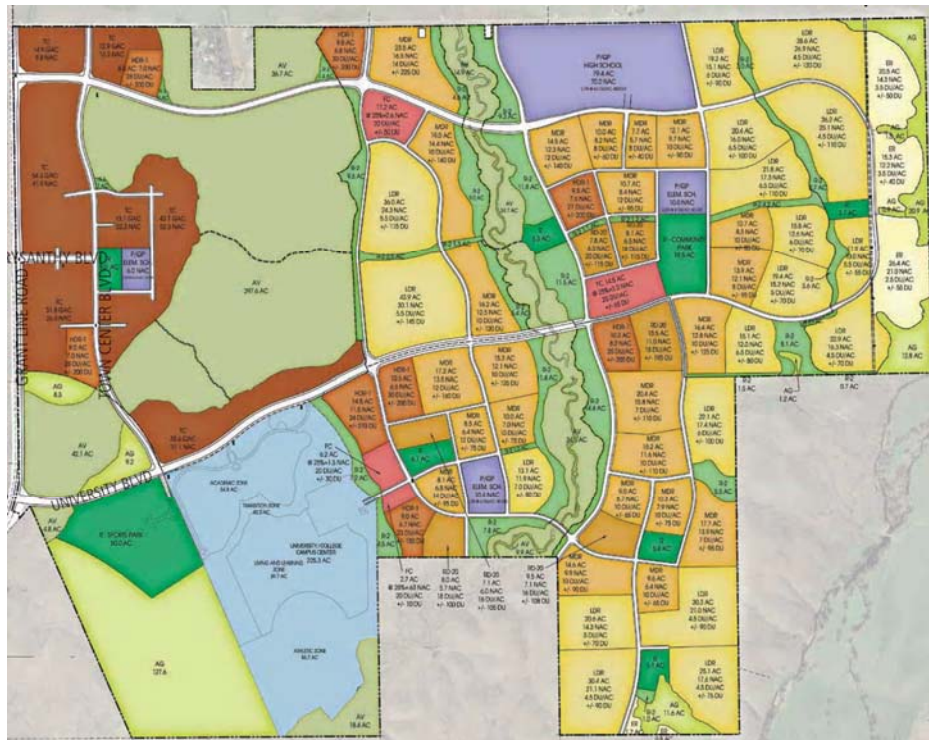

FINAL ENVIRONMENTAL IMPACT REPORT

VOLUME I OF III

CORDOVA HILLS



Control Number: 2008-GPB-SDP-ZOB-AHP-00142
State Clearinghouse Number: 2010062069
November 2012

COUNTY OF SACRAMENTO
DEPARTMENT OF COMMUNITY DEVELOPMENT
PLANNING AND ENVIRONMENTAL REVIEW
827 7TH STREET, ROOM 220
SACRAMENTO, CALIFORNIA 95814



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PREPARED BY

DEPARTMENT OF COMMUNITY DEVELOPMENT
PLANNING AND ENVIRONMENTAL REVIEW

WITH ASSISTANCE BY

Sacramento County Department of Transportation
Sacramento County Department of Water Resources
DKS Transportation Solutions
Atkins (formerly PBS&J)
ECORP Consulting, Inc.

FINAL ENVIRONMENTAL IMPACT REPORT

CORDOVA HILLS

General Plan Amendment, Large Lot Tentative Subdivision
Map, Zoning Ordinance Amendment, and Affordable Housing
Plan

Control Number 2008-GPB-SDP-ZOB-AHP-00142

State Clearinghouse Number: 2010062069

This Environmental Impact Report has been prepared pursuant to the California Environmental Quality Act of 1970 (Public Resources Code Division 13). An Environmental Impact Report is an informational document which, when this Division requires its preparation, shall be considered by every public agency prior to its approval or disapproval of a project. The purpose of an Environmental Impact Report is to provide public agencies with detailed information about the effect that a proposed project is likely to have on the environment; to list ways in which any adverse effects of such a project might be minimized; and to suggest alternatives to such a project.

Prepared by the
COUNTY OF SACRAMENTO
DEPARTMENT OF COMMUNITY DEVELOPMENT
PLANNING AND ENVIRONMENTAL REVIEW
www.DERA.saccounty.net
827 7TH STREET, ROOM 220
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**Department of
Community Development
Lori A. Moss, Director**



Divisions
Building Permits & Inspection
Code Enforcement
County Engineering
Planning & Environmental Review

November 28, 2012

TO: All Interested Parties

**SUBJECT: FINAL EIR FOR "CORDOVA HILLS"
(CONTROL NO: 2008-GPB-SDP-ZOB-AHP-00142)**

The subject Final Environmental Impact Report (FEIR) is attached for your review. The first Sacramento County Board of Supervisors hearing on the Project will be held in the Board of Supervisors Chambers, at 700 H Street in Sacramento, but the date has not been scheduled at this time. A notice of the date and time of the public hearing will be provided to all property owners within 500 feet of the Project site by the hearing body authorized to conduct the public hearing for the proposed project. Interested individuals not within this radius should contact the Clerk of the Board (<http://www.sccob.saccounty.net/pages/plan.html>) to be placed on the hearing notice mailing list. Interested individuals may also check the materials for upcoming hearings on the Sacramento County website (www.saccounty.net) by clicking on the Public Meetings link, and then on the Board of Supervisors Meeting Agenda link.

For questions about this environmental document, please contact Lauren Hocker or John Lundgren of this office at 874-7914.

Sincerely,

[Original Signature on File]

Catherine Hack,
Environmental Coordinator

P:\2008\08-00142 CORDOVA HILLS\Env Docs\FEIR\00 cvr lttr.doc

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EXECUTIVE SUMMARY AND MITIGATION MEASURES

The subject of this Environmental Impact Report (EIR) is a project known as Cordova Hills. The project is located on the eastern side of Grant Line Road, south of Glory Lane, in unincorporated Sacramento County.

The following environmental impact and mitigation summary table (*Table ES-1: Executive Summary of Impacts and Mitigation on page 2*) briefly describes the project impacts and the mitigation measures recommended to eliminate or reduce the impacts. The residual impact after mitigation is also identified. Immediately following the summary table is a description of mandated mitigation monitoring requirements (see *Mitigation Monitoring and Reporting Program on page 45*). Detailed discussions of each of the identified impacts and mitigation measures, including pertinent support data, can be found in the specific topic sections in the remainder of this report.

This report has identified project-related impacts associated with cultural resources, air quality (related to construction ozone precursors, toxic air contaminants, and odor), biological resources (bird species, western spadefoot toad, and plant species), hazardous materials (landfill gas migration), noise, and traffic and circulation (pedestrian/bicycle network, public transit, and some facilities) as potentially significant, which could be reduced to a less than significant level through inclusion of recommended mitigation measures.

This report identifies significant and unavoidable impacts related to aesthetics, air quality (related to construction particulate matter, operational ozone precursors, and implementation of the State Implementation Plan for ozone), biological resources (wetlands and vernal pool crustaceans), climate change, land use (SACOG Blueprint principles conflict), noise (substantial increases in existing ambient levels), public utility construction, and traffic and circulation (some facilities).

Impacts associated with agricultural resources, air quality (related to carbon monoxide emissions), geology and soils, hydrology and water quality, general land use, noise (Kiefer Landfill and Mather Airport), public services, and public utilities are considered less than significant.

Since publication of the DEIR, the university/college campus center portion of the Project has become an area of known controversy. At the time of the Project application, there was an identified tenant for the university use proposed as part of the Project. In July of 2011, the University of Sacramento announced that they were closing the University, and would no longer be the tenant on the Project site. As a result of this, there is now controversy over whether the university/college campus center should still be included as part of the Project. The basis of the controversy is the assertion that because a tenant is no longer identified that the proposed university/college campus center is a speculative use and/or that loss of this tenant should be treated as a change in the Project Description. The Sacramento Metropolitan Air Quality Management District has

commented that they no longer consider the Air Quality Mitigation Plan to be technically adequate because of this controversy.

The lead agency has considered these arguments, but has concluded that no portion of a Project can simply be excluded from analysis at the discretion of the EIR preparers; this could be characterized as an improper segmentation, as CEQA requires analysis of the whole of a Project (CEQA Guidelines Section 15378.a). The analysis examines the Project application which has been submitted to, and accepted by, the County. The Project Description identified and described the proposed use and the associated design standards proposed in the SPA Master Plan; none of these Project elements have been altered, and thus the Project Description has not changed. Furthermore, the identification of the end user of a project is not required under CEQA for purposes of the project's environmental analysis (see, *Maintain Our Desert Environment v. Town of Apple Valley* (2004) 124 Cal.App.4th 430, 15 Cal.Rptr.3d 322; *American Canyon Community v City of American Canyon* (2006) 145 CalApp.4th 1062, 52 Cal.Rptr.3d 312; also see, *Friends of Davis v. City of Davis* (2000) 83 Cal.App.4th 1004, 100 Cal.Rptr.2d 413.)

The applicant has proposed a university/college campus center as part of the Project, and has included a chapter in the SPA Master Plan which describes the proposed use. Any change to the proposed land use would require an SPA Amendment and environmental review pursuant to CEQA. Furthermore, mitigation requires that any SPA amendment include an analysis of the Air Quality Mitigation Plan and GHG Reduction Plan, to ensure that the performance criteria on which those plans are based will still be met despite the amendment. On these grounds, the FEIR still contains an analysis of the entire Project that has been proposed.

Table ES-1: Executive Summary of Impacts and Mitigation

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
AESTHETICS			
Degradation of Existing Views and Visual Quality			
The Project will remove the illusion of continuity – that is, the illusion that the grasslands continue unbroken up to the foothills – both due to the introduction of the structures themselves, and because of the substantial changes in the color and texture of the viewshed. The Project will introduce hard, angled shapes into an area that previously appeared smooth, and will introduce a wider array of color into an area that was previously quite uniform. Though this will increase the diversity of the view, the loss of continuity and the partial obstruction of views of the Sierra Nevada significantly and negatively impacts the quality of the views. These impacts are due to the placement of a large urban development in an area currently dominated by open space; the impact is not due to any particular feature or features that could be changed. The Project will substantially degrade the existing visual character and quality of the site.	S	None available.	SU
New Source of Light or Glare			
Project lighting will not result in sleep disruption or significant wildlife impacts, but will nonetheless introduce a substantial new source of light. This impact is not due to any individual feature or features, but due to the result of introducing a large urban development within a rural landscape. Though the impact cannot be made less than significant, usage of lighting fixtures that minimize glare and light trespass can reduce the impact to some degree.	S	AE-1. The SPA shall be amended to require all lighting applications subject to the 2008 Building Efficiency Standards Section 147 to use fixtures approved by the International Dark Sky Association.	SU

¹ PS = Potentially Significant S = Significant SU = Significant and Unavoidable LS = Less Than Significant

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
AGRICULTURAL RESOURCES			
<p>The proposed uses are permitted with approval of the Zoning Ordinance Amendment to adopt the Cordova Hills SPA, the Project does not convert the Unique Farmland outside of the USB to urban uses, and the land does not support intensive agricultural investment. Though there are soils that are considered prime when irrigated, the site is not irrigated. The Project will result in the loss of 8.6 acres of Unique Farmland and 242.4 acres of Grazing Land, which exceeds the 50-acre threshold established by the County; mitigation is required. The Project will not result in substantial conflicts with existing agricultural use of adjacent lands, though mitigation requiring deed notices is recommended.</p> <p>There is one existing Williamson Act Contract (72-AP-109) within the Project limits. The landowner initiated the non-renewal process for this contract in February 2007. Under the nonrenewal process the contract will expire in the year 2016, and the land will no longer be subject to Williamson Act contract restrictions. The Project proposal includes a large-lot subdivision map which would create parcels that range from less than an acre in size to approximately 35 acres, and also includes a rezone from an agricultural to an urban designation. In order to approve the subdivision map, the approval action would either need to be deferred until February 2013 (within three years of nonrenewal) or the Board of Supervisors would need to be make findings that the parcels can maintain agricultural use. In order to approve the rezoning, the approval action would need to stipulate that the zoning agreement will not become effective until 2016. Mitigation is included to ensure agricultural activities are maintained until expiration. Provided these actions take place, the Project would be consistent with the provisions of the Williamson Act.</p>	LS	<p>AG-1. <u>The applicant shall disclose to all</u> All prospective buyers of properties within 500 feet of the northern property boundary shall receive a recorded notice that would appear in the Title report that they could be subject to inconvenience or discomfort resulting from accepted farming practices as per provisions of the County Right-To-Farm Ordinance <u>and shall include a Note on all final maps disclosing the Right-To-Farm Ordinance.</u></p> <p>AG-2. The applicant shall enter into an agreement with an agricultural operator to maintain grazing use, or other more intensive use, on the land which is subject to Williamson Act contract 72-AP-109. Agricultural use shall be maintained until Williamson Act contract expiration. Documentation of this agreement shall be submitted to the Environmental Coordinator prior to approval of the zoning agreement for the Williamson Act contracted property.</p> <p>AG-3. Prior to the approval of improvement plans, building permits, or recordation of the final map, whichever occurs first, the applicant shall offset the loss of 8.6 acres of Unique Farmland and 242.4 acres of Grazing Land through 1:1 preservation of farmland within a permanent conservation easement. Preservation land must be in-kind or of similar resource value.</p>	LS

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
AIR QUALITY			
Construction Activities Would Increase NO_x Emissions			
The Project has the potential to result in significant impacts throughout most of the life of the Project, even after implementation of the Basic Construction Emission Control Practices and Enhanced Construction Emission Control Practices which are required by rule through the Sacramento Metropolitan Air Quality District (SMAQMD). Mitigation is included (which is in addition to the rules) to ensure that all subsequent projects which occur within the Project area conform to the SMAQMD mitigation and abatement requirements which are in effect at the time. This will offset Project emissions.	S	AQ-1. The following language shall be added to the SPA: All individual development projects shall implement Sacramento Metropolitan Air Quality Management District rules and mitigation pertinent to construction-related ozone precursor emissions, as defined by the most current version of the Sacramento Metropolitan Air Quality Management District Guide to Air Quality Assessment.	LS
Operational Emissions of Ozone Precursors			
The Project will result in worst-case NO _x and ROG emissions of 415.22 pounds per day and 857.40 pounds per day, respectively, which is significantly above the threshold of 65 pounds per day. A mitigation plan is included to reduce emissions by 35%, but emissions will still exceed the threshold.	S	AQ-2. Comply with the provisions of the Air Quality Management Plan dated June 1, 2011, and incorporate the requirements of this plan into the Cordova Hills Special Planning Area conditions. <u>Also, the following text shall be added to the Cordova Hills SPA: "All amendments to the Cordova Hills SPA with the potential to result in a change in ozone precursor emissions shall include an analysis which quantifies, to the extent practicable, the effect of the proposed SPA amendment on ozone precursor emissions. The amendment shall not increase total ozone precursor emissions above what was considered in the AQMP for the entire Cordova Hills project and shall achieve the original 35% reduction in total overall project emissions. If the amendment would require a change in the AQMP to meet that requirement, then the proponent of the SPA amendment shall consult with SMAQMD on the revised analysis and shall prepare a revised AQMP for approval by the County, in consultation with SMAQMD."</u>	SU

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
Construction Activities Would Increase Particulate Matter Emissions			
Modeling conducted by SMAQMD has indicated that applying basic construction rules will ensure that impacts will not be significant provided that construction is limited to no more than 15 acres of active grading. On a project of this size, it is unreasonable to assume that construction will be limited to such a small area. The Project will generate particulate matter emissions which exceed thresholds.	S	None available.	SU
Conflict With or Obstruct Air Quality Plans			
The current State Implementation Plan (SIP) did not assume that the land east of Grant Line Road would develop, and thus even if the Project's emissions of ozone precursors were not significant, the Project would still conflict with implementation of the SIP.	S	Refer to AQ-2.	SU
Project Operation Would Generate CO Emissions			
Eighteen intersections would either be subject to degradation of LOS to a level of service E or worse, or add vehicles to an intersection already operating at an LOS of E or worse. Examining these facilities as compared to the SMAQMD screening methodology for CO impacts, Project traffic would not cause threshold exceedance.	LS	None required.	LS

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
Project Operation Would Result in TAC Emissions			
<p>Using the published California Air Resources Board siting criteria for sources of toxic air contaminants (TAC) and sensitive receptors, there are no off-site TAC sources proximate to the sensitive receptors of the Project, and the Project will not generate TAC that would impact off-site sensitive receptors. The Project could result in exposure of proposed on-site uses to proposed on-site stationary source TAC, but mitigation is included to ensure that the siting of new uses conforms to ARB recommendations.</p>	PS	<p>AQ-3. <i>The following language shall be added to the SPA:</i></p> <p>Buffers shall be established on a project-by-project basis and incorporated during permit or project review to provide for buffer separations between sensitive land uses and sources of air pollution or odor. The California Air Resources Board's "Air Quality and Land Use Handbook: A Community Health Perspective", or more current document, shall be utilized when establishing these buffers. Sensitive uses include schools, daycare facilities, congregate care facilities, hospitals, or other places of long-term residency for people (this includes both single- and multiple-family). The buffers shall be applied to the source of air pollution or odor, and shall be established based either on proximity to existing sensitive uses or proximity to the property boundary of land designated for sensitive uses. Buffers current at the time of the establishment of this SPA indicate that sensitive uses should be:</p> <ul style="list-style-type: none"> A. A least 500 feet from auto body repair services. B. At least 50 feet from existing gasoline dispensing stations with an annual throughput of less than 3.6 million gallons and 300 feet from existing gasoline dispensing stations with an annual throughput at or above 3.6 million gallons. C. At least 300 feet from existing land uses that use methylene chloride or other solvents identified as a TAC, including furniture manufacturing and repair services. 	LS

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
Project Operation May Result in Exposure to Objectionable Odors			
<p>The Project is proximate to both the Boys Ranch and the Kiefer Landfill. The former facility includes wastewater treatment ponds. The facility is specifically prohibited from causing a nuisance odor condition, and nuisance odor is fully controllable through maintenance of aerated conditions in the ponds. Though based on historic operation of wastewater facilities in general and of this facility in specific it can be expected that there will be events when aeration fails (a pump malfunctions, for instance), it can also be expected that these will be infrequent events of short duration.</p> <p>Only considering the meteorological conditions and the proximity of the Project to the landfill, it would be likely that some significant odor impacts to the Project could occur; however, the SMAQMD Guide does provide further information regarding factors that can reduce odor impacts, if present. Kiefer Landfill has established an active gas-to-energy system that employs active gas extraction from the landfill for use in electrical generation. As landfill gas is a major source of odor from a landfill, the active extraction of gases for use in generating electricity is an effective form of limiting odors. Given the foregoing and the mitigation incorporated below, odor impacts are not expected to be substantial.</p>	PS	<p>AQ-4. Include in the SPA a requirement that the western perimeter of the Sports Park and University/College Campus Center (where these are within 2,000 feet of the Kiefer landfill) include a minimum 25-foot-wide landscaping area. This landscaping area shall include a dense mix of trees and shrubs, to screen the uses from the landfill. Acceptable tree species include those expected to reach minimum heights of 40 feet.</p>	LS
BIOLOGICAL RESOURCES			
Wetlands and Surface Waters			
<p>In total, there are approximately 89.11 acres of wetland resources on the Project site. The Project will result in the fill or dredge of 41.37 acres of wetlands on the site, which includes approximately 16 acres of vernal pool; three acres of seasonal wetland; 15 acres of seasonal wetland swale; six acres of intermittent drainage; and less than one acre of</p>	S	<p>BR-1. To compensate for the permanent loss of wetlands, the applicant shall perform one or a combination of the following prior to issuance of building permits, <u>and shall also obtain all applicable permits from the Army Corps of Engineers, the U.S. Fish and Wildlife Service, the Central Valley Regional Water Quality</u></p>	SU

