementation of all feasible mitigation, including aesthetics, air quality, climate change, noise, population and housing, traffic, and water supply. These significant and unavoidable impacts would be similar to those described for the "Land" portion of the project throughout Section 4.5.

4.5.10 LAND USE AND AGRICULTURAL RESOURCES - WATER

Implementation of Mitigation Measure 3B.10-1 could reduce potentially significant impacts related to inconsistencies with existing land use policies and plans under Off-site Water Supply Alternatives 1, 1A, 3, 3A, 4 and 4A to a less-than-significant level by requiring use permits or annexation to the City prior to the construction and operation of the White Rock and Folsom Boulevard WTPs. However, given that discretionary approval conflict would by required by either LAFCo or the corresponding local jurisdiction (e.g. Sacramento County), the City is unable to guarantee that the prescribed mitigation measure reduce inconsistencies associated with potential conflicts with LAFCo's policies and Sacramento County's USB to a less-than-significant level. Therefore, this impact remains potentially significant and unavoidable for Off-site Water Facility Alternatives 1, 1A, 3, and 3A, 4 and 4A.

Implementation of Off-site Water Facilities Alternatives PA, 1, 1A, 3, and 3A could conflict with lands under Williamson Act contracts; thereby potentially resulting in indirect impacts related to cancellation of those contracts (Impacts 3B.10-4). Land uses inconsistent with Williamson Act provisions and resulting in subsequent contract non-renewals could occur through annexation and rezoning of these lands as a result of indirect pressure to develop from implementation of the project. No feasible mitigation measures are available to reduce impacts associated with conflicts or cancellation of these Williamson Act contracts on adjacent land to a less-than-significant level. Therefore, this impact would be potentially significant and unavoidable.

4.5.11 NOISE - LAND

Implementation of mitigation measures contained in Section 3A.11, "Noise - Land " would reduce impacts associated with (1) temporary, short-term exposure of sensitive receptors to increased equipment noise from project construction in all locations except as related to the off-site roadway connections in El Dorado Hills. Sensitive receptors along those El Dorado Hills roadway connections would be exposed to noise levels that would still exceed applicable thresholds even after implementation of all feasible mitigation, and therefore a significant and unavoidable impact would occur. Implementation of mitigation measures contained in Section 3A.11, "Noise - Land " would also reduce impacts associated with groundborne noise and vibration from project construction, and the long-term exposure of sensitive receptors to increased operational traffic noise levels from project operation, but not to a less-than-significant level, because noise levels would (or could potentially) still exceed applicable thresholds and, therefore, residual significant impacts would occur. All other noise impacts would be reduced to a less-than-significant level following implementation of the recommended mitigation measures.

Additionally, some of the off-site elements fall under the jurisdiction of El Dorado and Sacramento Counties and/or Caltrans; therefore, neither the City nor the project applicant(s) would have control over their timing or implementation. Therefore, the impacts related to those off-site facilities that are under the jurisdiction of El Dorado County, Sacramento County, or Caltrans, are considered potentially significant and unavoidable. If El Dorado County, Sacramento County, and Caltrans cooperate in implementation of the recommended mitigation measures, then those impacts would be reduced to a less-than-significant level.

4.5.12 NOISE - WATER

Although implementation of the recommended mitigation measures would generally reduce construction noise, construction-related noise levels could occasionally exceed the Sacramento County and City of Rancho Cordova standards regarding construction noise. Although there are smaller number of receptors potentially affected under Off-site Water Facility Alternatives PA, 1, 1A, 4, and 4A, implementation of the recommended mitigation would not reduce construction-related noise impacts to a less-than-significant level at these locations. In addition, construction activities at the pump station facility may occur over a more extended period of time, up to several months, and could contribute to noises levels in excess of 80 dBA. These impacts could remain significant and unavoidable, because there is no feasible mitigation to fully reduce temporary, short-term construction-related impacts to a less-than-significant level. Based on the larger number of receptors affected along the conveyance alignments, construction-related noise impacts under Off-site Water Facility Alternatives 2, 2A, 2B, 3, and 3A could also remain significant and unavoidable to these residential centers, because there is no feasible mitigation to fully reduce temporary, short-term construction-related impacts to a less-than-significant level.

The operation of the pumps and generators for Off-Site Water Facilities pump stations and WTP facilities could occur within close proximity of sensitive receptors, thereby resulting in a permanent increase in noise levels. Although the City has identified a series of mitigation measures discussed in Section 3B.11, "Noise - Water" to address potential long-term impacts to adjacent sensitive receptors, given uncertainties regarding the design of these facilities and their respective locations, the City is unable to confirm whether the mitigation imposed would be effective in reducing long-term noise to a less-than-significant level. For this reason, long-term, residual noise impacts from these facilities under Off-site Water Facility Alternatives PA, 1, 1A, 3, 3A, 4, and 4A could be significant and unavoidable.