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
<p>seep, stock pond, and creek. Mitigation is required to offset these direct impacts, but given the extent of wetland loss (46% of the wetlands on the site) and the fact that this is in a Rank 1 Vernal Pool Recovery Plan area the mitigation is not sufficient to reduce impacts.</p> <p>Future development within the SPA could include amendments to the SPA which would modify the Avoided Area boundaries. This could result in additional incremental losses of needed uplands and/or wetlands, increasing the severity of what is already a significant impact in an area noted as vital to the recovery of vernal pool resources. For this reason, mitigation is also included which would require the establishment of a permanent conservation easement over all areas designed as Avoided.</p>		<p><u>Control Board, and the California Department of Fish and Game:</u></p> <p>A. Where a Section 404 Permit has been issued by the Army Corps of Engineers, or an application has been made to obtain a Section 404 Permit, the Mitigation and Management Plan required by that permit or proposed to satisfy the requirements of the Corps for granting a permit may be submitted for purposes of achieving a no net-loss of wetlands. The required Plan shall be submitted to the Environmental Coordinator, U.S. Army Corps of Engineers, and U.S. Fish and Wildlife Service for approval prior to its implementation.</p> <p>B. If regulatory permitting processes result in less than a 1:1 compensation ratio for loss of wetlands, the Project applicant shall demonstrate that the wetlands which went unmitigated/uncompensated as a result of permitting have been mitigated through other means. Acceptable methods include payment into a mitigation bank or protection of off-site wetlands through the establishment of a permanent conservation easement, subject to the approval of the Environmental Coordinator.</p> <p>C. The Project applicant may participate in the South Sacramento Habitat Conservation Plan if it is adopted, and if the Project area and activities are covered. The applicant shall prepare Project plans in accordance with that Plan and any and all fees or land dedications shall be completed prior to construction.</p> <p>BR-2. Prior to issuance of building permits, all areas designated within the SPA as Avoided shall be placed within a permanent conservation easement, which shall be reviewed and approved by the Environmental Coordinator. At a minimum, the permanent conservation</p>	

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
		easements must cover all areas which are required to be preserved as part of the Section 404 and Section 401 wetland permits.	
Special Status Species			
<i>Bird Species</i>			
<p>The following special status bird species are identified as having potential to occur on or near the Project site: burrowing owl, Cooper's hawk, ferruginous hawk, golden eagle, grasshopper sparrow, northern harrier, Swainson's hawk, tricolored blackbird, and white-tailed kite. Excluding the large avoided area and two adjacent smaller avoided areas on the western side of the site, the Project will result in the conversion of 2,120 acres of grassland habitat to urban uses (note that the central linear avoided area is not considered preserved for the purposes of Swainson's hawk habitat, which is why the mitigation requirement in BR-4 is higher than the total grassland lost). Except the tricolored blackbird, all of the species listed above use grasslands for foraging and/or nesting and will be impacted by Project development. The Swainson's hawk is the only Threatened species, and mitigation is included requiring 1:1 habitat mitigation. Mitigation of habitat for the benefit of the Swainson's hawk will also provide habitat compensation for other bird species.</p> <p>The Project site does not contain any trees for nesting, but there are offsite trees nearby; pre-construction nesting surveys have been included for tree-nesting raptors. Pre-construction nesting surveys are also included for burrowing owl (which is ground-nesting), and are also included for tricolored blackbird (for those areas which are within 300 feet of suitable habitat, such as cattail or blackberry).</p>	S	<p>BR-3. If construction, grading, or Project-related improvements are to occur between March 1 and September 15, a focused tree survey for <u>tree- or ground-nesting</u> raptors within 500 feet of the <u>construction site (1/2-mile for Swainson's hawk) and for ground-nesting grasshopper sparrow</u> shall be conducted by a qualified biologist within 14 days prior to the start of construction work (including clearing and grubbing). If active nests are found, the California Department of Fish and Game shall be contacted to determine appropriate protective measures. If no active nests are found during the focused survey, no further mitigation will be required.</p> <p>BR-4. Prior to the approval of improvement plans, building permits, or recordation of the final map, whichever occurs first, implement one of the options below to mitigate for the loss of Swainson's hawk foraging habitat on the Project site; based on current Project designs this is 2,267 acres. Based on current designs, this can be reduced to 2,231 acres of mitigation if the applicant establishes a permanent conservation easement over the areas designated Agriculture on the eastern and southeastern sides of the site (these are areas outside of the Urban Services Boundary). Foraging habitat preserved shall consist of grassland or similar habitat open habitat, not cropland, because this mitigation measure also offsets impacts to other species that do not use cropland habitat.</p> <p>A. The project proponent shall utilize one or more of the mitigation options (land dedication and/or fee payment)</p>	LS

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
		<p>established in Sacramento County's Swainson's Hawk Impact Mitigation Program (Chapter 16.130 of the Sacramento County Code).</p> <p>B. The Project proponent shall, to the satisfaction of the California Department of Fish and Game, prepare and implement a Swainson's hawk mitigation plan that will include preservation of Swainson's hawk foraging habitat.</p> <p>C. Should the County Board of Supervisors adopt a <u>new</u> Swainson's hawk mitigation policy/program (which may include a mitigation fee payable prior to issuance of building permits) prior to the implementation of one of the measures above, the Project proponent may be subject to that program instead.</p> <p>If the design of the primary avoided area on the western plateau (currently 382 acres in size) is increased in size in response to Section 404 wetland permitting requirements, the total amount of mitigation land required may be adjusted downward to reflect this increased avoidance, at the discretion of the Environmental Coordinator.</p> <p>BR-5. Prior to construction activity (including site improvements, and building construction) focused surveys shall be conducted by a qualified biologist for burrowing owls in the construction area and within 500 feet of the construction area. Surveys shall be conducted no less than 14 days and no more than 30 days prior to commencement of construction activities. Surveys shall be conducted in accordance with "Burrowing Owl Survey Protocol and Mitigation Guidelines" published by The California Burrowing Owl Consortium (April 1993). The following shall also apply:</p> <p>A. If no occupied burrows are found in the survey area, a</p>	

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
		<p>letter report documenting survey methods and findings shall be submitted to the County and no further mitigation is necessary.</p> <p>B. If an occupied burrow is found the applicant shall contact the Environmental Coordinator and consult with the California Department of Fish (CDFG), prior to construction, to determine if avoidance is possible or if burrow relocation will be required.</p> <p>C. If owls are to remain on-site, a minimum of 6.5 acres of foraging habitat for each occupied burrow needs to be permanently preserved according to California Department of Fish and Game guidelines. In addition, no activity shall take place within <u>160 feet</u> of an active burrow from September 1 to January 31 (wintering season) or <u>250 feet</u> from February 1 through August 31 (breeding season). Protective fencing shall be placed, at the distances above, around the active burrows and no activity shall occur within the protected buffer areas. Permanent improvements shall be a minimum of 250 feet from an occupied burrow.</p> <p>D. Any impact to active owl burrows, relocation of owls, or mitigation for habitat loss shall be done in accordance with the Fish and Game "Staff Report on Burrowing Owl Mitigation" (October 17, 1995) or the version current at the time of construction. Written evidence from Fish and Game staff shall be provided to the Environmental Coordinator attesting to the permission to remove burrows, relocate owls, or mitigate for lost habitat, and shall include a plan to monitor mitigation success.</p> <p>BR-6. If construction occurs between March 1 and July 31 pre-construction surveys for nesting tricolored blackbirds shall be performed by a qualified biologist. Surveys shall</p>	

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
		<p>include the project construction site and areas of appropriate habitat within 300 feet of the construction site. The survey shall occur no longer than 14 days prior to the start of construction work (including clearing, grubbing or grading). The biologist shall supply a brief written report (including date, time of survey, survey method, name of surveyor and survey results) to the Environmental Coordinator prior to ground disturbing activity. If no tricolored blackbird were found during the pre-construction survey, no further mitigation would be required. If an active tricolored blackbird colony is found on-site or within 300 feet of the project construction site the project proponent shall do the following:</p> <p>A. Consult with the California Department of Fish and Game to determine if project activity will impact the tricolored blackbird colony(s), and implement appropriate avoidance and impact minimization measures if so directed. Provide the Environmental Coordinator with written evidence of the consultation or a contact name and number from the California Department of Fish and Game.</p> <p>B. The applicant may avoid impacts to tricolored blackbird by establishing a 300-foot temporary setback with fencing that prevents any project activity within 300 feet of the colony. A qualified biologist shall verify that setbacks and fencing are adequate and will determine when the colonies are no longer dependent on the nesting habitat (i.e. nestlings have fledged and are no longer using habitat), which will determine when the fencing may be removed. The breeding season typically ends in July.</p>	
Amphibians			

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
<p>The Project site contains suitable breeding habitat and suitable upland habitat for the western spadefoot toad. The latter species has been observed within the site. The Project will result in loss of approximately 19 acres of seasonal wetlands and vernal pools which are potential breeding habitat for the species, for which 1:1 mitigation is required pursuant to County policies regarding wetland loss.</p> <p>Western spadefoot, a Species of Concern, has been observed in several counties across the state, and a number of sites with suitable habitat for western spadefoot are already being protected. Additionally, 23 vernal pool species are federally protected; preservation efforts for those species and associated habitats will contribute to the conservation of the western spadefoot. While a localized population of the toad may be reduced through development of the Project site, the regional population will not be reduced significantly for the reasons stated above.</p>	LS	Refer to Mitigation Measure BR-1.	LS
<i>Invertebrates</i>			
<p>The site contains wetlands suitable for the California linderiella, midvalley fairy shrimp, Ricksecker's water scavenger beetle, vernal pool fairy shrimp, and vernal pool tadpole shrimp. Published protocols for the vernal pool fairy shrimp and vernal pool tadpole shrimp contain survey requirement for determining absence, and mitigation to be applied in case of presence or if presence is being assumed. These same measures are applied to the Species of Concern, California linderiella and midvalley fairy shrimp as well. Mitigation being required for these species will also serve to provide mitigation for the Ricksecker's water scavenger beetle, which uses the same habitats. Though in-kind mitigation will be required for the loss of habitat on the site, the loss of 46% of the wetlands on the site within an area identified as vital to the recovery for vernal pool habitats and their dependent species is</p>	S	<p>BR-7. Presence of California linderiella, midvalley fairy shrimp, vernal pool fairy shrimp and vernal pool tadpole shrimp shall be assumed unless determinate surveys that comply with U.S. Fish and Wildlife protocol conclude that the species are absent. If the protocol surveys are performed and all listed crustacean species are absent, Ricksecker's water scavenger beetle may also be presumed absent, and no further mitigation shall be required for listed vernal pool invertebrates. If species are found, one or a combination of the following shall apply:</p> <p>A. <i>Total Avoidance: Species are present or assumed to be present.</i> Unless a smaller buffer is approved through formal consultation with the Fish and Wildlife Service, construction fencing shall be installed a minimum of 250 feet from all delineated vernal pool</p>	SU

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
significant even with mitigation.		<p>margins. All construction activities are prohibited within this buffer area. For all vernal pools where total avoidance is achieved, no further action is required.</p> <p>B. <i>Compensate for habitat removed.</i> Obtain all applicable permits from the U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, California Department of Fish and Game, and the Central Valley Regional Water Quality Control Board for any proposed modifications to vernal pools and mitigate for habitat loss in accordance with the Biological Opinion and Section 404 permits obtained for the Project. At a minimum, mitigation ratios shall be consistent with County General Plan Policy, which requires no net loss of wetland resources. Any vernal pool loss not mitigated through the permitting process shall be mitigated for by payment into a mitigation bank or protection of off-site wetlands through the establishment of a permanent conservation easement, subject to the approval of the Environmental Coordinator.</p>	
<i>Plants</i>			
<p>The Project site was surveyed for special status plant species in May 2007, April and June 2008, and May and July 2010 by ECORP Consulting Inc. The special status plant surveys revealed two special status species present on the Project site: legenere and Sacramento Orcutt grass. The wetlands containing these plants are located within Avoided Areas, but given the proximity of these wetlands to development areas, mitigation requires additional measures be implemented to control invasive species and to avoid pollution runoff from urban activities.</p>	PS	<p>BR-8. If construction activities encroach within the 250-foot buffer for vernal pools 358, 363, 370, 426 or 511 the applicant shall prepare a pesticide and pollution prevention plan. The plan shall include measures to reduce pollution run-off, pesticide drift, and other similar potential contaminates, to protect surrounding preserve areas from urban contaminates. Measures shall include the implementation of best management practices (e.g. straw wattles, silt fencing, and soil stabilization) for stormwater control. The plan shall be incorporated in the Operations and Management Plan which is a requirement of the Section 404 permit process.</p> <p>BR-9. The project applicant shall prepare an invasive species</p>	LS

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
		<p>removal and prevention plan. The plan shall provide methods to remove invasive species from preservation areas and to restore the affected wetland features. The plan shall include methods for the prevention of the introduction of new invasive species from landscapes associated with the development. Minimum components of such a plan shall include: mapping of existing invasive plant populations within the avoided areas, with the map being updated a minimum of every five years; a description of acceptable methods for removing invasive species, examples of which include hand removal or biological controls (e.g. natural parasites); and a prohibition on the use of non-native plants within either the avoided areas or the Recreation-2 areas. The plan shall be incorporated in the Operations and Management Plan which is a requirement of the Section 404 permit process.</p>	

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
CLIMATE CHANGE			
<p>In concert with state and federal activities, the design features of the SPA are intended to offset the Project climate change impact. Ideally, this mitigation would reduce the Project emissions and climate change impacts to levels that are not cumulatively significant, but there are many unknown variables and implementation challenges. Given the substantial emissions which will result from the Project and the uncertainties related to target-setting and the current state of modeling this analysis concludes that Project impacts may remain significant.</p> <p>The effects of climatic changes on the Sacramento region are potentially significant, and can only be mitigated through both adaptation and reduction strategies. By requiring mitigation of projects that may result in significant greenhouse gas emissions, and by adopting County programs and changes in government operations, the County is implementing all feasible strategies to reduce the effects of climate change on the region. Nonetheless, it is probable that these strategies will not be sufficient to offset all of the impacts of climate change, and that some of these impacts will be significant.</p>	S	<p>CC-1. The following text shall be added to the Cordova Hills SPA: All amendments to the SPA <u>with the potential to change SPA-wide GHG emissions</u> shall include an analysis which quantifies, to the extent practicable, the effect of the Amendment on <u>SPA-wide</u> greenhouse gas emissions. The Amendment shall not increase <u>SPA-wide</u> greenhouse gas emissions above an average 5.80 metric tons per capita (including emissions from building energy usage and vehicles). <u>If the SPA amendment would require a change in the approved GHG Reduction Plan in order to meet the 5.80 MT CO₂e threshold, then the proponent of the SPA amendment shall consult with the SMAQMD on the revised analysis and shall prepare a revised GHG Reduction Plan for approval by the County, in consultation with SMAQMD.</u></p>	SU
CULTURAL RESOURCES			
<p>The project area contains three historic era sites, and a fourth historical site that is included in a multi-component site. One prehistoric bedrock mortar station site and one prehistoric component of a multi-component site were discovered in the project area. None of the sites are associated with any important persons or events in California or national history. They are not considered to be unique and do not represent the work of a master or possess high artistic values. In all cases, the historic sites lack sufficient cultural material to address research questions. All of the historic sites were evaluated as not eligible under any criteria for the National Register of</p>	PS	<p>CR-1. If subsurface deposits believed to be cultural or human in origin are discovered during construction, then all work must halt within a 200-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology, shall be retained at the Applicant's expense to evaluate the significance of the find. If it is determined due to the types of deposits discovered that a Native American monitor is required, the Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites as established by the Native</p>	LS

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
<p>Historic Places or the California Register of Historical Resources and are not considered a historical resource or unique archeological resource as defined by CEQA. There always remains a potential to encounter buried or as yet undiscovered resources during land clearing and construction work. Mitigation is included to ensure that such resources are treated appropriately if discovered.</p>		<p>American Heritage Commission shall be followed, and the monitor shall be retained at the Applicant's expense.</p> <p>Work cannot continue within the 200-foot radius of the discovery site until the archaeologist conducts sufficient research and data collection to make a determination that the resource is either 1) not cultural in origin; or 2) not potentially eligible for listing on the National Register of Historic Places or California Register of Historical Resources.</p> <p>If a potentially-eligible resource is encountered, then the archaeologist, the Environmental Coordinator, and project proponent shall arrange for either 1) total avoidance of the resource, if possible; or 2) test excavations or total data recovery as mitigation. The determination shall be formally documented in writing and submitted to the Environmental Coordinator as verification that the provisions of CEQA for managing unanticipated discoveries have been met.</p> <p>In addition, pursuant to Section 5097.97 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.</p>	

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
GEOLOGY AND SOILS			
<p>Multiple topics were examined: soil erosion, expansive soils, naturally occurring asbestos, mineral resources, and geologic hazards. The Project has the potential to increase soil erosion due to disturbance of onsite soils, and some of the soils in the Project area have a high shrink-swell potential. There are existing regulations in place to address both of these issues, including the Sacramento County Land Grading and Erosion Control Ordinance, the Uniform Building Code, and the California Building Code. The Project site is not considered likely to include asbestos-containing soils, and soil testing found no evidence of naturally occurring asbestos. There are no mapped mineral resources on the site, and furthermore, the Project includes a plan to use whatever suitable rock deposits are found on the site to serve Project construction needs; the Project will not obstruct access to mineral resources. Seismic ground-shaking hazards are low in Sacramento County, and existing building codes require adherence to seismic design standards.</p>	LS	None required.	LS

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
HAZARDOUS MATERIALS			
<p>The site was assessed for on-site hazardous conditions, and this assessment concluded that there is no evidence of any recognized hazardous conditions that may have a significant adverse effect on the development of the project site. There are three agency-listed contaminated sites within approximately one mile of the project site. These include the Sacramento County Boys Ranch (a juvenile correction facility within 1,000 feet of the eastern Project boundary), Aerojet (located just over a mile to the northwest), and the Kiefer Landfill (located approximately 2,000 feet to the south). The Boys Ranch hazardous condition was remediated and the case closed. Aerojet remediation activities are ongoing. Contaminated soils from Aerojet would not affect the Project, as these are off-site, while the groundwater contamination plumes are migrating away from the Project area. Groundwater contamination at Kiefer Landfill is likewise migrating away from the Project site. The Project will also be using public water provided through the Sacramento County Water Agency, not groundwater. Landfill gas migration from Kiefer Landfill also appears not to affect the site, but a mitigation measure is nonetheless included for the small portion of the site outside of the Urban Services Boundary that is within the 2,000 foot buffer established around the Kiefer Landfill.</p>	PS	<p>HM-1. Any structure within the project boundaries (including but not limited to, buildings, subsurface vaults, utilities, or any other areas where potential landfill gas buildup may cause adverse impacts to the public health or safety or the environment) within 1,000 feet of buried waste or proposed buried waste at Kiefer Landfill (refer to Plate HM-2 of the EIR) shall be continuously monitored <u>by the owner/operator of said structure</u> for landfill gas and be designed and constructed to prevent landfill gas accumulation in those structures.</p>	LS

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
HYDROLOGY AND WATER QUALITY			
7Hydrology			
The Project included a Drainage Master Plan which evaluated the on- and off-site floodplains, the potential for hydromodification of stream channels, and the adequacy of existing and planned stormwater infrastructure. The existing floodplains on the site will be within the Avoided Areas where no development will occur, and detention basins have been included to ensure that the post-Project flow rates do not exceed pre-Project rates. Put in general terms, the design to prevent hydromodification is a detention basin outlet control structure which retains all stormwater runoff generated up to a 10-year event and slowly releases the runoff through a very small outlet. The Project also includes stormwater infrastructure which is sufficient to handle flows.	LS	None required.	LS
Water Quality			
Compliance with adopted Ordinances and standards will ensure that future development projects implemented as a result of Project approval will not cause violation of a water quality standard or waste discharge requirement, result in substantial erosion or siltation, and will not result in substantial increases to polluted runoff associated with construction. Compliance with the County Stormwater Ordinance, implementation of Low Impact Development Standards, and implementation of the Drainage Master Plan will ensure that development of the site will not alter the course of local waterways in a manner that results in substantial erosion or siltation, will not cause violation of a water quality standard or waste discharge requirement, and will not result in substantial increases to polluted runoff.	LS	None required.	LS

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
LAND USE			
Conflict With Adopted Land Use Plans			
The Project uses are compatible with surrounding existing and proposed land use plans, and would not result in substantial conflicts with land use plans designed to avoid environmental effects.	LS	None required.	LS
Conflict With the SACOG Blueprint and General Plan Policy			
The Project includes a wide variety of transportation choices, an array of housing choices, a mix of uses, compact community design, and fosters a sense of place. While acknowledging that in terms of internal community design the Project appears to be an excellent example of “smart growth” development and is consistent with relevant General Plan policies, it must also be acknowledged that the Project conflicts with the principles with respect to the preservation of open space and the proximity to existing developed communities. In terms of open space preservation, the analysis is somewhat subjective, and the Project has directed preservation toward the most sensitive vernal pool areas of the site. In terms of directing development toward existing communities, the conflict is more clear. Though projected for future development, the Blueprint envisions growth occurring from the existing city centers outward rather than the reverse. This is a fundamental underpinning to the Blueprint, and as a result, the Project’s inconsistency with this principle is considered substantial.	S	None available.	SU

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
Conflict with General Plan Growth Management Policy			
A project must be consistent with LU-120 before it may be considered for approval. The Planning Division has reviewed the Project for consistency with LU-120 and has found in the affirmative. The Project has been deemed consistent with criteria PC-1 through PC-10, and has achieved a total of 21 points in the criteria-based standards (CB-1 through CB-5). A total of 18 points is required and 24 points are possible. Given that the Project has been deemed consistent, Project impacts related to conflict with growth management policy are <i>less than significant</i> .	LS	None recommended.	LS
Conflict With General Plan Policies Related to Growth Inducement			
The Project is inconsistent with Policy LU-1, and includes a General Plan Amendment to address this inconsistency. The General Plan Amendment includes language specifically intended to avoid growth-inducing impacts.	LS	None required.	LS
Conflict With General Plan Policies Related to Public Services and Utilities			
Compliance with General Plan Policies LU-13, LU-66, LU-110, and LU-123 is intended to ensure that minimum service standards for public services and utilities are met. The Project includes a facilities financing plan which was submitted to all of the applicable service entities for review and approval. Long-term funding sources have been identified for the maintenance of public services. The Project will not result in any substantial environmental impacts related to conflict with General Plan policies which pertain to public services or utilities.	LS	None required	LS

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
Conflict With General Plan Policies Related to Air Quality and Transportation			
The Project results in significant impacts related to both transportation and air quality, but these impacts are not due to General Plan Policy inconsistency. The Project is consistent with policies intended to alleviate air quality and transportation impacts.	LS	None required.	LS
Conflict with General Plan Policies Related to Land Use Compatibility			
Policy LU-19 states that appropriate buffers should be placed between incompatible uses, and Policy LU-94 states that new development should be compatible with existing development. The Project is adjacent to two existing uses, the Boys Ranch and Kiefer Landfill, with the potential to result in conflicts. For the Boys Ranch, the distance from the majority of the site and the topographical changes between the site and the Boys Ranch act as a natural barrier. For the Kiefer Landfill, distance from the site combined with existing regulations for landfills will prevent substantial impacts. For both facilities, there remains the potential for nuisance impacts. For this reason, mitigation is included requiring disclosure of the facilities to prospective buyers.	LS	<p>LU-1. The location and nature of the Sacramento County Boys Ranch facility shall be disclosed to all prospective buyers of estate-residential properties.</p> <p>LU-2. The location and nature of the Kiefer Landfill facility shall be disclosed to all prospective buyers of properties within one mile of the ultimate active landfill boundary. <u>The disclosure notice shall include:</u></p> <p>A. <u>A statement substantially consistent with the following: “The landfill will expand in height and land area over time, and thus the visibility and proximity of the landfill from the property at the time of purchase does not reflect how visible or proximate the landfill will be in the future.” This statement shall be supplemented with relevant facts about ultimate landfill design, including the distance of the property to the ultimate planned edge of the landfill waste disposal area to the nearest 100 feet and the ultimate planned height of the landfill (as set forth in the Solid Waste Facilities Permit).</u></p> <p>B. <u>Notification that the landfill operates under a Solid Waste Facilities Permit and is required to control pests, vectors, litter, and odor to the extent</u></p>	LS

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
		<p><u>practicable, but that it is not possible to eliminate all of these nuisances. For this reason, property owners may experience some of these nuisance conditions.</u></p> <p>C. <u>Notification that the active landfill area is lighted at night.</u></p>	
Division/Disruption of An Established Community			
The division or disruption of an established community is an impact considered by CEQA. Case law has established that a project must create physical barriers within the established community in order to be considered under this impact category. There is no existing development on the project site, nor are there developments north, south, or east of the site that could be divided or disrupted by the project. Furthermore, the Project includes stub streets so that if there is development north or south of the site in the future, those uses could connect into the Project. The project will not disrupt or divide an established community.	LS	None required.	LS
Displacement of Housing			
There is no existing housing on the Project site that could be displaced by the project, nor would the project uses cause the displacement of nearby housing. The site is not included in the affordable housing inventory as part of implementation of the Sacramento County General Plan Housing Element.	LS	None required.	LS

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
NOISE			
Construction Noise			
It is acknowledged that construction related noise could be a nuisance to sensitive receptors; however, this increase in noise is short-term, and noise standards are intended to address long-term sources of noise. Construction-related noise would not result in a permanent increase in ambient noise. Though noise volumes would undergo short-term increases, the existing construction ordinance is designed to avoid significant community effects through the restriction of nighttime and weekend disturbance.	LS	None required.	LS

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
Traffic Noise			
<p>Traffic on the internal Project roadways and on Grant Line Road will generate noise that has the potential to exceed General Plan noise standards related to both residential and non-residential uses. Mitigation is included to ensure that future subdivisions and non-residential developments are constructed in a manner that achieves compliance with General Plan standards.</p>	S	<p>NO-1. All residential development projects exposed to greater than 65 dB L_{dn} (as identified in Appendix NO-1) at the property line shall be designed and constructed to reduce noise levels to within General Plan Noise Element standards for exterior activity areas. Potential options for achieving compliance with noise standards include, but are not limited to, noise barriers, increased setbacks, and/or strategic placement of structures. An acoustical analysis substantiating the required noise level reduction, prepared by a qualified acoustical consultant shall be submitted to and verified by the Environmental Coordinator prior to the issuance of any building permits for affected sites.</p> <p>NO-2. All residential development projects exposed to greater than 70 dB L_{dn} (as identified in Appendix NO-1) at the property line shall be designed and constructed to achieve an interior noise level of 45 dB L_{dn} or less. Potential options for achieving compliance with noise standards include, but are not limited to, noise barriers, increased setbacks, strategic placement of structures and/or enhanced building construction techniques. An acoustical analysis substantiating the required noise level reduction, prepared by a qualified acoustical consultant, shall be submitted to and verified by the Environmental Coordinator prior to the issuance of any building permits for the site.</p> <p>NO-3. Non-residential development projects such as churches, libraries, meeting halls, and schools exposed to greater than 60 dB L_{dn}, and all non-residential development projects such as transient lodging, hospitals and nursing homes, and office buildings exposed to greater than 65 dB L_{dn} (as identified in Appendix NO-1) at the property line shall demonstrate that interior noise volumes will not exceed General Plan Noise Element standards for non-</p>	LS

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
		<p>residential uses exposed to traffic noise. This may be accomplished by providing documentation that the type of use is within acceptable limits based on the location of the identified noise contours and assuming standard exterior-to-interior attenuation of 25 dB. If this cannot be demonstrated, an acoustical analysis substantiating the required noise level reduction, prepared by a qualified acoustical consultant, shall be submitted to and verified by the Environmental Coordinator prior to the issuance of any building permits for affected sites. Potential options for achieving compliance with noise standards include, but are not limited to, noise barriers, increased setbacks, strategic placement of structures and/or enhanced building construction techniques. The measure does not apply to commercial uses.</p> <p>NO-4. All parks exposed to noise volumes in excess of 70 dB (as identified in Appendix NO-1) at the property line shall be designed and constructed to reduce noise levels within park activity areas (benches, play structures, etc) to within General Plan Noise Element standards for parks. Potential options for achieving compliance with noise standards include, but are not limited to, noise barriers, increased setbacks, and/or strategic placement of structures. For barrier and other structural options, an acoustical analysis substantiating the required noise level reduction, prepared by a qualified acoustical consultant shall be submitted to and verified by the Environmental Coordinator prior to the issuance of any building permits for affected sites.</p>	

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
On-Site Stationary and Community Noise			
<p>The Project includes uses which include noise-generating sources such as playing fields, loading docks, a corporation yard, and other uses. Mitigation is included to require that all such uses located adjacent to residential lands be designed so as not to cause the General Plan standards to be exceeded.</p>	S	<p>NO-5. All non-residential development projects located adjacent to residentially designated properties shall be designed and constructed to ensure that noise levels generated by the uses do not result in General Plan Noise Element standards being exceeded on adjacent properties. An acoustical analysis substantiating the required noise level reduction, prepared by a qualified acoustical consultant shall be submitted to and verified by the Environmental Coordinator prior to the issuance of any building permits for the non-residential projects with the potential to generate substantial noise (e.g. car wash, auto repair, or buildings with heavy-duty truck loading docks) if those uses are adjacent to residentially designated properties. The acoustical analysis shall include, but not be limited to, consideration of potential noise conflicts due to operation of the following items:</p> <ul style="list-style-type: none"> • Outdoor playing fields; • Mechanical building equipment, including HVAC systems; • Loading docks and associated truck routes; • Refuse pick up locations; and • Refuse or recycling compactor units. 	LS
Kiefer Landfill Noise			
<p>All sensitive uses are located a sufficient distance from the landfill to avoid substantial noise exposure. Noise at the university/college campus center (the nearest area where residences would be located) would be 44 dB, which is well within standards.</p>	LS	None required.	LS

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
Substantial Increase in Existing Ambient Noise			
<p>The Project would result in a substantial increase in existing ambient noise for multiple roadway segments, but only two of these include receptors which would be impacted: Sunrise Boulevard and Douglas Boulevard. Noise volumes would be increased by 2 dB on Sunrise Boulevard and by 7 dB and 10 dB along Douglas Boulevard. Based on the existing noise environments, these are substantial increases. On Sunrise Boulevard, a noise barrier is not appropriate because businesses rely on visibility to attract customers, and on Douglas Road a barrier is already present. Thus, no further improvements can be made to reduce impacts.</p>	S	None available.	SU

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
Mather Airport			
<p>The project site is located approximately four miles east of Mather Airport. Although the project site is located outside the 60 dB CNEL contour of Mather Airport, the project site is located within the overflight path of approaching and departing aircraft that fly below 3,000 feet above ground level. During an average one-month time period, a very small percentage of total departure (two percent) and arrival (eight percent) flights are passing over the project site and there is less than 15 percent of the total touch-and-go flights passing over the project site. Though the Project will not expose people to excessive aircraft noise, continued and future use of Mather Airport has the potential to be a nuisance and generate objections by residents and other sensitive receptors. An Avigation Easement to inform future potential residential buyers will be required to help reduce the impact to Mather Airport from new complaints by future residents or other sensitive receptors of the proposed Project; these various conditions are included as mitigation.</p>	LS	<p>NO-6. The following conditions will be required to ensure adequate disclosure of Mather Airport operations:</p> <ol style="list-style-type: none"> 1. Notification in the Public Report prepared by the California Department of Real Estate shall be provided disclosing to prospective buyers that the parcel is located within the applicable Airport Planning Policy Area and that aircraft operations can be expected to overfly that area at varying altitudes less than 3,000 feet above ground level. 2. Avigation Easements prepared by the Sacramento County Counsel's Office shall be executed and recorded with the Sacramento County Recorder on each individual residential parcel contemplated in the development in favor of the County of Sacramento. All Avigation Easements recorded pursuant to this policy shall, once recorded, be copied to the director of Airports and shall acknowledge the property location within the appropriate Airport Planning Policy Area and shall grant the right of flight and obstructed passage of all aircraft into and out of the appropriate airport. 	LS

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
PUBLIC SERVICES			
Fire Protection			
<p>The Project site is located within an area of Sacramento County designated as a State Responsibility Area (SRA) by the California Department of Forestry and Fire Protection (CAL FIRE), and has been assigned a moderate fire hazard severity risk rating (the lowest fire hazard rating applied to SRAs). The site will be served by the Sacramento Metropolitan Fire District, which will need up to two fire stations on the site. The Project will be subject to the building standards and regulations of CAL FIRE and the Sacramento Metropolitan Fire District, and these regulations will be sufficient to ensure adequate protection.</p>	LS	None required.	LS
Police Protection			
<p>The Project is within the service area of the Sacramento County Sheriff's Department (SSD) and will increase the demand for SSD services. According to SSD, the development of the Project will "not likely necessitate the construction of additional police facilities". In order to meet staffing ratios, SSD would need to add 16 staff members. Law enforcement services will be funded through the County General Fund and through County Police Services Community Facilities District 2005-1 (CFD 2005-1) annual special tax, which will be levied on each new home. Existing funding mechanisms, policies and regulations will ensure that the Sheriff's Department can adequately serve the new growth.</p>	LS	None required.	LS

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
Solid Waste			
An annual total of 18,592 tons of waste will require landfill disposal, and a total of 25,241 tons of construction debris will need to be disposed of in the Kiefer Landfill. The Sacramento County Department of Waste Management and Recycling has indicated that landfill capacity is adequate to support the waste disposal needs generated by the Project.	LS	None required.	LS
Schools			
Student enrolment resulting from the Project will be approximately 4,686 total students, with approximately 2,553 of these in grades K – 6 (elementary school), 748 in grades 7 – 8 (middle school), and 1,384 in grades 9 – 12 (high school). The Project will generate the need for three elementary schools but only about 62% of a middle/high school; the land use plan includes these school sites. Elk Grove Unified School District (EGUSD) Facilities and Planning Department staff (K. Williams) has indicated that EGUSD has been working with the Project proponents to be sure that adequate school facilities can be accommodated within the Project area and is satisfied with the proposed development and financing plans for the needed schools.	LS	None required.	LS

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
Parks and Recreation			
<p>The Project area is located within CSA 4b which is staffed by the Sacramento County Regional Parks Department (Parks Department). The Project area will be detached from the CSA 4b, and will be provided park and recreation services under the proposed Cordova Hills <u>LSD</u> CSD; discretionary action by LAFCo is required for the detachment and formation actions. The Project generates a need for approximately 107 acres of parkland, and provides approximately 99 acres of formal parks and 150 acres of informal recreation areas (paseos, trails, etc) which may receive partial credit. The Parks Department has reviewed the plans and deemed them adequate.</p>	LS	None required.	LS
Libraries			
<p>The Cordova Hills SPA indicates that a new full service, 15,000 square foot branch library is planned within the proposed Town Center to serve the Cordova Hills community as well as residents in the surrounding area. According to the Sacramento Public Library Authority Facility Master Plan 2007 – 2025 (Library Master Plan), the proposed library size is adequate to serve the demands generated by the Project at buildout. The Project includes a funding mechanism for a new library that is of sufficient size to accommodate the expected population of the Project, which has been developed in coordination with the Sacramento Public Library System.</p>	LS	None required.	LS

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
PUBLIC UTILITIES			
Construction Impacts			
Water, sewer, and dry utility lines constructed within the Project boundaries would not cause any additional utility-specific construction impacts, as utility construction will occur within areas that will already urbanize as part of the Project. Most of the off-site utility lines are shown within areas already proposed for utility construction as part of service provider master planning documents. There are some improvement areas which have not already been studied or approved, and which are likely to contribute to wetland impacts and impacts to associated species.	S	Measures AQ-1, BR-1, BR-3, BR-4, BR-5, BR-7, BR-8, and CR-1 apply.	SU
Adequacy of Water Supply			
The projected annual water demand for the entire Project is 6,549.9 acre feet per year (AFY), including system losses. The Project will be served by the Sacramento County Water Agency (SCWA) Zone 40, which has total maximum water supply to Zone 40 of 102,151 AFY. There is sufficient capacity to serve the Project.	LS	None required.	LS
Adequacy of Sewage Disposal			
The Project will result in an average dry weather flow of 4.99 million gallons per day (mgd). The peak wet weather flow for Project buildout is 10.41 mgd. The Sacramento Regional Wastewater Treatment Plan has a permitted average dry weather flow (ADWF) design capacity of 181 mgd and wet weather flow (AWWF) of 392 mgd. The plant receives and treats approximately 141 mgd ADWF (Seyfried, 2008). The Project disposal demand can be met by this existing capacity.	LS	None required.	LS

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
Adequacy of Energy Services			
<p>The estimated annual residential and commercial electricity demand for the Project will be 122,903,000 kilowatt hours and that the estimated annual residential and commercial natural gas demand for the Project will be 4,201,494 therms. The California Energy Commission's Energy Consumption Data Management System reports that 10,691.67 million kilowatt hours of energy and 315.57 million therms were consumed within Sacramento County in the year 2010. The estimated energy usage of the Project is substantially less than the annual energy production for either SMUD or PG&E.</p>	LS	None required.	LS
Exceed Sustainable Groundwater Yield			
<p>A long-term average annual yield of 40,900 AFY of groundwater has been identified in both the Water Forum Agreement (WFA) and Water Supply Master Plan for SCWA in the Central Basin. Additionally, as a signatory to the WFA and a member of the Sacramento Central Groundwater Authority (Groundwater Authority), SCWA recognizes the Water Forum-defined long-term sustainable average annual yield of the underlying groundwater basin of 273,000 AFY. The additional groundwater draw caused from implementation of the proposed Project will not result in exceedance of the agreed-upon sustainable yield of 273,000 AFY.</p>	LS	None required.	LS
Groundwater Recharge			
<p>The central intermittent drainage on the site is mapped as an area of high groundwater recharge potential. This area is being retained within open space in the Project, and will not be subject to direct impacts.</p>	LS	None required.	LS

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
TRAFFIC AND CIRCULATION			
Existing Plus Project			
<p>The Project results in significant impacts to six County intersections, ten City of Rancho Cordova intersections, the Zinfandel and US 50 freeway ramp intersection, two County roadway segments, one City of Elk Grove roadway segment, eleven City of Rancho Cordova roadway segments, two US 50 freeway segments, and bicycle and pedestrian facilities. Mitigation is included which will improve operating conditions to acceptable levels for most of these facilities, but there are some impacts for which no feasible mitigation exists. These are: the Zinfandel and US 50 freeway ramp intersection and Sunrise Boulevard from US 50 to White Rock Road. Furthermore, the County does not have land use authority in other jurisdictions, and cannot guarantee that non-County facilities will be constructed.</p>	S	<p>TR-1. The applicant shall construct or fund, as set forth in the phasing and financing plan approved by the Sacramento County Department of Transportation, the below mitigation measures. The phasing and financing plan shall ensure commencement of construction of traffic improvements prior to degradation of LOS below applicable County standards. This mitigation recognizes that should any of the measures below benefit other projects, a reimbursement agreement and/or a fee credit to the applicant may be considered.</p> <p>A. <i>Bradshaw Road and Jackson Road</i> – Provide a second westbound through lane.</p> <p>B. <i>Mather Boulevard and Douglas Road</i> – Construct a new traffic signal. Provide a shared through-right turn lane on the northbound approach; provide a separate left turn lane and a through lane on the southbound approach; and a provide separate left turn lane and a separate right turn lane on the westbound approach.</p> <p>C. <i>Eagles Nest Road and Jackson Road</i> – Construct a new traffic signal. Provide a left turn lane and a through-right turn shared lane on the northbound and southbound approaches.</p> <p>D. <i>Grant Line Road and Sunrise Boulevard</i> – Provide a separate southbound right turn lane so the southbound approach has one left turn lane, one through lane and one right turn lane.</p> <p>E. <i>Grant Line Road and White Rock Road</i> – Construct a new Modify the intersection and traffic signal to provide dual left turn lanes and a separate two through</p>	SU

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
		<p>lanes on the northbound approach; provide a <u>two</u> through lanes and a separate right turn lane on the southbound approach; and provide <u>separate two</u> left turn lanes and a separate right turn lane on the eastbound approach. Also an extra westbound departure lane is needed for the dual northbound left movement. <u>On the western leg of the intersection, two westbound departure lanes are required.</u></p> <p>F. <i>Prairie City Road and White Rock Road</i> – The applicant shall be responsible for a fair share of this measure. Construct a new traffic signal. Provide a separate left turn lane and a separate right turn lane on the southbound approach; provide a separate left turn lane and a through lane on the eastbound approach; and provide a through lane and a separate right turn lane on the westbound approach. The fair share shall be calculated to the satisfaction of Sacramento County Department of Transportation and may be up to 100% of the cost of the improvements.</p> <p>G. <i>School Access and North Loop Road</i> – Provide dual eastbound left turn lanes. The applicant shall be responsible for a focused access study addressing the internal circulation of the Cordova Hills project to finalize the design of intersection geometries and length of left turn pockets. The scope of work for the analysis shall be submitted to the Sacramento County DOT staff. Upon completion, the analysis shall be submitted to the Sacramento County DOT for approval and recommendations.</p> <p>TR-2. The applicant shall construct or fund, as set forth in the phasing and financing plan approved by the Sacramento County Department of Transportation, and in consultation with the City of Rancho Cordova, the below mitigation measures. The phasing and financing plan shall ensure</p>	