4.5.13 TRAFFIC AND TRANSPORTATION - LAND

Implementation of the proposed project or the alternatives would result in significant impacts to numerous intersections and roadways. However, mitigation measures, including construction of roadway and intersection improvements, would reduce all but five of these impacts to a less-than-significant level. Two intersection impacts, at Oak Avenue Parkway / East Bidwell Street and East Bidwell Street / Iron Point Road would remain significant and unavoidable because it is contrary to City policy to construct 8-lane roadways, as would be required to fully mitigate the impact. Impacts to three roadway segments on eastbound U.S. 50, including the Zinfandel Drive to Sunrise Boulevard segment, the Rancho Cordova Parkway to Hazel Avenue segment, and the Folsom Boulevard to Prairie City Road segment, would remain significant and unavoidable. The mitigation measures proposed for these segments call for fair-share payments to support the construction of the Southeast Capitol Connector. However, based on available information it cannot be determined that the proposed Southeast Capitol Connector will reduce traffic volumes on U.S. 50 to an acceptable LOS, and so these impacts are considered significant and unavoidable in this document.

Project implementation would increase demand for single-occupant automobile travel on area roadways and intersections causing roadway and intersection impacts (Impact 3.15-2). Implementation of Mitigation Measure 3.15-2a would reduce the demand of the single-occupant vehicle on area roadways and intersections. Implementation of Mitigation Measures 3.15-2b, 3.15-2c, and 3.15-2d would promote usage of alternative transportation modes and increase the supply of these modes. Although implementation of these mitigation measures have the potential to substantially reduce the number of single-occupant vehicles, the project would still to add a large number of single-occupant vehicles in the area. Because there are no additional feasible mitigation measures to further reduce the number of project-generated single-occupant vehicle trips, the impact would be significant and unavoidable.

4.5.14 UTILITIES AND SERVICE SYSTEMS - LAND

Project implementation would result in increased demand for treatment at the SRWTP (Impact 3.16-3). Implementation of Mitigation Measure 3.16-3 would ensure that sufficient wastewater treatment capacity is available to all project phases. However, SRCSD has identified the need for expansion of the SRWTP in the 2020 Master Plan approved in 2004. Because implementing the project would contribute to the need to expand the SRWTP facility, it would contribute directly and indirectly to impacts identified in the *Sacramento Regional Wastewater Treatment Plant 2020 Master Plan Final Environmental Impact Report* (2020 Master Plant EIR). Implementation of mitigation measures contained in the 2020 Master Plan EIR would reduce impacts in all but one issue area to a less-than-significant level. The 2020 Master Plan EIR identified the following significant and unavoidable impact:

- air quality: emissions of NO_X during construction.

Implementation of mitigation measures to reduce impacts is the responsibility of SRCSD; such measures would be implemented in accordance with the 2020 Master Plan EIR. However, this air quality impact related to the treatment plant expansion would be significant and unavoidable after implementation of all feasible mitigation measures, and the project would contribute to this significant and unavoidable impact.

Approximately 189 acres of the SPA are within the service area of EID, and would require off-site wastewater collection and conveyance facilities to the EID treatment plant (Impact 3.16-4). Implementation of Mitigation Measure 3.16-4 would reduce significant impacts associated with increased demand for EID off-site wastewater collection facilities to a less-than-significant level because adequate EID off-site wastewater conveyance facilities would be documented or adequate financing would be secured before approval final maps and issuance of building permits. However, it is unknown if existing collection and conveyance facilities have the capacity to accommodate wastewater flows generated by project development and the project could directly and indirectly contribute to the need for off-site EID wastewater facility improvements. Therefore, the project would contribute to the potentially significant environmental effects associated with improvements to these facilities for which feasible mitigation may not be available to reduce impacts to a less-than-significant level. Therefore, this would be a potentially significant and unavoidable impact.