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
		<p>commencement of construction of traffic improvements prior to degradation of LOS below the applicable County or City standards. This mitigation recognizes that should any of the measures below benefit other projects, a reimbursement agreement may be considered.</p> <p>A. <i>Zinfandel Drive and White Rock Road</i> – The applicant shall be responsible for a fair share of this measure. Provide separate dual right turns on the westbound approach so the westbound approach has two left turn lanes, two through lanes and two right turn lanes. The fair share shall be calculated to the satisfaction of Sacramento County Department of Transportation and may be up to 100% of the cost of the improvements.</p> <p>B. <i>Sunrise Boulevard and White Rock Road</i> – Provide overlap phasing on the eastbound and westbound approaches.</p> <p>C. <i>Sunrise Boulevard and Douglas Road</i> – Provide overlap phasing on the westbound approach.</p> <p>D. <i>Sunrise Boulevard and Jackson Road</i> – Provide dual through lanes on the eastbound and westbound approaches. <u>Provide an eastbound through lane, and eastbound through-right turn shared lane, and an eastbound left turn lane; a northbound left turn lane and a northbound through-right turn shared lane; two westbound through lanes, a westbound right turn lane, and a westbound left turn lane; a southbound through lane, a southbound left turn lane, and a southbound right turn lane.</u></p> <p>E. <i>Grant Line Road and Jackson Road</i> – The applicant shall be responsible for a fair share of this measure. Provide a left turn lane and a through-right shared lane on the eastbound and westbound approaches.</p>	

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
		<p>Provide a separate left turn lane, a through lane and a separate right turn lane on the northbound and southbound approaches. The fair share shall be calculated to the satisfaction of Sacramento County Department of Transportation and may be up to 100% of the cost of the improvements.</p> <p>F. <i>Grant Line Road and Kiefer Boulevard</i> – Construct a new traffic signal. Provide a left turn lane, a through lane and a through-right turn shared lane on the northbound and southbound approaches; provide a left turn lane and a through-right turn shared lane on the eastbound and westbound approaches.</p> <p>G. <i>Grant Line Road and Douglas Road</i> – Construct a new traffic signal. Provide dual left turn lanes and a separate through lane on the northbound, a through lane and a through-right turn shared lane on the southbound approach, and a separate left turn lane and a free-right turn lane on the eastbound approach. Also an extra southbound departure lane is needed for the eastbound free-right movement. To be consistent with the segment mitigations a second northbound through lane is included.</p> <p>H. <i>Grant Line Road and North Loop Road</i> – Construct a new traffic signal. Provide two through lanes and a separate right turn lane on the northbound approach, dual left turn lanes and one through on the southbound approach, and one left turn lane and one free-right turn lane on the westbound approach. Also an extra northbound departure lane is needed for the westbound free-right movement. To be consistent with the segment mitigations a second southbound through lane is included.</p> <p>I. <i>Grant Line Road and Chrysanthy Boulevard</i> –</p>	

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
		<p>Construct a new traffic signal. Provide a through lane and a separate right turn lane on the northbound approach, dual left turn lanes and a through lane on the southbound approach, and dual left turn lanes and one right turn lane on the westbound approach. To be consistent with the segment mitigations a second northbound and southbound through lane is included. Also provide two westbound through lanes for when Chrysanthy Boulevard is connected through Rancho Cordova.</p> <p>J. <i>Grant Line Road and University Boulevard</i> – Construct a new traffic signal. Provide a through lane and a separate free-right turn lane on the northbound approach, dual left turn lanes and one through lanes on the southbound approach, and dual left turn lanes and a right turn lane on the westbound approach. Also an extra eastbound departure lane is needed for the northbound free-right movement. To be consistent with the segment mitigations a second northbound and southbound through lane is included.</p> <p>TR-3. The applicant shall construct or fund, as set forth in the phasing and financing plan approved by the Sacramento County Department of Transportation, the below mitigation measures. The phasing and financing plan shall ensure commencement of construction of traffic improvements prior to degradation of LOS below applicable County standards. This mitigation recognizes that should any of the measures below benefit other projects, a reimbursement agreement and/or a fee credit to the applicant may be considered.</p> <p>A. <i>Prairie City Road from US 50 to White Rock Road</i> – Increase roadway capacity by upgrading the capacity class for this segment from a rural highway without</p>	

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
		<p>shoulders to a rural highway with shoulders.</p> <p>TR-4. The applicant shall construct or fund, as set forth in the phasing and financing plan approved by the Sacramento County Department of Transportation, and in consultation with the City of Elk Grove, the below mitigation measures. The phasing and financing plan shall ensure commencement of construction of traffic improvements prior to degradation of LOS below the applicable County or City standards. This mitigation recognizes that should any of the measures below benefit other projects, a reimbursement agreement may be considered.</p> <p>A. <i>Grant Line Road from Sheldon Road to Calvine Road</i> – Increase roadway capacity by widening this segment to 4 lanes and upgrading the capacity class to an arterial with moderate access control.</p> <p>TR-5. The applicant shall construct or fund, as set forth in the phasing and financing plan approved by the Sacramento County Department of Transportation, and in consultation with the City of Rancho Cordova, the below mitigation measures. The phasing and financing plan shall ensure commencement of construction of traffic improvements prior to degradation of LOS below the applicable County or City standards. This mitigation recognizes that should any of the measures below benefit other projects, a reimbursement agreement may be considered.</p> <p>A. <i>Grant Line Road from Jackson Road to Kiefer Boulevard</i> – Increase roadway capacity by widening this segment to 4 lanes and upgrading the capacity class to an arterial with moderate access control.</p> <p>B. <i>Grant Line Road from Kiefer Boulevard to University Boulevard</i> – Increase roadway capacity by widening this segment to 4 lanes and upgrading the capacity</p>	

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
		<p>class to an arterial with moderate access control.</p> <p>C. <i>Grant Line Road from University Boulevard to Chrysanthy Boulevard</i> – Increase roadway capacity by widening this segment to 4 lanes and upgrading the capacity class to an arterial with moderate access control.</p> <p>D. <i>Grant Line Road from Chrysanthy Boulevard to North Loop</i> – Increase roadway capacity by widening this segment to 4 lanes and upgrading the capacity class to an arterial with moderate access control.</p> <p>E. <i>Grant Line Road from North Loop to Douglas Road</i> – Increase roadway capacity by widening this segment to 6 lanes and upgrading the capacity class to an arterial with moderate access control.</p> <p>F. <i>Grant Line Road from Douglas Road to White Rock Road</i> – Increase roadway capacity by widening this segment to 4 lanes and upgrading the capacity class to an arterial with moderate access control.</p> <p>G. <i>Jackson Road from Sunrise Boulevard to Grant Line Road</i> – Increase roadway capacity by widening this segment to 4 lanes and upgrading the capacity class to an arterial with moderate access control.</p> <p>H. <i>Douglas Road from Sunrise Boulevard to Rancho Cordova Parkway</i> – Increase roadway capacity by widening this segment to 4 lanes and upgrading the capacity class to an arterial with moderate access control.</p> <p>I. <i>Douglas Road from Rancho Cordova Parkway to Grant Line Road</i> – Increase roadway capacity by widening this segment to 4 lanes and upgrading the capacity</p>	

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
		<p>class to an arterial with moderate access control <u>between Americanos Boulevard and Grant Line Road, and by adding two westbound travel lanes to Douglas between Rancho Cordova Parkway to Americanos Boulevard. Construct interim sidewalk improvements (typically a detached asphaltic concrete path) and bicycle lanes.</u></p> <p>TR-6. The applicant shall be responsible for funding a fair share of the construction costs of the below mitigation measures. The fair share shall be calculated to the satisfaction of Sacramento County Department of Transportation, in consultation with Caltrans.</p> <p>A. <i>Westbound US 50 from Hazel Avenue to Sunrise Boulevard</i> – Add an auxiliary lane.</p> <p>B. <i>Eastbound US 50 from Sunrise Boulevard to Hazel Avenue</i> – Add an auxiliary lane.</p> <p>TR-7. The applicant shall be responsible for a fair share of the below mitigation measures. The fair share shall be calculated to the satisfaction of Sacramento County Department of Transportation and may be up to 100% of the cost of the improvements.</p> <p>A. Construct <u>interim sidewalk improvements (typically a detached asphaltic concrete path)</u> and bicycle lanes along Grant Line Road from Douglas Road to White Rock Road and on Douglas Road from Rancho Cordova Parkway to Grant Line Road, <u>to the satisfaction of the Sacramento County Department of Transportation.</u></p>	
Cumulative Plus Project			
The Project results in significant impacts to five City of	S	TR-8. The applicant shall be responsible for a fair share of the	SU

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
<p>Rancho Cordova intersections, the Zinfandel and US 50 freeway ramp intersection, one new Project roadway segment, four City of Rancho Cordova roadway segments, six Caltrans freeway segments, and four Caltrans freeway ramps. Mitigation is included which will improve operating conditions to acceptable levels for most of these facilities, but there are some impacts for which no feasible mitigation exists. These are: the Zinfandel and US 50 freeway ramp intersection, the intersection of Sunrise Boulevard and International Drive, Grant Line Road from North Loop Road to Douglas Road, eastbound US 50 from Watt Avenue to Bradshaw Road, eastbound US 50 from Rancho Cordova Parkway to Hazel Avenue, westbound US 50 from Hazel Avenue to Rancho Cordova Parkway, westbound US 50 from Mather Field Road to Power Inn/Howe Avenue, eastbound US 50 Exit Ramp to Watt Avenue, eastbound US 50 Slip Ramp Entrance from Watt Avenue, westbound US 50 Exit Ramp to Watt Avenue, and westbound US 50 Slip Ramp Entrance from Watt Avenue.</p>		<p>below mitigation measures. The fair share shall be calculated to the satisfaction of Sacramento County Department of Transportation and may be up to 100% of the cost of the improvements.</p> <p>A. <i>School Access and North Loop Road</i> – Provide dual eastbound left turn lanes.</p> <p>TR-9. The applicant shall be responsible for a fair share of the below mitigation measures. The fair share shall be calculated to the satisfaction of Sacramento County Department of Transportation, in consultation with the City of Rancho Cordova, and may be up to 100% of the cost of the improvements.</p> <p>A. <i>Sunrise Boulevard and Douglas Road</i> – Provide overlap phasing on the eastbound and westbound right turns.</p> <p>B. <i>Grant Line Road and Douglas Road</i> – Provide a third southbound through lane and overlap phasing on the eastbound right turn lane. To be consistent with the segment mitigations a third northbound through lane is included.</p> <p>C. <i>Grant Line Road and North Loop Road</i> – Provide a westbound free-right turn lane. Also an extra northbound departure lane is needed for the westbound free-right movement.</p> <p>D. <i>Grant Line Road and University Boulevard</i> – Provide a northbound free-right turn lane. Also an extra eastbound departure lane is needed for the northbound free-right movement.</p> <p>TR-10. The applicant shall be responsible for a fair share of the below mitigation measures. The fair share shall be</p>	

Impacts	Level of Significance Before Mitigation ¹	Mitigation Measure	Level of Significance After Mitigation
		<p>calculated to the satisfaction of Sacramento County Department of Transportation and may be up to 100% of the cost of the improvements.</p> <p>A. <i>North Loop Road from Street D to Street F</i> – Increase roadway capacity by widening this segment to 4 lanes and upgrading the capacity class to an arterial with low access control.</p> <p>TR-11. The applicant shall be responsible for a fair share of the below mitigation measures. The fair share shall be calculated to the satisfaction of Sacramento County Department of Transportation, in consultation with the City of Rancho Cordova, and may be up to 100% of the cost of the improvements.</p> <p>A. <i>Grant Line Road from Rancho Cordova Parkway to Kiefer Boulevard</i> – Increase roadway capacity by widening this segment to a 6 lane arterial with moderate access control.</p> <p>B. <i>Grant Line Road from Kiefer Boulevard to University Boulevard</i> – Increase roadway capacity by widening this segment to a 6 lane arterial with moderate access control.</p> <p>C. <i>Grant Line Road from North Loop to Douglas Road</i> – Increase roadway capacity by widening this segment to a 6 lane arterial with moderate access control.</p> <p>D. <i>Grant Line Road from Douglas Road to White Rock Road</i> – Increase roadway capacity by widening this segment to a 6 lane arterial with moderate access control.</p>	

TERMINOLOGY USED IN THIS EIR

This Draft EIR uses the following terminology to describe environmental effects of the project.

- **Significance Criteria.** A set of criteria used by the lead agency to determine at what level, or “threshold,” an impact would be considered significant. Significance criteria used in this EIR include those that are set forth in the CEQA Guidelines, or can be discerned from the CEQA Guidelines; criteria based on factual or scientific information; criteria based on regulatory standards of local, state, and federal agencies; and criteria based on goals and policies identified in the Sacramento County General Plan.
- **Less-than-Significant Impact.** A project impact is considered less than significant when it does not reach the standard of significance and would therefore cause no substantial change in the environment. No mitigation is required for less-than-significant impacts.
- **Potentially Significant Impact.** A potentially significant impact is a substantial, or potentially substantial, adverse change in the environment. Physical conditions which exist within the area will be directly or indirectly affected by the proposed project. Impacts may also be short-term or long-term. A project impact is considered significant if it reaches the threshold of significance identified in the EIR. Mitigation measures may reduce a potentially significant impact to less than significant.
- **Significant Unavoidable Impact.** A project impact is considered significant and unavoidable if it is significant and cannot be avoided or mitigated to a less-than-significant level once the project is implemented.
- **Cumulative Significant Impact.** A cumulative impact can result when a change in the environment results from the incremental impact of a project when added to other related past, present or reasonably foreseeable future projects. Significant cumulative impacts may result from individually minor but collectively significant projects.
- **Mitigation.** Mitigation measures are revisions to the project that would minimize, avoid, or reduce a significant effect on the environment. CEQA Guidelines §15370 identifies 5 types of mitigation:
 - a) Avoiding the impact altogether by not taking a certain action or parts of an action.
 - b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
 - c) Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment.
 - d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
 - e) Compensating for the impact by replacing or providing substitute resources or environments.

MITIGATION MONITORING AND REPORTING PROGRAM

Comply with the Mitigation Monitoring and Reporting Program (MMRP) for this project as follows:

1. It shall be the responsibility of the project applicant to reimburse the County for all expenses incurred in the implementation of the Mitigation Monitoring and Reporting Program (MMRP), including any necessary enforcement actions. The applicant shall pay an initial deposit of **\$15,000.00**, which includes administrative costs of **\$800.00**. Over the course of the project, the Environmental Coordinator will regularly conduct cost accountings and submit invoices to the applicant when the County monitoring costs exceed the initial deposit.
2. Until the MMRP has been recorded and the estimated MMRP fee has been paid, no final parcel map or final subdivision map for the subject property shall be approved; and no encroachment, grading, building, sewer connection, water connection or occupancy permit from Sacramento County shall be approved.

PREFACE

The Notice of Preparation (NOP) for the Project was published on June 22, 2010. An agency scoping meeting was held on July 19, 2010 at the Governor's Office of Planning and Research and a public scoping meeting was held on August 3, 2010 at the Sacramento County Department of Transportation Traffic Operations Center. At the time of NOP publication, the 2030 General Plan had not been approved, and it was unclear when the hearing process would be completed. The 2030 General Plan was adopted on November 9, 2011, and as a consequence this EIR includes the current adopted General Plan policies, not the policies of the 1993 General Plan which were in effect when the NOP was released.

Along with a Notice of Completion (NOC), the Draft EIR was released to the Governor's Office of Planning and Research to begin the public review period (Public Resources Code, Section 21161) on January 9, 2012. Concurrent with the NOC, the County also provided public notice of the availability of the Draft EIR for public review through publication in a local newspaper and with notices which were sent to individuals who had requested such notification. The written comment period began on January 9, 2012 was set to close on February 22, 2012 at 5 p.m, but was extended to March 5, 2012 at the request of the California Department of Transportation (Caltrans). Opportunity for oral comment on the DEIR was offered at the Sacramento County Planning Commission on September 24, 2012, at which time the comment period was closed and staff was directed to prepare this Final EIR.

Changes to text within the EIR follow two conventions to highlight them for the reader: text which is **bold and underlined** is new, and text which is shown in ~~striketrough~~ is deleted. There are also two chapters, the Project Description and the Traffic and Circulation chapters, which contain new text at the very outset of the chapter which provides some explanation of changes which are to be found in the chapter. Corrections to errors in pagination or format, spelling corrections, grammatical corrections, and other such editorial changes that are unrelated to the substantive content of the EIR are not highlighted. Also note that Sacramento County has undergone some internal organizational changes, and that Departmental and other name changes are reflected in the EIR but are not highlighted in the text.

The EIR and all appended materials are available electronically at www.dera.saccounty.net; under the "Major Projects" heading on the right-hand side of the page where reviewers will find a link titled "Cordova Hills". The direct link is: <http://www.dera.saccounty.net/PublicNotices/SQLView/ProjectDetails/tabid/71/Default.aspx?ProjectID=35697>.

The Board of Supervisors will use the Final EIR as one of the informational sources used to determine whether to approve or deny the Project.

1 PROJECT DESCRIPTION

Throughout the entire EIR, all references to the Cordova Hills Community Services District have been changed to Cordova Hills Local Services District. This latter term is more generic, and the change was made to reflect the fact that the government structure which ultimately provides services pursuant to the Urban Services Plan could be formed in a number of ways: by the creation of a Community Services District, creation of a new County services area, or a combination of the two. The proposed General Plan Transportation Plan Amendment exhibit and the proposed Large Lot Tentative Subdivision Map have also been updated; the DEIR version is shown with an “X” overlaid and the updated version follows immediately after. These two exhibits were changed to reflect conversion of the northern portion of Town Center Boulevard (north of North Loop) to the Chrysanthy arterial street section, at the request of the Sacramento County Department of Transportation. The Transportation Plan was also amended to show a wildlife grade separation.

PROJECT LOCATION

The proposed Project is located in the southeastern portion of Sacramento County on approximately 2,669 acres (Plate PD-1, Regional Location), adjacent to the City of Rancho Cordova (Plate PD-2, East County Location Map). The area is designated by the Sacramento County General Plan as General Agriculture (80 acres) and is currently zoned for AG-80 agricultural uses (Plate PD-3, Existing Zoning). Most of the Project is within the Urban Services Boundary (USB), but outside the Urban Policy Area (UPA). Grant Line Road, a two-lane thoroughfare, extends along the western Project boundary. The eastern side of the Project abuts Carson Creek and the northern boundary line of the property is Glory Lane, which is a two-lane gravel road that intersects Grant Line Road just south of Douglas Road. The Kiefer Landfill and the 2,000-foot buffer zone protecting the landfill from urban encroachment are southwest of the Project. Plate PD-4 is an aerial photograph of the Project area, taken in the year 2009.

ASSESSOR’S PARCEL NUMBERS

073-0040-020 through -026, 073-0040-029, 073-0050-023, and 073-0050-052

PROJECT PROPONENTS

Applicant:

Cordova Hills Ownership Group
Attn: Ron Alvarado

Owner:

Conwy, LLC; Cielo LLC; and Grantline LLC
Attn: Ron Alvarado

Plate PD-1: Regional Location

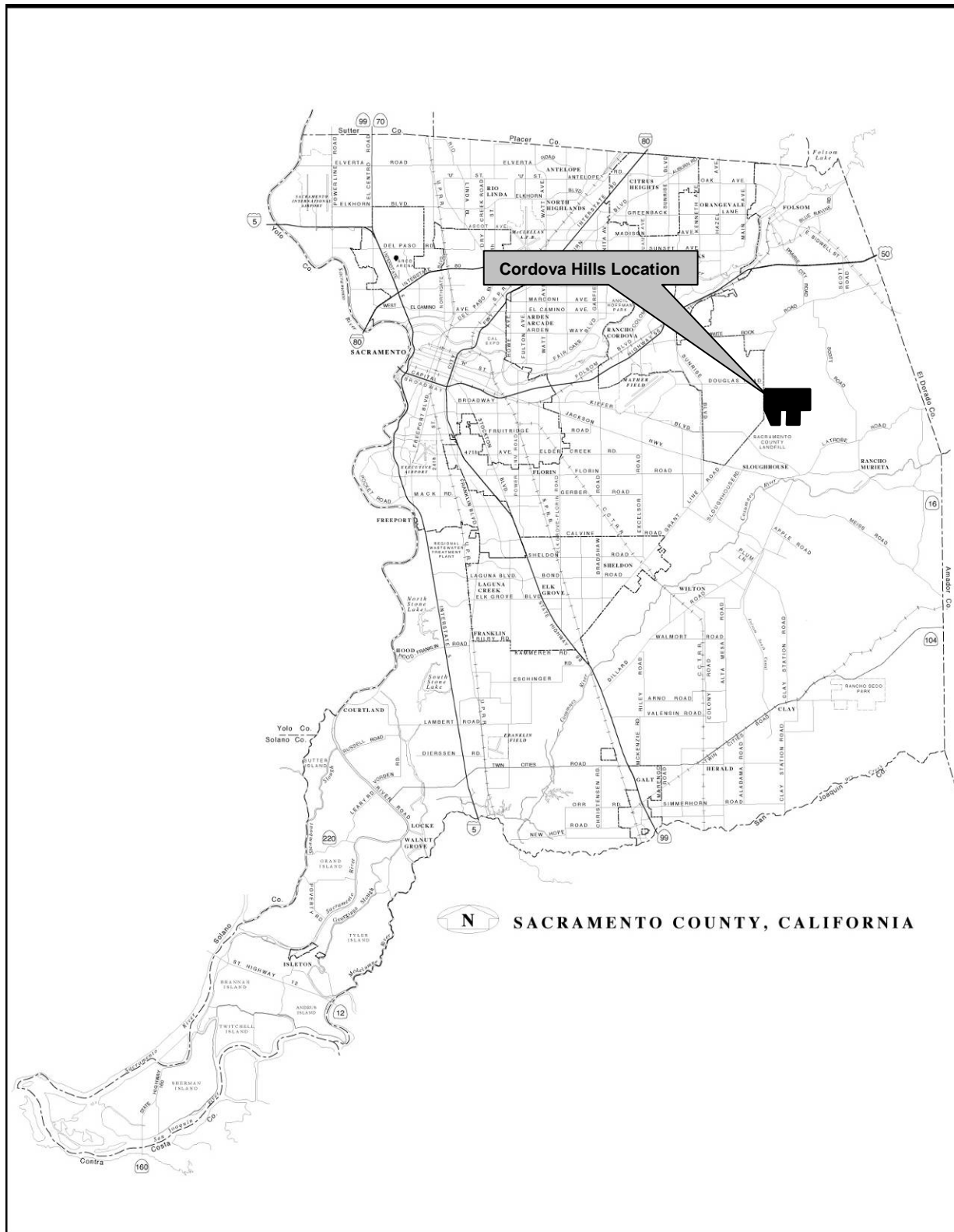


Plate PD-2: East County Location Map

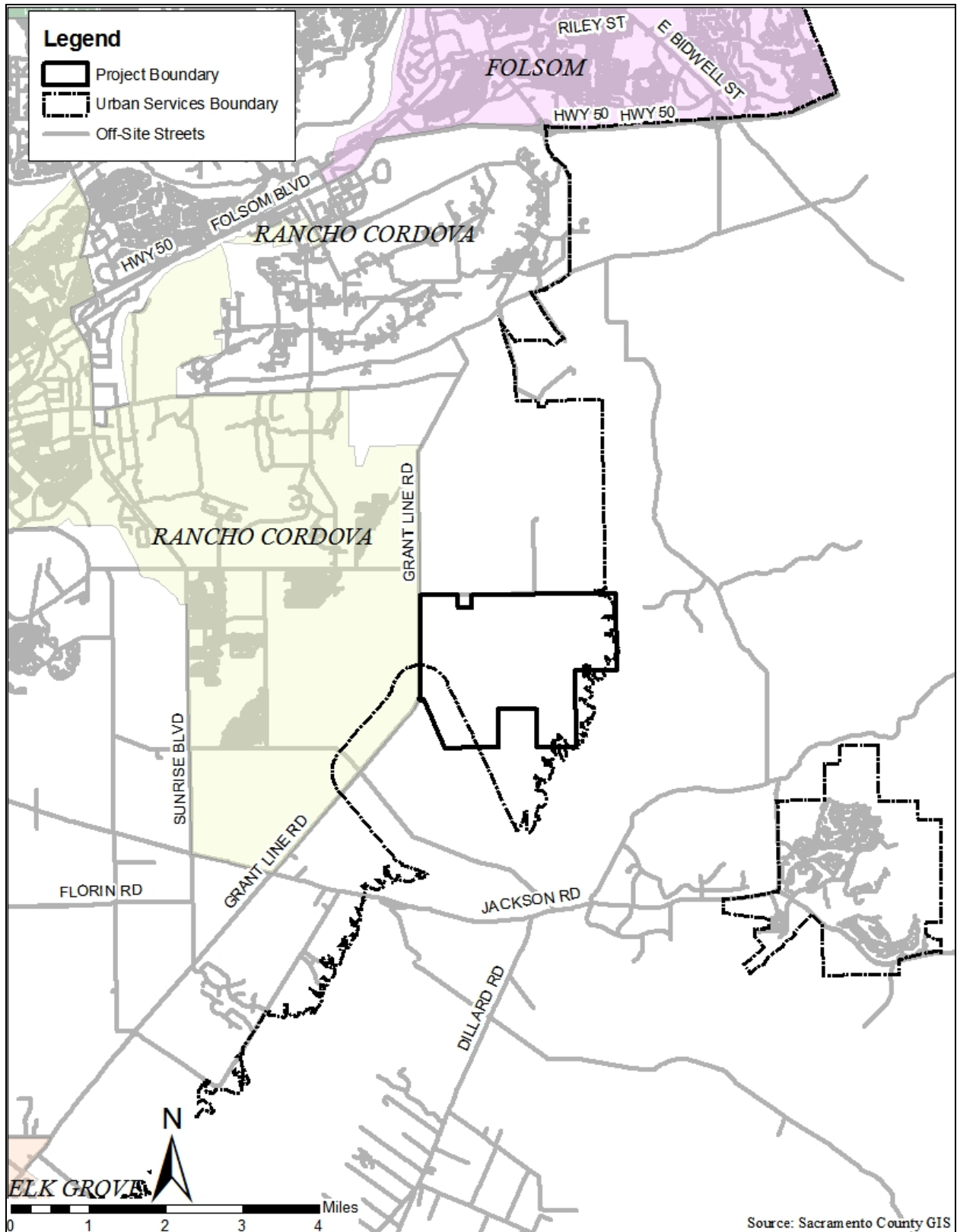


Plate PD-3: Existing Zoning

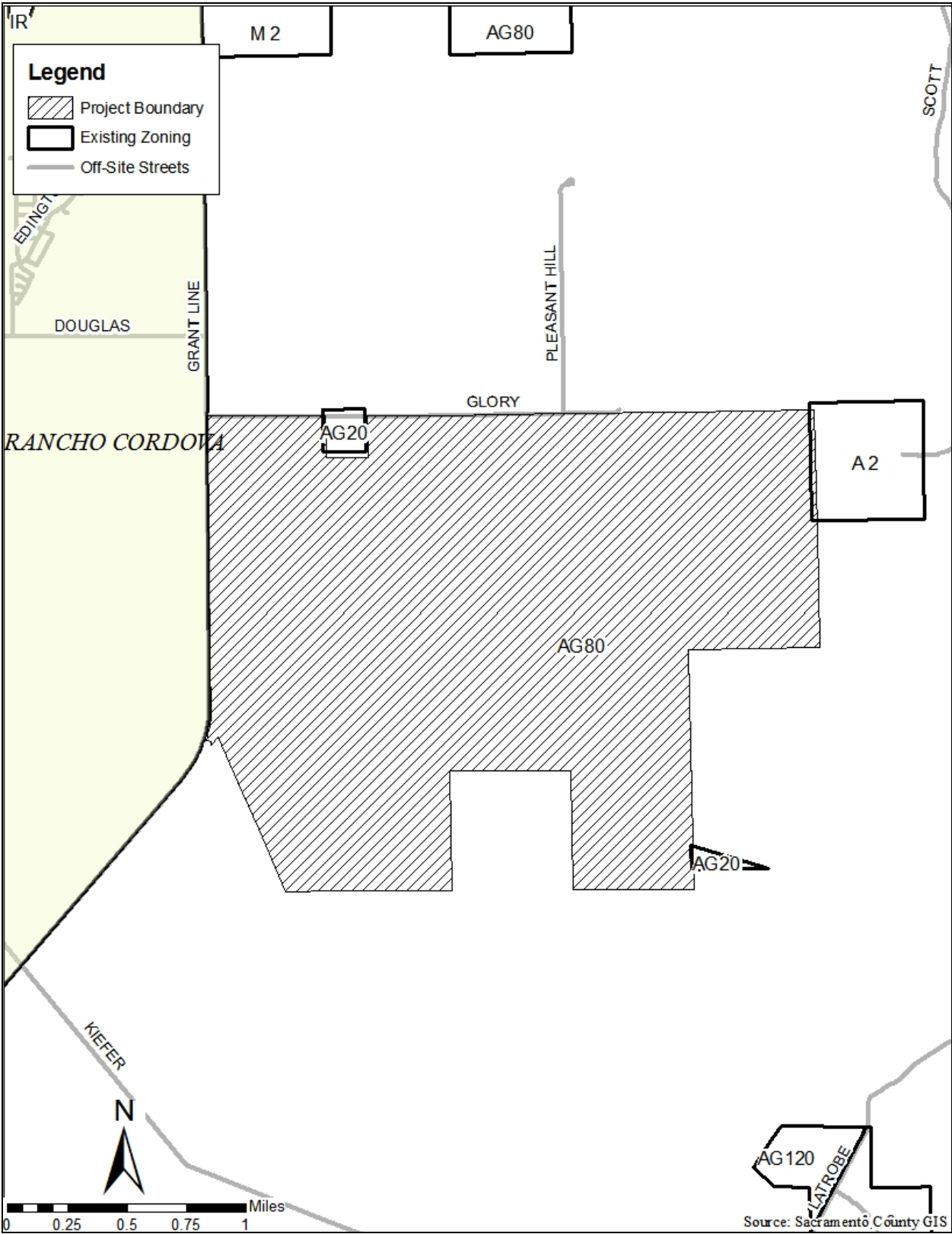
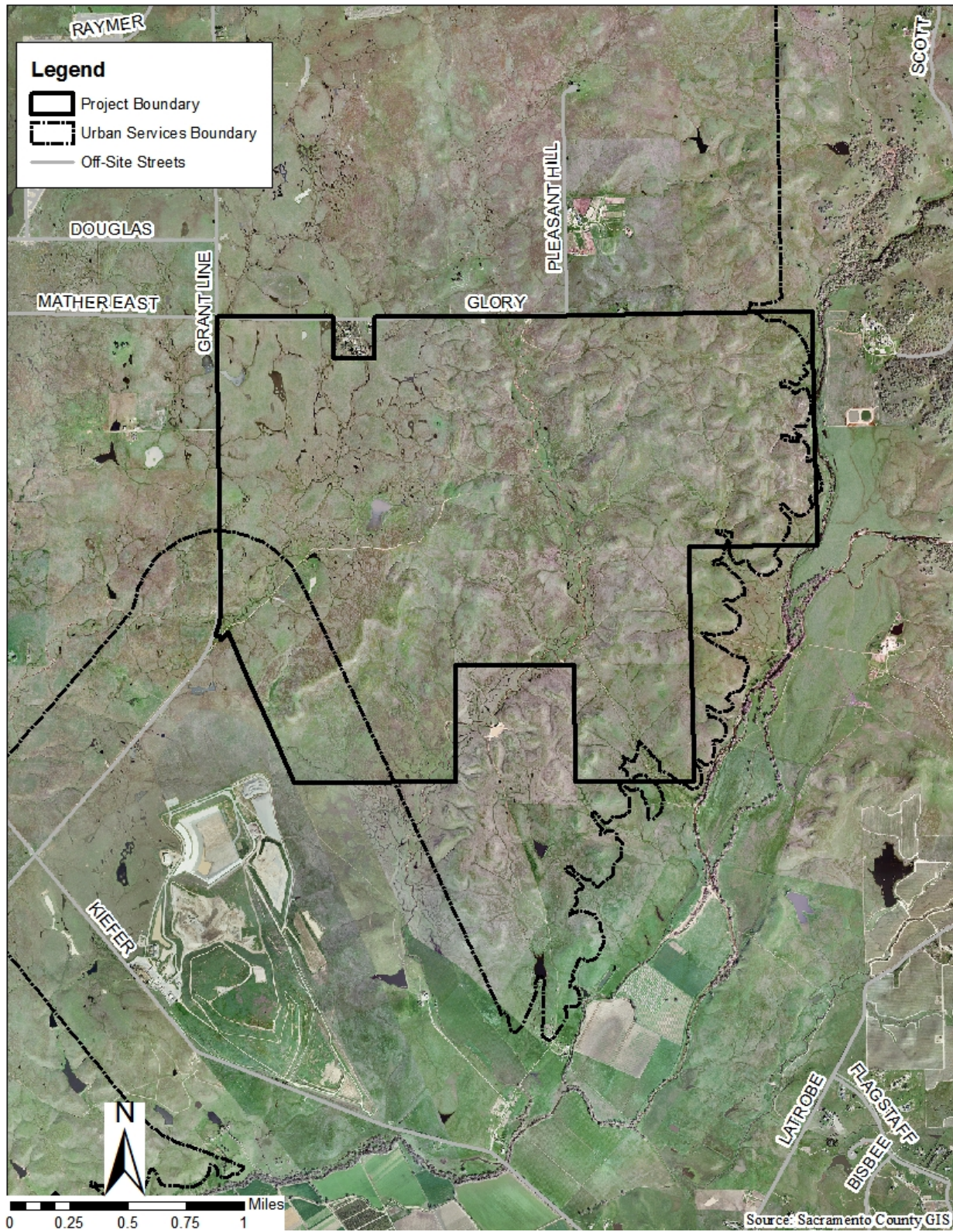


Plate PD-4: Aerial Photo of Project Site and Vicinity (Year 2009)



ENVIRONMENTAL SETTING

The Project site is in the Cosumnes Community within Sacramento County, just east of the City of Rancho Cordova boundary. The Cordova Hills site is currently used for cattle grazing, and does not contain any structures or other developments. The elevation of the site ranges from approximately 130 feet to 280 feet with the greatest elevation occurring at the proposed university/college campus center site bluff in the southeastern portion of the site, and the lowest elevation occurring at the foot of a bluff area in the southeastern corner of the site. The topography on the western third of the Project is relatively flat, consisting of a plateau next to Grant Line Road. The eastern edge of the plateau slopes down easterly into a north-south intermittent drainage that is located in the center of the Project site. The topography climbs back upward in elevation east of the drainage, at which point the site begins to undulate into gently rolling hills.

Habitats present on the site include grassland, wetland and vernal pool areas, and intermittent drainages and swales. The wetland delineation for the Project catalogues a total of 89 acres of surface waters. There are no trees on the site. Much of the wetland habitat is concentrated on the western side of the Project, within a large plateau area that is relatively flat. The swales and intermittent drainages are found throughout the Project area, but there is a main intermittent drainage running north-south which nearly bisects the site. Many of the swales and other drainages flow into this central waterway; this central waterway ultimately connects to Deer Creek. Carson Creek runs past the eastern site boundary, and the floodplain from the creek extends onto the Project site. Carson Creek eventually connects to Deer Creek, south of the Project site; Deer Creek is a tributary to the Cosumnes River. Other than the small area encumbered by the Carson Creek floodplain there are no federal 100-year floodplains identified within the Project area because federal floodplain mapping of the area has not been conducted at this time.

Grant Line Road is a two-lane thoroughfare that lies along the western Project boundary, and Glory Lane is a two-lane gravel road that lies along the northern boundary; there are no public roadways within the Project area. The surrounding lands are essentially undeveloped, but the land along the western property boundary is within the City of Rancho Cordova and has one approved and one proposed Specific Plan – the Sunridge Specific Plan and the proposed Suncreek Specific Plan. A 120-kilovolt Pacific Gas & Electric tower line traverses the eastern edge of the Project in a north-south direction adjacent and parallel to Carson Creek. The nearest public water and sewer lines are within Douglas Road, approximately ¾-mile to the northwest.

The Kiefer Landfill is located approximately 5,000 feet from the most southwesterly portion of the Project. The portion of the site which lies outside of the Urban Services Boundary lies partially within the 2,000-foot buffer surrounding Kiefer Landfill. This buffer was designated to protect the landfill from urban encroachment.

PROJECT PROPOSAL

The Cordova Hills Project is located on approximately 2,669 acres in southeastern Sacramento County, adjacent to the eastern city limits of Rancho Cordova. Most of the Project is within the Urban Services Boundary (USB). The portions outside of the USB will be preserved as open space or developed with uses compatible with agriculture. The Project includes a mix of residential uses from high density residential along the western edge of the Project to low density residential along the eastern boundary approaching the USB. The Project includes a Town Center commercial area adjacent to Grant Line Road. Just southeast of the Town Center is the proposed location of the university/college campus center. The Project includes mixed uses consisting of residential, office, retail, a university/college campus center, schools, parks, and a trail network (Plate PD-5, Cordova Hills Land Use Plan). Cordova Hills is organized into six distinct districts/villages (Town Center, University Village, Ridgeline, East Valley, Creekside, and Estates, Plate PD-6).

The Project will require amendments to the General Plan in order to include the site within the Urban Policy Area and recognize the proposed land uses, streets, and bikeways on the Land Use Diagram, Transportation Plan, and Bikeway Master Plan. The entire site will be rezoned from Agriculture (AG-80) to Special Planning Area (SPA). The adopted SPA will then become the primary land use document which stipulates uses and designs that are allowable within the Project area. There are 485 acres in the southeastern portion of the site that are under Williamson Act contract (Plate PD-15). The contract is in non-renewal and is expected to expire in 2016. The Project will also require an amendment of the Zone 40 Water Supply Master Plan, as the Project area is not included in the existing planning document, and includes a General Plan Amendment to allow limited water service outside of the Urban Services Boundary.

Project features are detailed after the exhibits and entitlement requests below:

1. A **General Plan Amendment** to move the Urban Policy Area (UPA) boundary east to include approximately 2,366.3 acres of the Cordova Hills site (Plate PD-7; **UPA would be moved from location at Grant Line Road to encompass all portions of the Project site within the USB**).
2. A **General Plan Amendment** to amend the Land Use Diagram from General Agriculture to Low Density Residential, Medium Density Residential, Commercial and Office, Recreation, Natural Preserve, and Public/Quasi Public for approximately 2,366.3 acres (Plate PD-7).
3. A **General Plan Amendment** to include a new policy in the Land Use Element to address the provision of limited public water service to serve uses potentially allowed by the Cordova Hills Special Planning Area for 251 acres located in proximity to the Kiefer Landfill, and an Amendment to LU-1 to reference this exception.
4. **Amend the General Plan Transportation Plan** to show new thoroughfares, arterials and collectors as shown in the Transportation General Plan Amendment Diagram dated October 17, 2011 (Plate PD-8).

5. **Amend the Bikeway Master Plan to add on- and off-street bikeways** as shown in the Bikeways Master Plan Amendment Diagram dated October 17, 2011 (Plate PD-9).
6. **A Zoning Ordinance Amendment** to adopt the Cordova Hills Special Planning Area (SPA) to incorporate a Master Plan including Design Guidelines and Development Standards. The SPA consists of a total of 2,668.7 acres in three distinct areas (Plate PD-5):
 - a. Cordova Hills urban areas – 2,119.7 acres
 - b. University/College Campus Center – 246.6 acres (Plate PD-11)
 - c. Buffer lands and floodplain outside the Urban Policy Area – 302.4 acres. The areas will be designated Agriculture, Recreation (sports park), and Avoidance in the SPA.
7. **A Large Lot Tentative Subdivision Map** to create 155 large parcels for the purpose of creating legal parcels corresponding to villages within Cordova Hills SPA and within the approximately 2,668.7-acre SPA (Plate PD-10).
8. **An Affordable Housing Plan** consisting of on-site construction of affordable units and/or land dedication (Plate PD-12).
9. **A Development Agreement** by and between the County of Sacramento and the landowners.
10. **Adoption of a Public Facilities Financing Plan** for Cordova Hills that includes a Capital Improvement Program and Financing Plan.
11. **A Street Resolution** to allow certain County streets within the Cordova Hills Land Use Master Plan to be based on less than a 40-foot right-of-way, pursuant to the State Streets and Highways Code Section 906.
12. **Zone 40 Boundary:** Amend Zone 40 boundary to include the 251 +/- acres of the Cordova Hills project which lies outside of the Urban Services Boundary (Plate PD-13).
13. **Zone 41 Boundary:** Amend Zone 41 boundary to include 251 +/- acres of the Cordova Hills project which lies outside of the Urban Services Boundary (Plate PD-14).
14. **Adoption of the Cordova Hills Water Supply Master Plan Amendment:** Amends the existing Zone 40 Water Supply Master Plan to include provision of water service to Cordova Hills.