Collected wastewater flows from the 189-acre EID portion of the SPA would ultimately be transported to the El Dorado Hills WWTP for treatment and disposal. Because the SPA was not included in the planned future capacity of the El Dorado Hills WWTP, the project would potentially result in increased in wastewater flows that exceed treatment plant capacity (Impact 3.16-5). Implementation of Mitigation Measure 3.16-5 would reduce significant impacts associated with increased demand for wastewater treatment plant facilities to a less-than-significant level because adequate wastewater treatment facilities would be documented before approval final maps and issuance of building permits. However, it is unknown if the existing El Dorado Hills WWTP has the capacity to accommodate wastewater flows generated by project development, and the project could directly and indirectly contribute to the need for El Dorado Hills WWTP improvements. Improvements at the treatment plant would require additional analysis in a separate CEQA document to identify specific impacts and any required mitigation measures. Impacts resulting from improvements to the El Dorado Hills WWTP could include: temporary, short-term generation of criteria air pollutants, such as PM_{10} and emissions of ozone precursors (e.g., ROG and NO_X) during construction; generation of new odors from operation of expanded treatment plant facilities; degradation of water quality from increased discharges to Carson Creek; temporary roadway lane closures, increased truck traffic, and other roadway impacts during construction; exposure of sensitive receptors to noise levels above noise ordinances during construction; and exposure of construction crews and the public to hazardous materials used in construction. It is unknown whether feasible mitigation would be available to reduce these impacts to a less-than-significant level. Therefore, this would be a potentially significant and unavoidable impact.

4.5.15 OFF-SITE IMPROVEMENTS RELATED TO "LAND" DEVELOPMENT THAT ARE NOT UNDER LEAD AGENCY JURISDICTION

This EIR/EIS identifies several project-related off-site land improvements associated with development of the SPA that are not under the jurisdiction of either of the co-lead agencies (City of Folsom and USACE) but are under the jurisdiction of several "responsible agencies" as defined under PRC Section 21069. Those improvements are presented in Table 4-10, below.

Table 4-10
Improvements that are Outside the Co-Lead Agencies' Jurisdiction

Improvement	Jurisdiction
U.S. 50 interchanges	California Department of Transportation
Roadway and sewer force main extensions from Folsom Heights into El Dorado Hills	El Dorado County Development Services Department
Detention basin west of Prairie City Road	Sacramento County Planning and Community Development Department

Note: See Chapter 1.0, "Introduction," for a complete list of project-related trustee, responsible, and cooperating agencies.
Source: Data compiled by AECOM in 2009

The EIR/EIS contains the following mitigation measures applied to off-site "Land" development improvements that would require implementation by one or more of the responsible agencies listed in Table 4-10 and therefore are outside of the control of the City or USACE:

- Aesthetics: 3A.1-4 and 3A.1-5.
- Air Quality: 3A.2-1a, 3A.2-1c, 3A.2-1d, 3A.2-1f, 3A.2-4, and 3A.2-5.
- Biological Resources: 3A.3-1a, 3A.3-1b, 3A.3-2a, 3A.3-2b, 3A.3-2c, 3A.3-2d, 3A.3-2e, 3A.3-2g, 3A.3-2h, 3A.3-3, 3A.3-4a, and 3A.3-5.
- Climate Change: 3A.4-1.
- Cultural Resources: 3A.5-1b, 3A.5-2, and A3A.5-3.
- Geology, Soils, Minerals, and Paleontological Resources: 3A.7-1a, 3A.7-1b, 3A.7-3, 3A.7-4, 3A.7-5, and 3A.7-10.
- Hazards and Hazardous Materials: 3A.8-2, 3A.8-3a, 3A.8-3b, 3A.8-3c, 3A.8-5, and 3A.8-7.
- Hydrology and Water Quality: 3A.9-1, 3A.9-2, 3A.9-3, and 3A.9-5.
- Noise: 3A.11-1, 3A.11-2, 3A.11-3, 3A.11-4, and 3A.11-5.
- Public Services: 3A.14-1.
- Traffic and Transportation: 3A.15-1g, 3A.15-1h, 3A.15-1i, 3A.15-1j, 3A.15-1k, 3A.15-1l, 3A.15-1m, 3A.15-1n, 3A.15-1o, 3A.15-1p, 3A.15-1q, 3A.15-1r, 3A.15-1s, 3A.15-1t, 3A.15-1u, 3A.15-1v, 3A.15-1w, 3A.15-1x, 3A.15-1y, 3A.15-1z, 3A.15-1aa, 3A.15-1bb, and 3.15-1cc.

Mitigation for these off-site elements that are outside of the City of Folsom's jurisdictional boundaries and must be coordinated by the project applicant(s) of each applicable project phase with the affected oversight agency(ies).

However, neither the City/USACE nor the project applicant(s) would have control over their timing or implementation; therefore, these impacts for which the co-lead agencies do not have control over mitigation are considered potentially significant and unavoidable. If the responsible agency(ies) implement the required mitigation, then the impact(s) would be reduced to a less-than-significant level.

4.5.16 CUMULATIVELY CONSIDERABLE IMPACTS

As discussed in detail in Section 4.1, "Cumulative Impacts" above, and in Sections 3A.15 and 3B.15, "Traffic and Transportation," project implementation would result in direct and indirect cumulatively considerable incremental contributions to significant adverse cumulative impacts. Those impacts are summarized below.