In addition to the above entitlements, the Project will require the following discretionary actions which would take place subsequent to County Board of Supervisors' Project approval and that would require Local Agency Formation Commission (LAFCo) review, proceedings, and action:

1. Cordova Hills ~~Community~~ **Local** Services District (**CHLSD**): The Project includes the formation of a ~~Community~~ **Local** Services District that will provide parks and recreation services; administration and communication services (including community intranet); transportation management services; and operation and maintenance of Project parks, open space, trails, landscape corridors, transit,

and supplemental road maintenance. **The CHLSD will be either a community services district formed pursuant to Government Code Sections 61000, et. seq., or a new county service area formed under Government Code Sections 25210, et. seq., or a combination of both.**

2. Sacramento Regional County Sanitation District and Sacramento Area Sewer District: the Project is within the Sphere of Influence for both Districts but would need to be annexed.
3. County Service Area #4B (Parks): All parks within the Project will be owned and maintained by the Cordova Hills ~~Community~~ **Local** Services District, and so detachment from the County service area will be needed.
4. County Service Area #10: Transit services and administration of other trip-reducing services will be administered by the Cordova Hills ~~Community~~ **Local** Services District, and so detachment from the County service area will be needed.

With regard to the Cordova Hills ~~Community~~ **Local** Services District, several steps within the Local Agency Formation Commission (LAFCo) process would be required, including a Municipal Services Review (MSR) and application to LAFCo for creation of the ~~any Community Services District~~ and related Sphere of Influence (SOI) determination, prior to or concurrently with the other LAFCo actions requested. MSR reviews capture and analyze information about the governance structures, fiscal feasibility, and efficiencies of current and proposed service providers and identify opportunities for greater coordination and cooperation between providers. The MSR is a prerequisite to proposed reorganization and a Sphere of Influence determination, and is not subject to CEQA.

Concurrent with or subsequent to the MSR process, a Sphere of Influence application to LAFCo must be submitted. This process would include definition of the ultimate geographical boundaries of the Cordova Hills ~~Community~~ **Local** Services District, disclose the present and planned land uses in the area, describe the present and probable need of public services and facilities in the area, describe the present capacity of those services and facilities, disclose the presence of any relevant social or economic communities of interest in the area, and include MSR completion. The ~~CSD~~ **CHLSD** formation would also require the preparation of a Plan for Services (which is the Cordova Hills Urban Services Plan) **if a community services district is formed**, which would identify the timing, capacity, and means of financing for the proposed ~~CSD~~ **CHLSD** services. The formation of the ~~Cordova Hills a Community Services District~~ and the Sphere of Influence process is subject to CEQA; LAFCo has the sole authority and discretion to act on the formation of the ~~a Community Services District~~ and establishment of the SOI, and as lead agency will contribute to and rely on this EIR.

The proposed Project will be developed in three main phases, with the earliest phase encompassing the area closest to Grant Line Road, and the last phase farthest to the east. Refer to Plate PD-16, Phasing Diagram.

Plate PD-5: Proposed Cordova Hills Land Use Plan

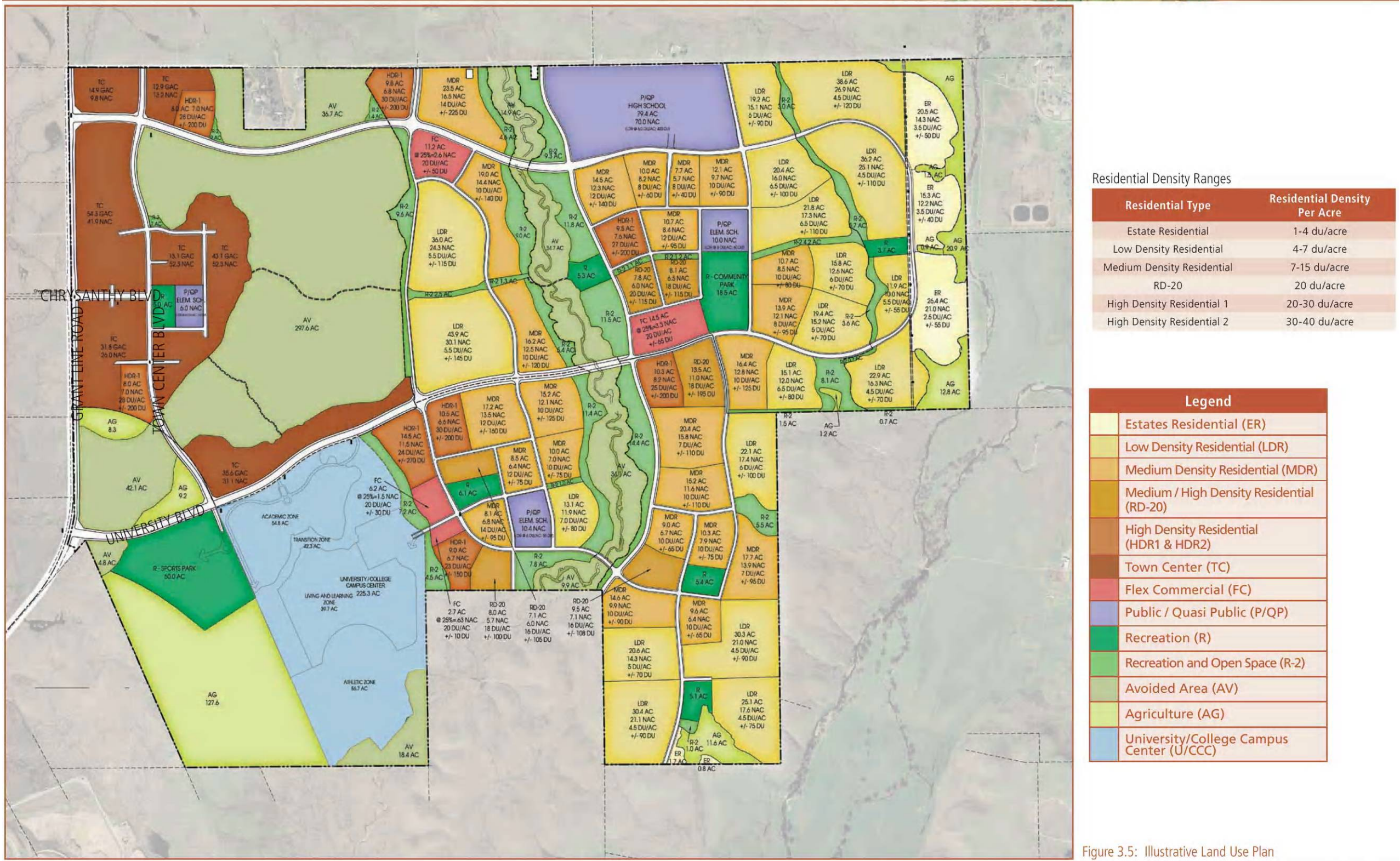


Figure 3.5: Illustrative Land Use Plan

Plate PD-6: Cordova Hills Villages

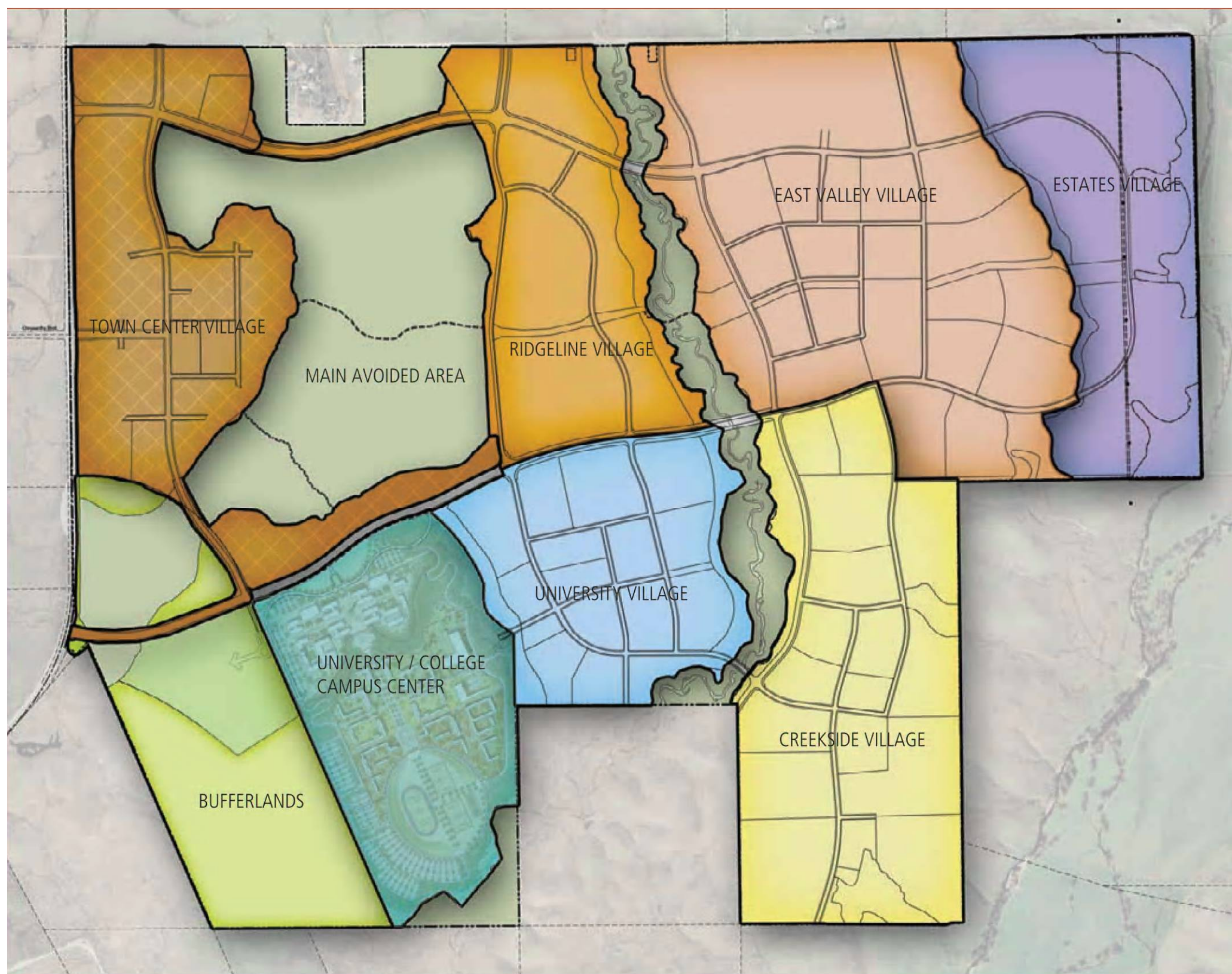
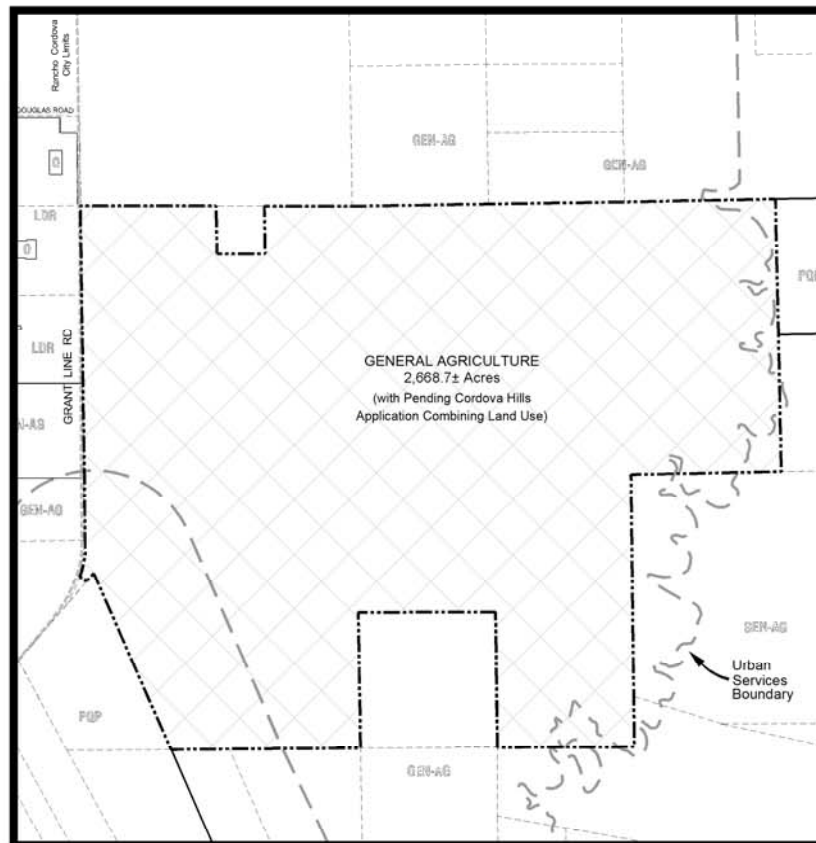
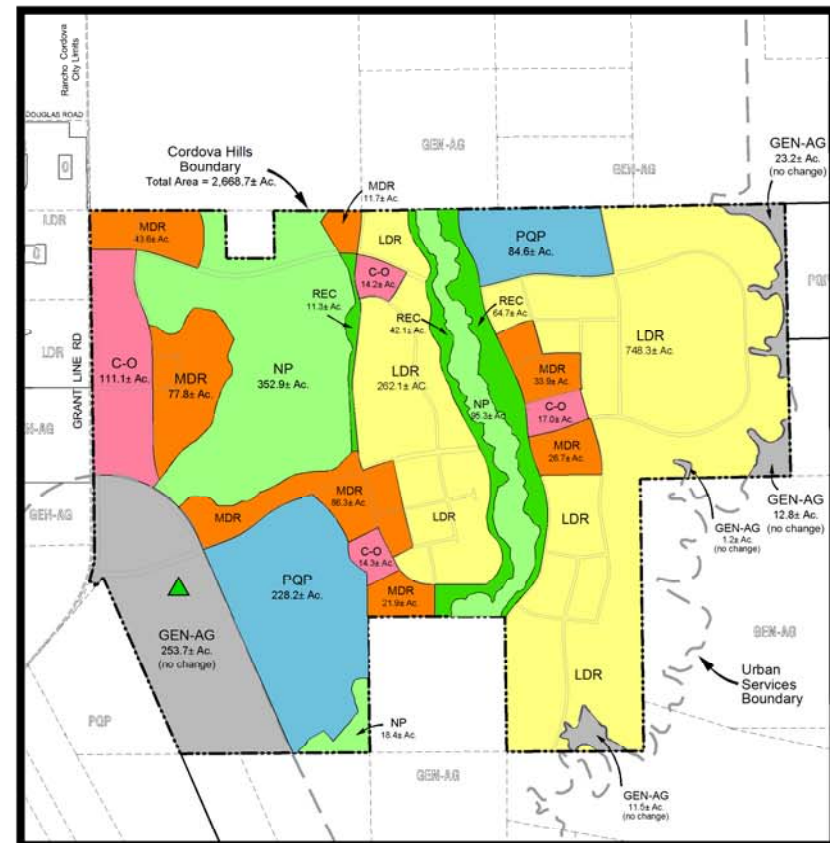


Plate PD-7: Proposed General Plan Amendment



Legend

LDR	Low Density Residential (1-12 du/ac.)
MDR	Medium Density Residential (13-30 du/ac.)
C-O	Commercial & Offices
NP	Natural Preserve
REC	Recreation
GEN-AG	General Agriculture (80 Ac.)
PQP	Cemetery, Public & Quasi-Public
	Cordova Hills Boundary
	Rancho Cordova City Limit
	Urban Service Boundary
	Parks



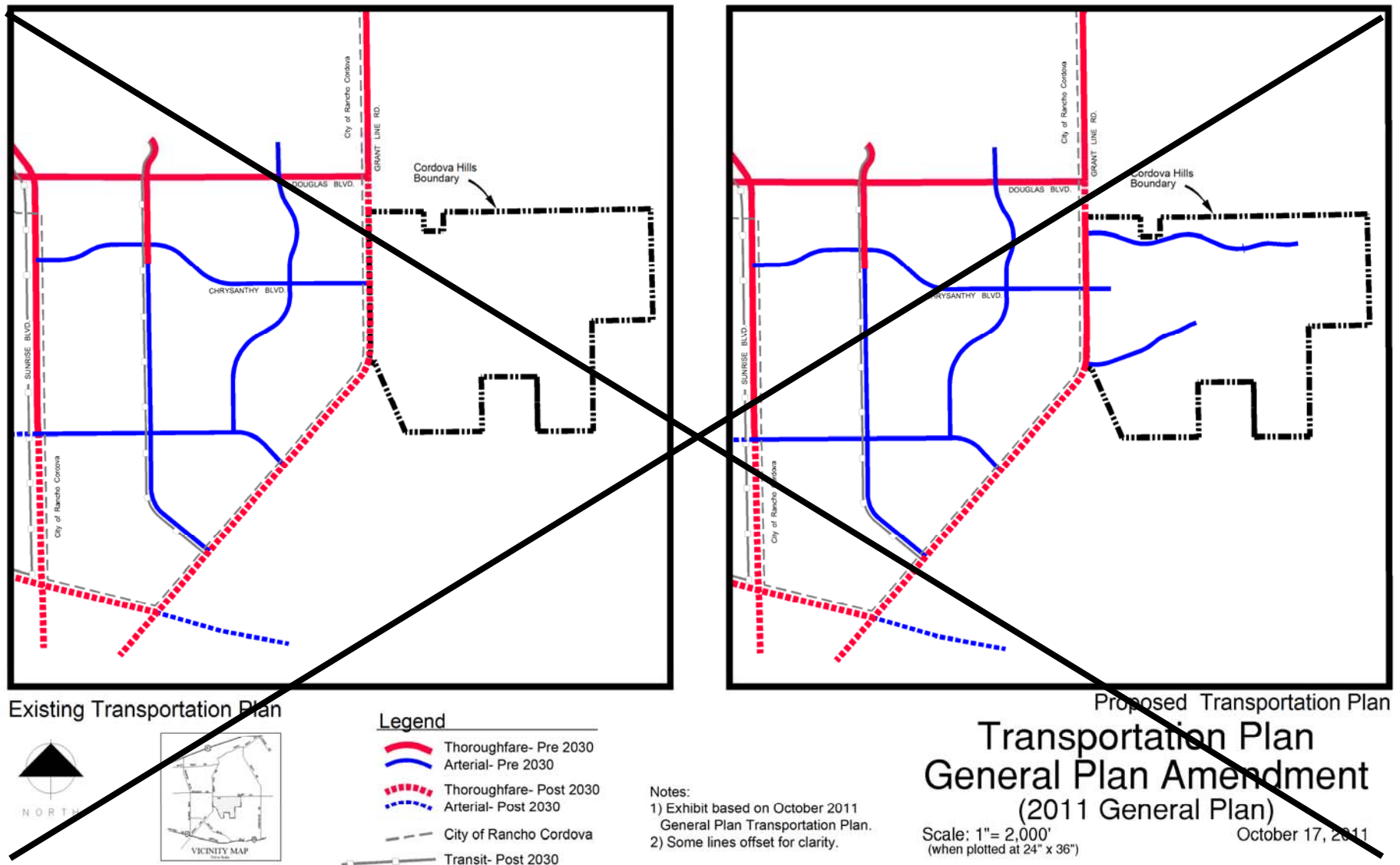
Land Use General Plan Amendment (2011 General Plan)