AESTHETICS

- Substantial alteration of a scenic vista - "Land"
- Substantial degradation of visual character - "Land"
- Substantial damage to the viewshed of a designated scenic corridor - "Land"
- New skyglow effects - "Land" and "Water"

AIR QUALITY

- Exposure of on-site sensitive receptors to TACs from high traffic volumes on local roadways (including quarry truck trips) - "Land"
- Exposure of on-site sensitive receptors to odorous exhaust emissions generated by equipment at the proposed City corporation yard - "Land"
- Exposure of new residents to odorous emissions - "Land"

BIOLOGICAL RESOURCES

- Loss or fill of wetlands and other Waters of the U.S., including wetlands and Waters of the State - "Land" and "Water"
- Loss or modification of sensitive natural habitats - "Land" and "Water"
- Decline of special-status plant and animal species in the region - "Land" and "Water"
- Degradation of wildlife habitat - "Land"
- Loss of blue oak woodland - "Land"
- Loss of annual grassland - "Land"

CLIMATE CHANGE

- Temporary, short-term construction-related generation of greenhouse gases - "Land" and "Water"
- Long-term operation-related generation of greenhouse gases - "Land"

CULTURAL RESOURCES

- Loss of known and unknown prehistoric and historic-era cultural sites - "Land" and "Water"

LAND USE AND AGRICULTURAL RESOURCES

- Cancellation of Williamson Act contracts - "Land"

NOISE

- Temporary, short-term exposure of sensitive receptors to noise - "Land" and "Water"
- Temporary, short-term exposure of sensitive receptors to potential groundborne noise and vibration - "Land" and "Water"
- Long-term exposure of sensitive receptors to increased traffic noise levels - "Land"

TRAFFIC AND TRANSPORTATION

- Lack of funding through City's Transportation Impact Fee Program - "Land"
- Increases to peak-hour and daily traffic volumes resulting in unacceptable levels of service (City of Folsom, Sacramento County, El Dorado County, Caltrans) - "Land" and "Water"

UTILITIES AND SERVICE SYSTEMS

- Contribution to presently unknown environmental impacts associated with EID sewer conveyance upgrades - "Land"
- Contribution to presently unknown environmental impacts associated with EID wastewater treatment plant upgrades - "Land"
- Contribution to significant and unavoidable air quality impact from expansion of SRWTP identified in 2020 Master Plan EIR - "Land"

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Zone 4..... ES-54, ES-86, 1-17, 1-18, 2-78, 2-79, 2-82, 2-88, 2-89, 3A.18-26, 3A.18-28, 3A.18-29, 3A.18-31, 3A.18-38, 3A.18-43, 3A.18-49, 3B.1-1, 3B.1-2, 3B.1-3, 3B.1-4, 3B.1-13, 3B.1-17, 3B.1-18, 3B.1-20, 3B.2-2, 3B.3-1, 3B.3-2, 3B.3-3, 3B.3-4, 3B.3-5, 3B.3-6, 3B.3-7, 3B.3-8, 3B.3-9, 3B.3-11, 3B.3-13, 3B.3-14, 3B.3-15, 3B.3-20, 3B.3-23, 3B.3-25, 3B.3-27, 3B.3-29, 3B.3-31, 3B.3-32, 3B.3-34, 3B.3-36, 3B.3-46, 3B.3-47, 3B.3-49, 3B.3-50, 3B.3-52, 3B.3-53, 3B.3-54, 3B.3-61, 3B.3-62, 3B.5-1, 3B.5-2, 3B.5-6, 3B.5-7, 3B.6-1, 3B.6-3, 3B.7-1, 3B.7-2, 3B.7-3, 3B.7-4, 3B.7-5, 3B.7-6, 3B.7-7, 3B.7-11, 3B.7-13, 3B.7-14, 3B.8-1, 3B.8-2, 3B.8-3, 3B.8-4, 3B.8-14, 3B.8-23, 3B.9-1, 3B.9-6, 3B.9-8, 3B.9-17, 3B.9-32, 3B.10-1, 3B.10-5, 3B.10-6, 3B.10-7, 3B.10-9, 3B.10-10, 3B.10-12, 3B.10-13, 3B.11-1, 3B.11-2, 3B.11-8, 3B.11-14, 3B.12-1, 3B.15-1, 3B.15-2, 3B.15-3, 3B.15-4, 3B.15-5, 3B.15-7, 3B.15-10, 3B.16-1, 3B.16-2, 3B.16-7, 3B.17-8, 3B.17-13, 4-12, 4-13, 4-32, 4-33, 4-43, 4-81

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