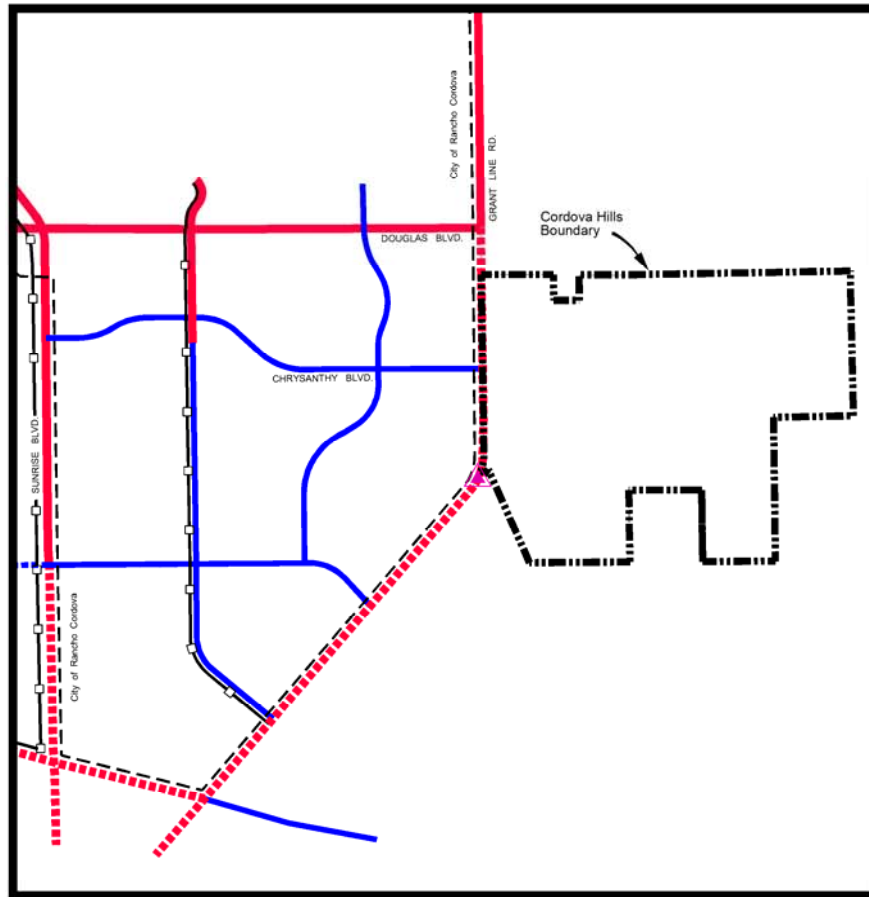
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July 1, 2008

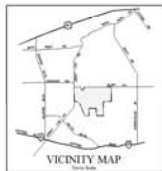
Revised: December 18, 2009
October 17, 2011

Plate PD-8: Proposed General Plan Transportation Diagram Amendment



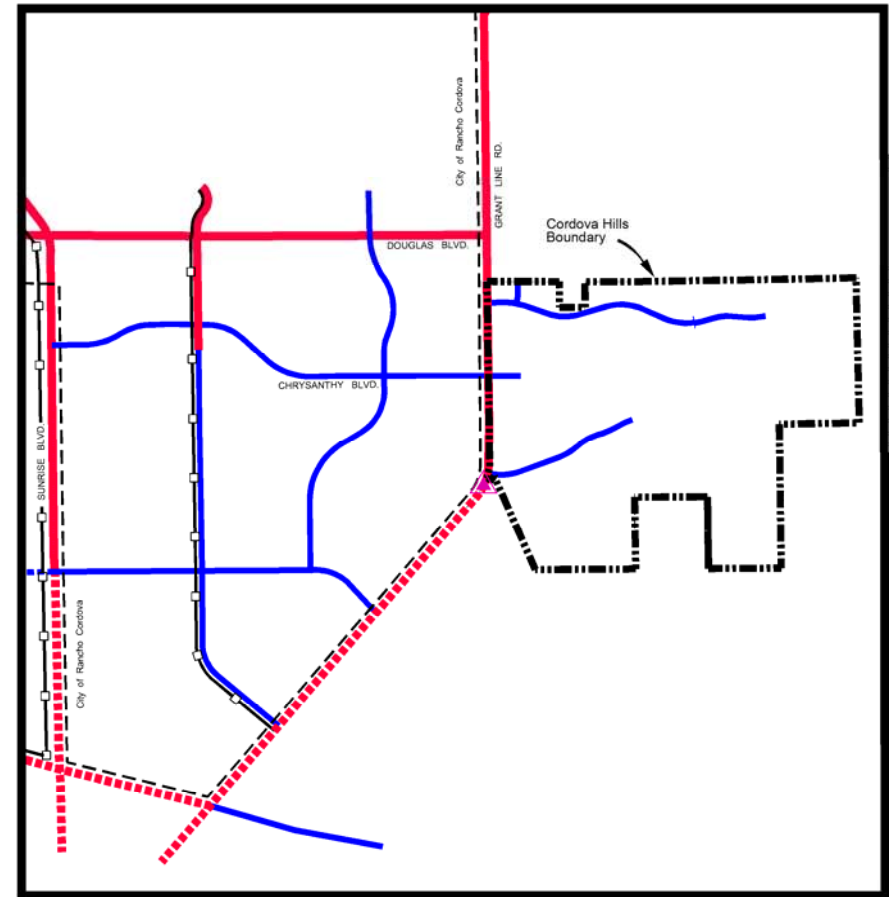


Existing Transportation Plan



Legend

- Thoroughfare- Pre 2030
- Arterial- Pre 2030
- - - Thoroughfare- Post 2030
- - - Arterial- Post 2030
- - - City of Rancho Cordova
- Transit- Post 2030
- ▲ Wildlife Grade Separation



Proposed Transportation Plan

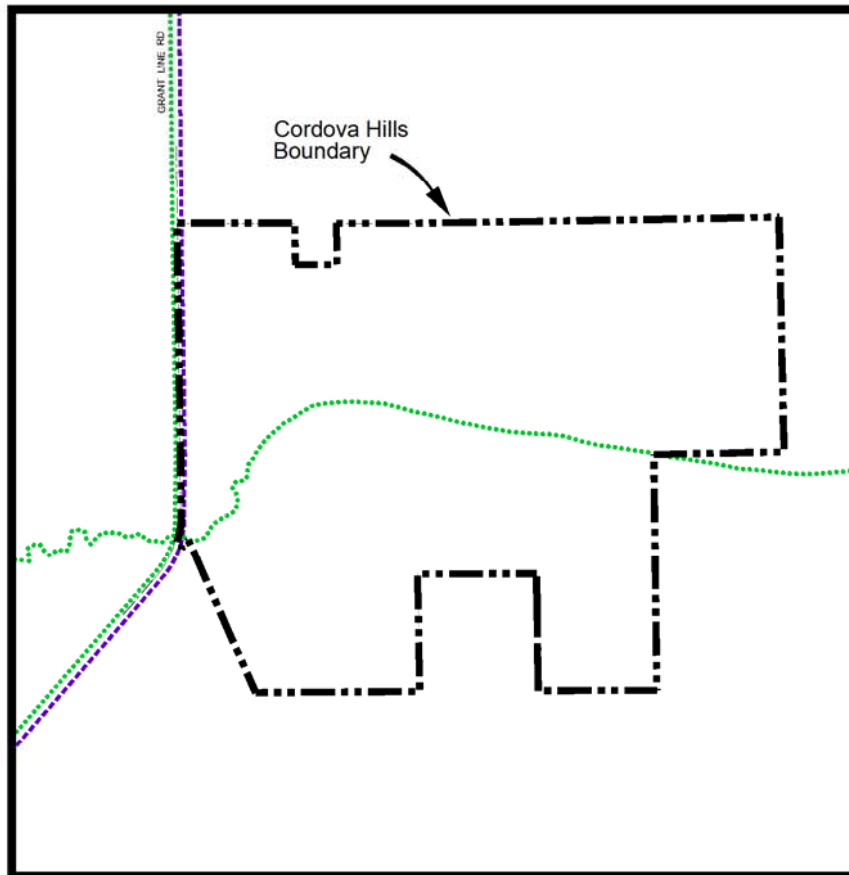
Transportation Plan General Plan Amendment (2011 General Plan)

Scale: 1"= 2,000'
(when plotted at 24" x 36")

October 17, 2011
Revised: October 24, 2012

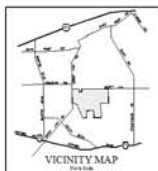
- Notes:
- 1) Exhibit based on November 2011 General Plan Transportation Plan.
 - 2) Some lines offset for clarity.

Plate PD-9: Proposed General Plan Bikeways Master Plan Amendment



Existing Bikeway Master Plan

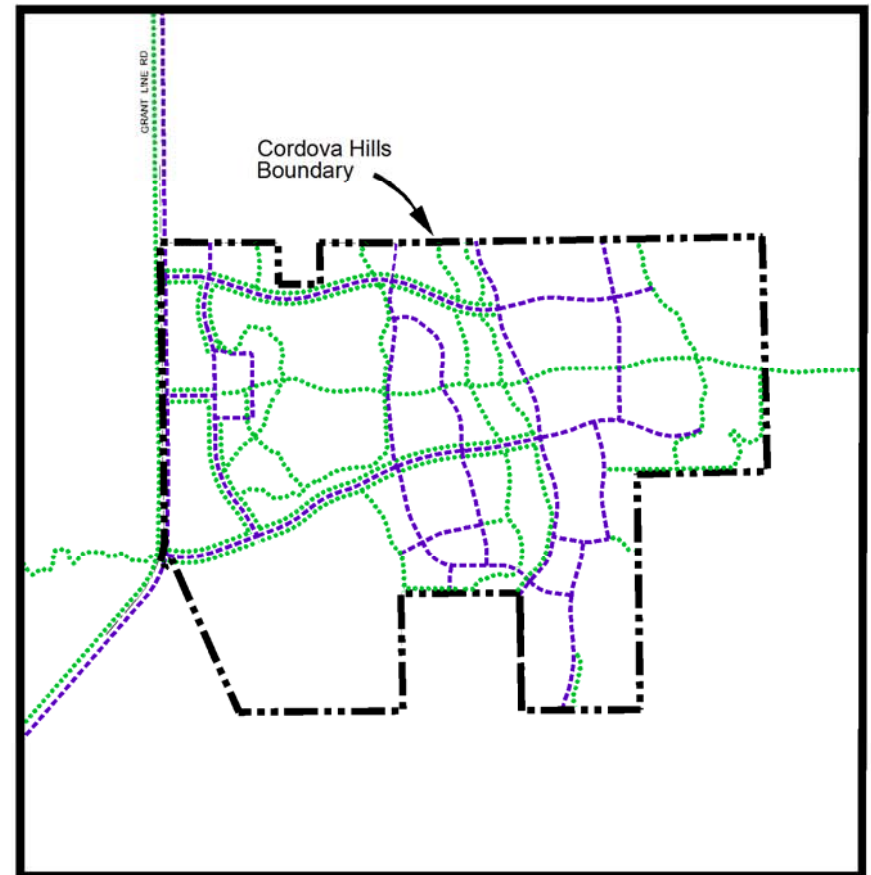
(adopted April, 2011)



Legend

- Future Class 1, Off-Street Bike Path
- Future Class 2, On-Street Bike Lane

Note: Some lines offset for clarity.



Proposed Bikeway Master Plan

Bikeways Master Plan General Plan Amendment (2011 General Plan)

Scale: 1"= 1,200'
(when plotted at 24" x 36")

October 17, 2011

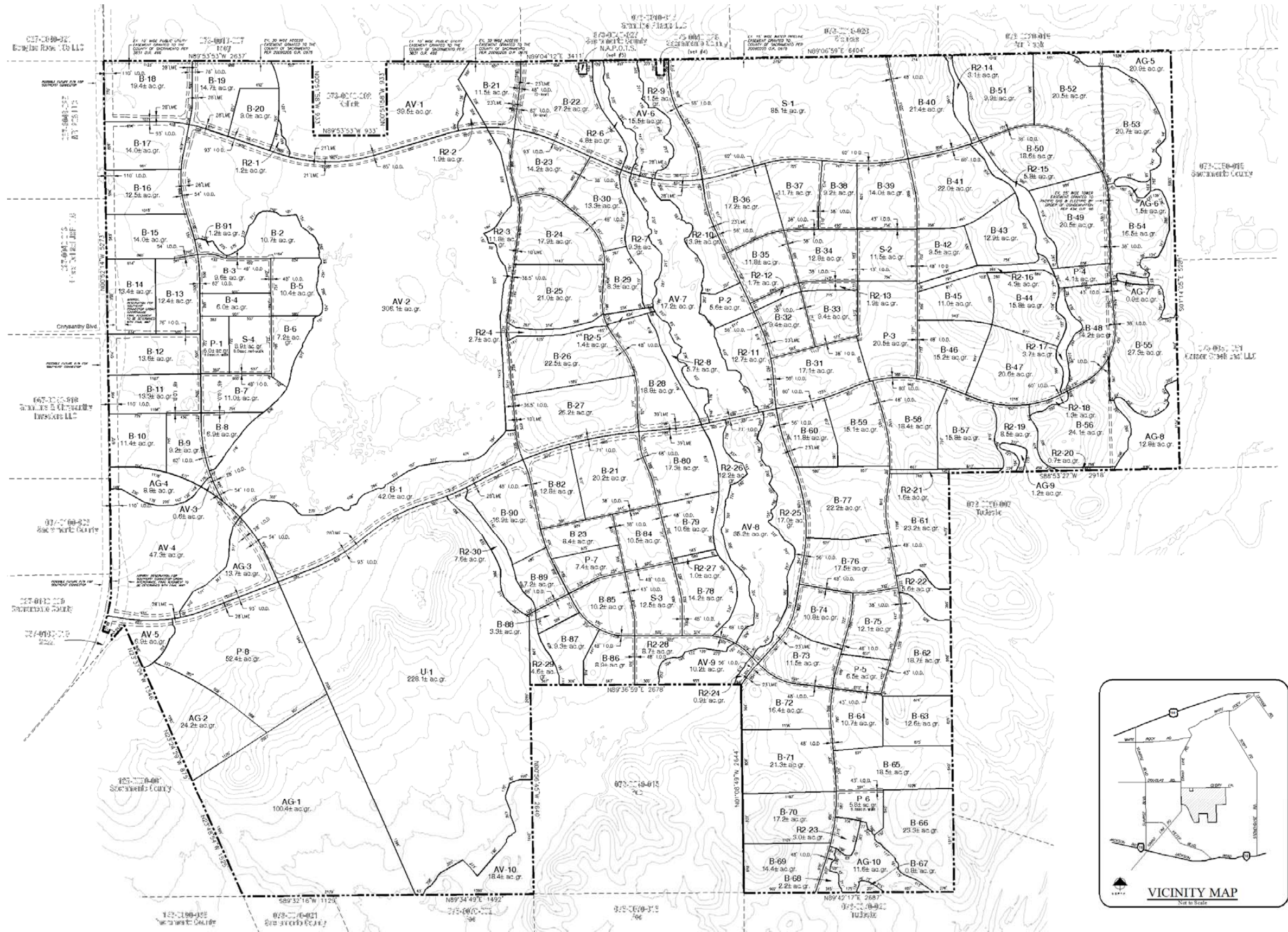
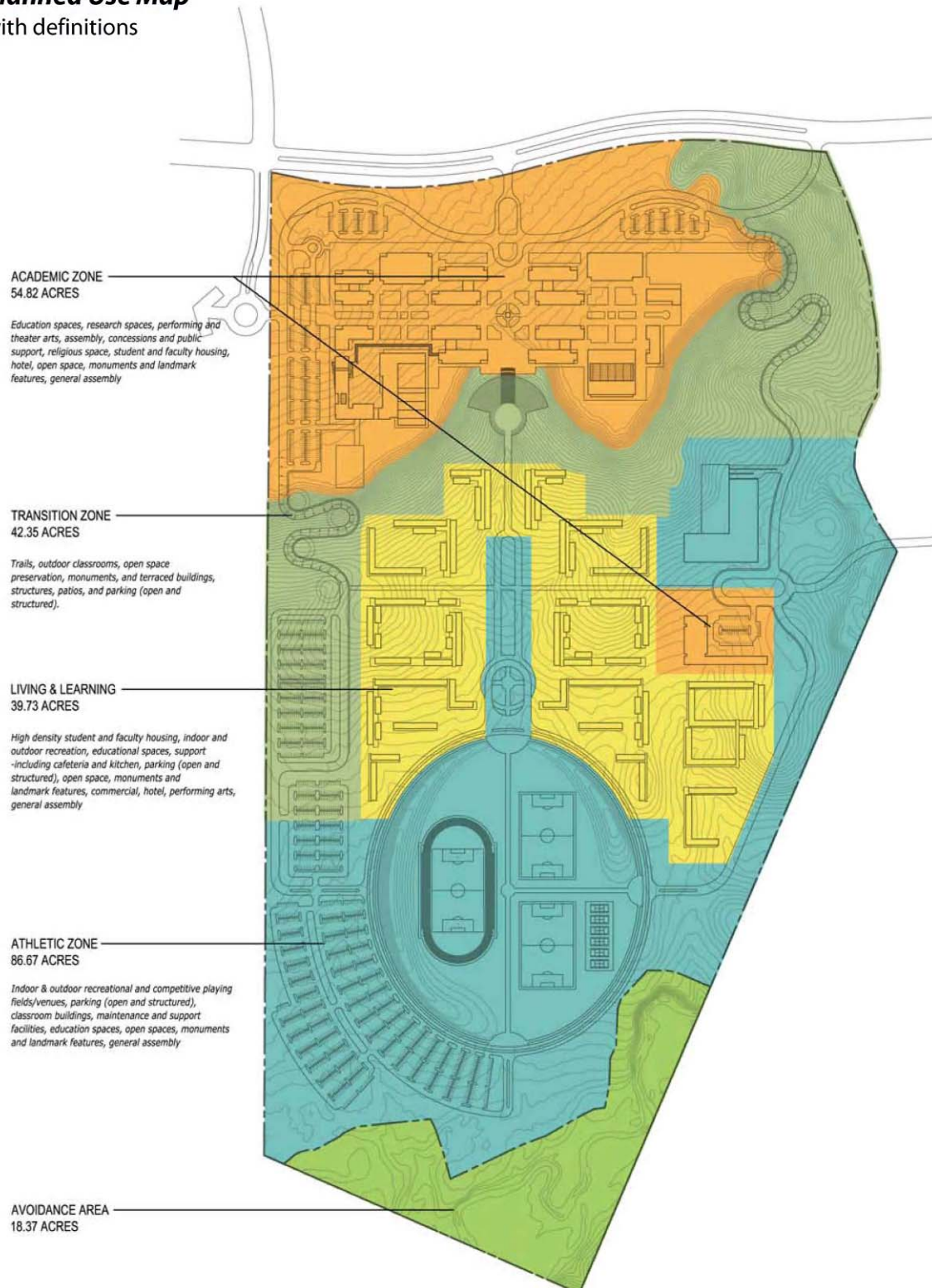
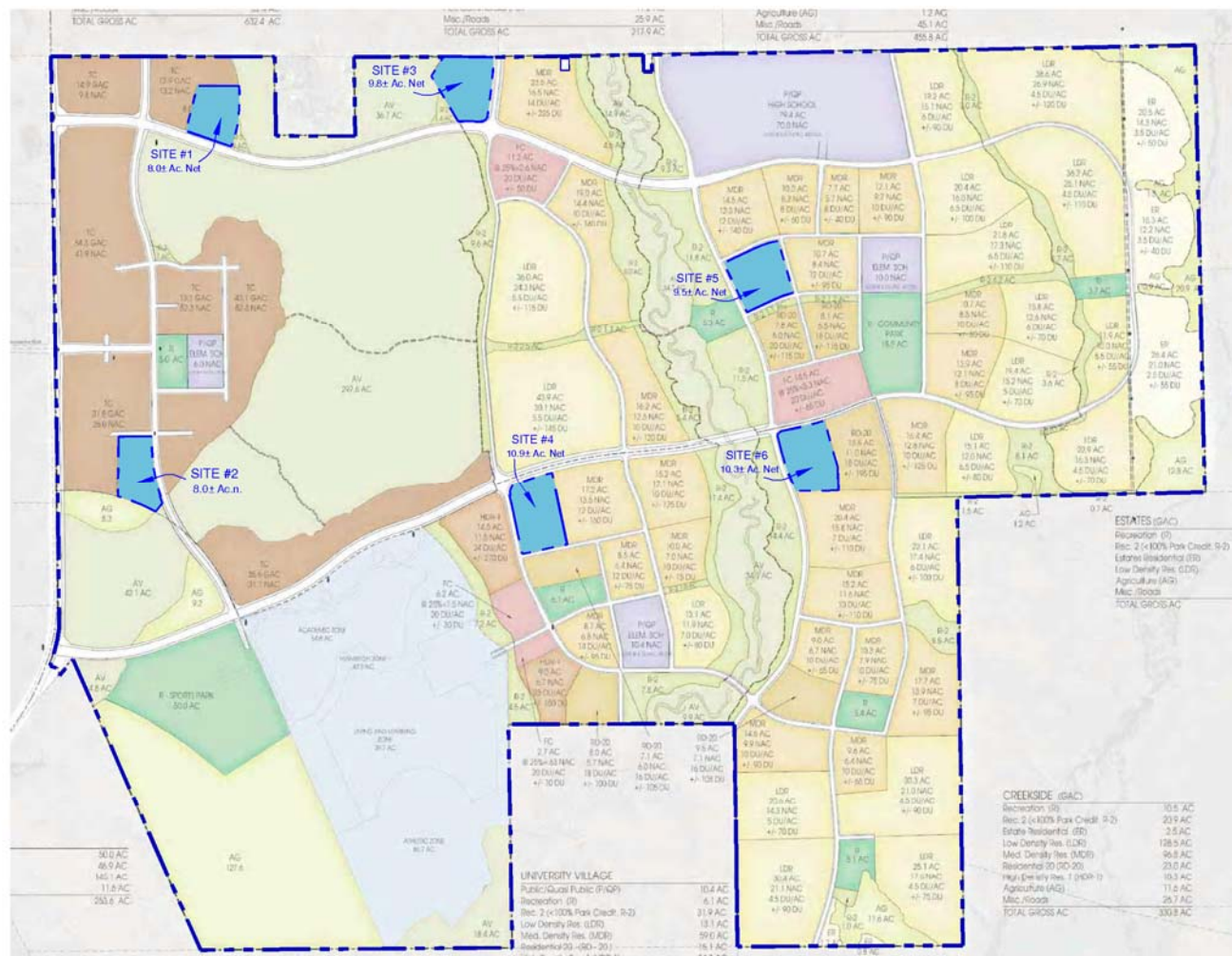


Plate PD-11: Conceptual University/College Campus Center

Planned Use Map with definitions



MAC KAY & SOMPS
ENGINEERS PLANNERS SURVEYORS



Cordova Hill

- 1) Areas shown are approximate and subject to change.
- 2) AH sites shown per Cordova Hills Affordable Housing Plan.
- 3) Land Use Plan source- Cordova Hills Master Plan-
Figure 6.10 d.

Plate PD-13: Proposed Zone 40 Boundary

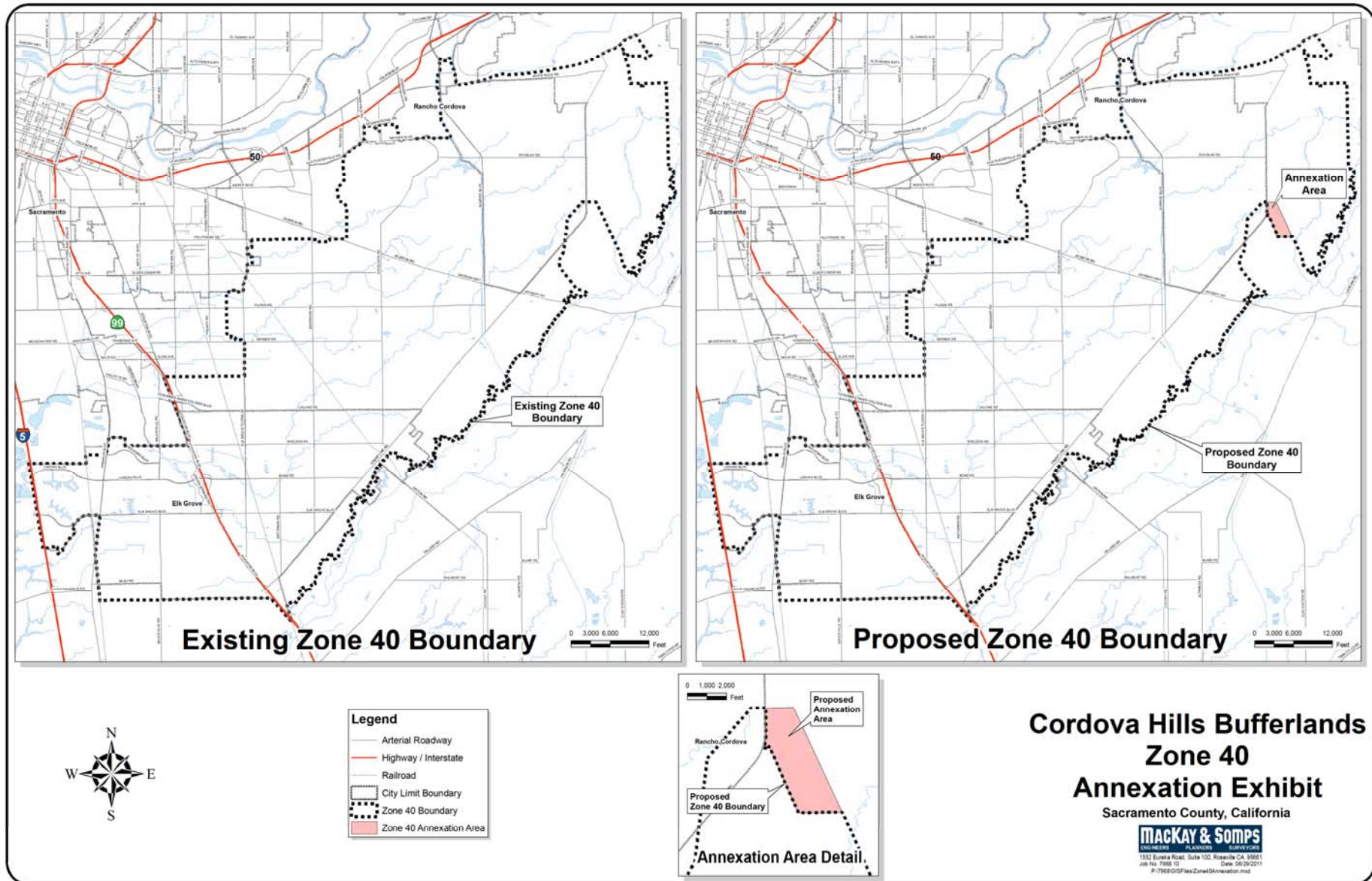


Plate PD-14: Proposed Zone 41 Boundary

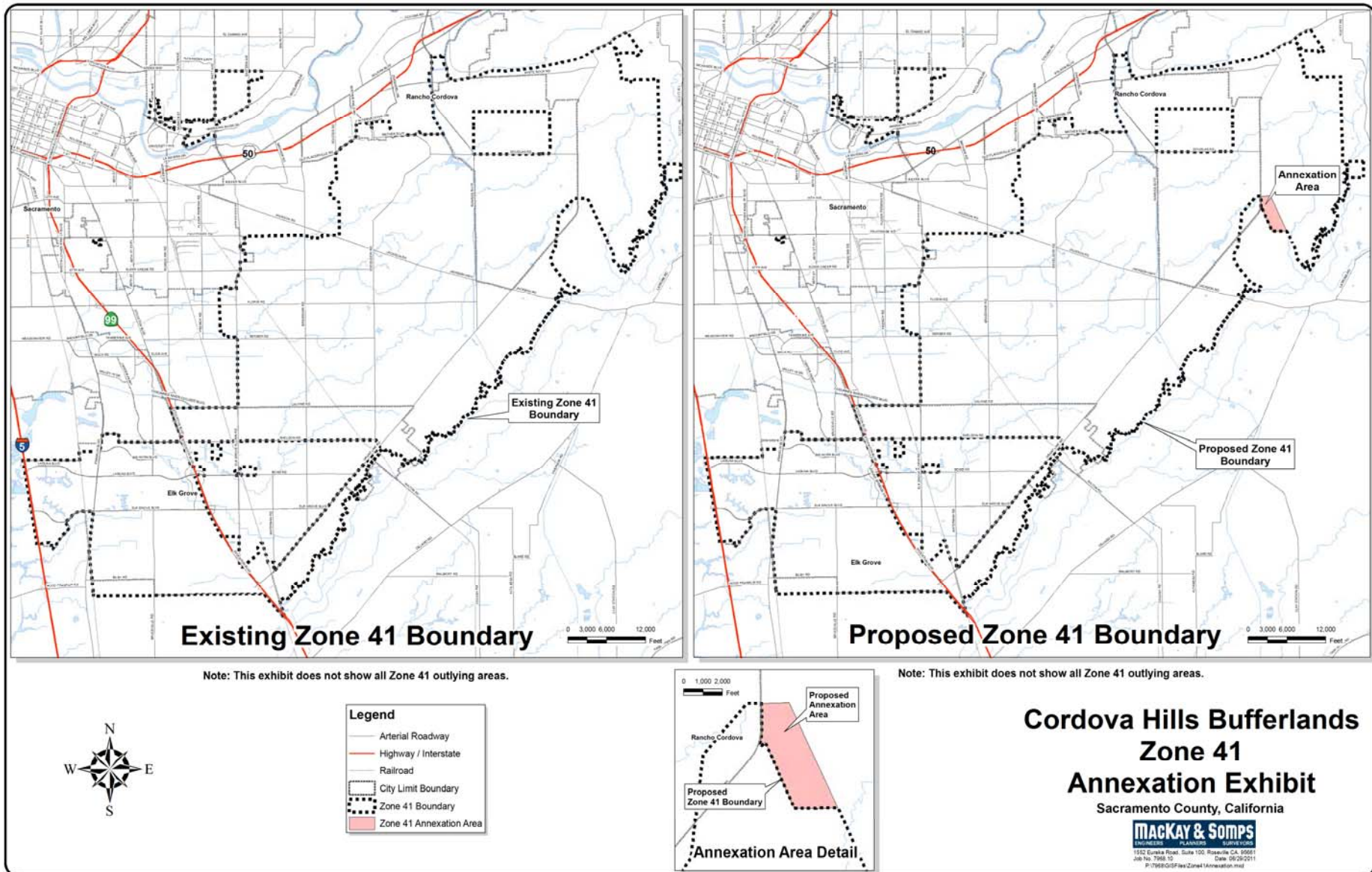
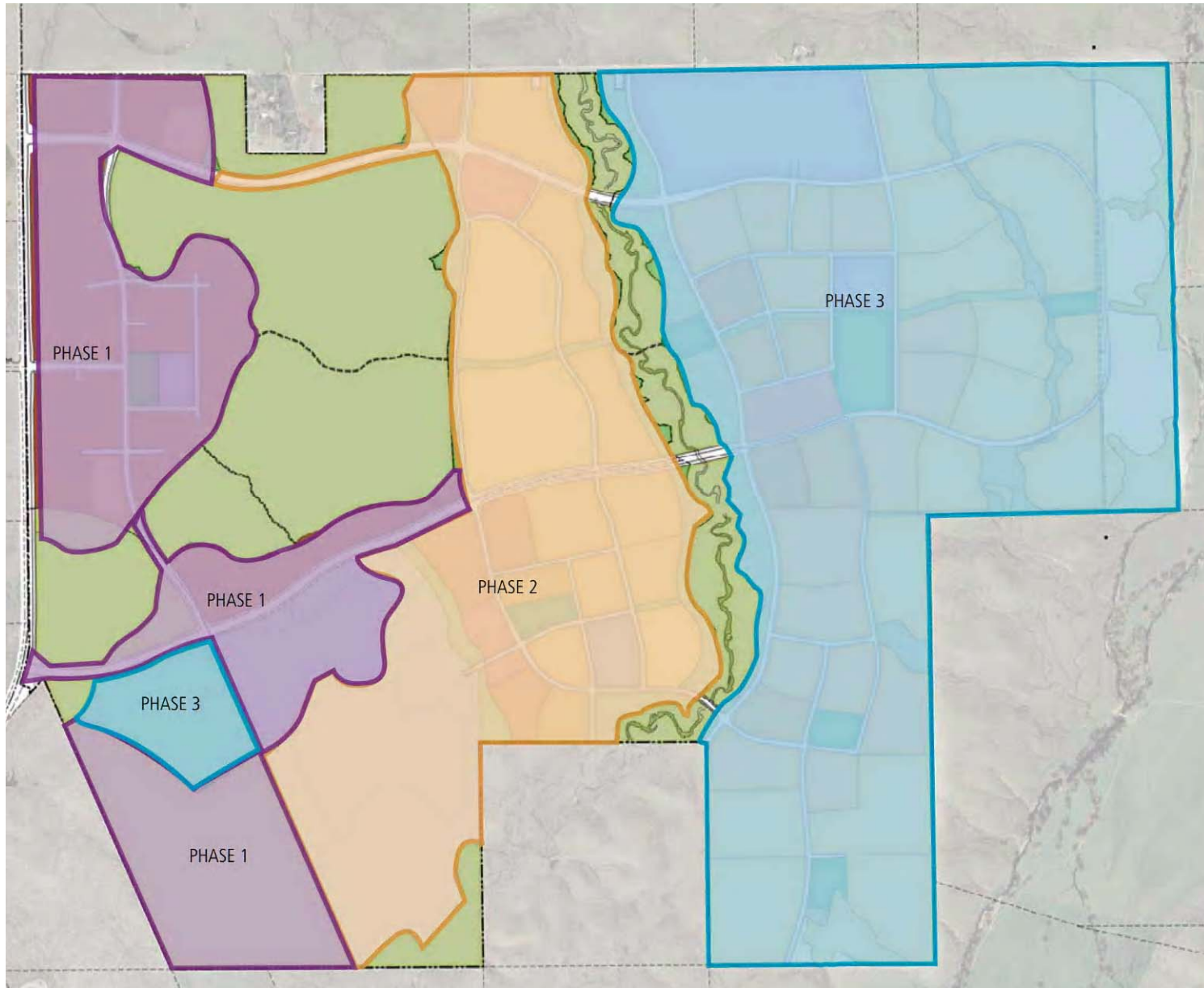


Plate PD-16: Phasing Diagram



DEVELOPMENT REGULATIONS

The Cordova Hills Land Use Master Plan identifies 16 land use classifications, which are described within the Cordova Hills SPA. Table PD-1 and Table PD-2 below provide a summary of the classifications and their use restrictions. The materials herein provide an overview; for more detailed descriptions please refer to the Cordova Hills SPA available for review at

<http://www.planningdocuments.saccounty.net/ViewProjectDetails.aspx?ProjectID=784>.

The Flex Commercial, Commercial Mixed Use, and Flex Office zones will allow some residential uses, though the SPA does restrict the type and amount of residential allowed in each zone. As stated in Table PD-1, the Town Center District allows all uses except the Flex-Residential Overlay and Estates. As stated in the application materials, the Town Center will be divided into districts (Retail/Entertainment, Business Mixed Use, Town Center North, Town Center East, and Southern Gateway). The SPA defines specific rules and guidelines applicable to each district. In the Town Center, a maximum of 1,750 dwelling units and 966,779 square feet of Commercial Mixed Use and Flex Office uses will be permitted.

In addition to the above, the SPA also includes a provision allowing a community-wide transfer of unit allocations. If a Village is developed with fewer units than originally allocated, these units may be transferred to another Village provided it does not significantly alter the character of the Village and it does not exceed the planned maximum cumulative average daily trips or dwelling units by 10%.

Table PD-1: Land Use Designations

Land Use Designations		Permitted Uses
(AG)	Agriculture	Agriculture, Sports Park, Solar Farm, District Energy Plant, Corporation Yard, Park and Ride Lot, Transit Parking Facility, Fueling Station, Roads, Storm Water and Storm Quality Basins, Community Gardens, Avoided Areas, Sewer Pump Station and Line, Water Tanks and Similar Utilities
(P/QP)	Public/Quasi Public	Churches, Schools, Parks, Public Utilities, Libraries, Fire Stations, Community Gardens, Flood Control and Storm Water Quality Treatment Facilities)
(R)	Recreation	Parks, Recreation Centers, Community Centers, Concessions, Minor Retail, Coffee Shop, Paseos, Open Space, Flood Control and Storm Water Quality Treatment Facilities
(R2)	Recreation and Open Space	Parks, Recreation Centers*, Community Gardens, Community Centers*, Concessions*, Minor Retail*, Coffee Shop*, Paseos, Open Space, Flood Control and Storm Water Quality Treatment Facilities
(AV)	Avoided Areas	Resource Avoidance, Trails, Outdoor Classroom, Interpretive Signage
(ER)	Estates Residential (1 to 4 du/acre)	Single Family Dwellings, Schools, Parks, Private Community Centers, Gardens, Landmark Features, Private Schools, Public Utilities, Flood Control and Storm Water Quality Treatment Facilities
(LDR)	Low Density Residential (4 to 7 du/acre)	Single Family Dwellings, Duplex and Halfplex Dwellings, Churches, Schools, Parks, Public and Private Community Centers, Gardens, Landmark Features, Private Schools, Public Utilities, Libraries, Fire Stations, Police Stations, Flood Control and Storm Water Quality Treatment Facilities
(MDR)	Medium Density Residential (7 to 15 du/acre)	Small Lot Single Family Dwellings, Greencourt, Motorcourt, Duplexes, Halfplexes, Townhomes, Live/Work Dwellings, Neighborhood Work Centers, Children and Senior Day Care Centers, Churches, Schools, Parks, Public and Private Community Centers, Gardens, Landmark Features Private Schools, Public Utilities, Libraries, Fire Stations, Police Stations, Flood Control and Storm Water Quality Treatment Facilities
(RD20)	Medium/High Density Residential (20 du/acre)	Same as MDR
(HDR1)	High Density Residential (20 to 30 du/acre)	Townhomes, Apartments, Live/Work Dwellings, Neighborhood Work Centers, Children and Senior Day Care Centers, Recreation Centers, Churches, Schools, Parks, Private Schools, Public Utilities, Libraries, Fire Stations, Flood Control and Storm Water Quality Treatment Facilities
(HDR2)	(30 to 40 du/acre)	Same as HDR 1
Land Use Designations		Permitted Uses
(FRO)	Flex Residential Overlay	Flex Residential Overlay applies to LDR, MDR, RD20, and HDR uses as indicated on the FRO Map. All uses allowed in the underlying land use designations, plus Retail and Work Centers, Live / Work Dwellings, Children and Senior Day Care Centers
(FC)	Flex Commercial	Please refer to the following description of permitted and prohibited uses.
(CMU)	Commercial Mixed-use	Hospital (100 bed maximum) Please refer to the following description of permitted and prohibited uses.
(FO)	Flex Office	Please refer to the following description of permitted uses.
(TC)	Town Center	TC permits all uses allowed in the other land use designations, except FRO and the Estates. Please refer to the following description.

* USES NOT ALLOWED IN THE PASEO CENTRAL AREA

Table PD-2: Flex and Commercial Zone Permitted Uses

Use	FC	CMU	FO
General Merchandise	X	X	
Business Services	X	X	X
Personal Services	X	X	X
Food Services	X	X	X
Neighborhood-Serving Food, Drug, or Liquor Sales	X	X	
Children and Senior Care Centers	X	X	
Parks and Recreation Centers	X	X	X
Churches	X	X	
Schools	X		
Libraries	X	X	
Fire and Police Stations	X	X	X
Gasoline Stations	1	X	
Gasoline Stations with Accessory (e.g. car wash)		X	
Auto Repair	1		
Auto Sales – Motorcycle, Alternative Vehicle and Moped Only	1	1	
Neighborhood Vehicle and Auto Rental	1	1	
Business or Professional Office	X		X
Insurance Office	X		
Bank/Financial Institution	X	X	X
Medical or Dental Office	X	X	X
Laboratory and Research	X	X	X
Office Support Services	X	X	X
Computer-Related Services	X	X	X
Public Utilities and Stormwater Facilities	X		
Hardware Stores	X	X	
Educational Services	X	X	X
Civic	X	X	
Entertainment	X	X	
Hospitality	X	X	
Primary-Use Parking Lot or Garage		X	
Recycling Centers		X	
Residential (not to exceed 25% of net area)	X	X	X
Farmer's Markets	X	X	X
<i>X: Permitted 1: Requires a Use Permit</i>			

UNIVERSITY/COLLEGE CAMPUS CENTER

The SPA reserves approximately 224 acres of land for a future college campus. At the time of this writing, a specific university or other higher-education institution had not been identified for the site. The SPA includes detailed concept plans for the future university/college campus center. For the purposes of environmental analysis, the anticipated enrollment is 6,000 students (4,300 undergraduate and 1,700 graduate) and 2,036 total employees. A total of 65% percent of students were assumed to live on the campus (4,040 students). It was also assumed that the university/college campus center will require approximately 1,870,000 square feet of facilities. Note that the phasing described below is a conceptual plan, and that the actual buildout will progress over the long-term planning horizon in response to demand and in response to the needs of the specific university which is ultimately located here – it cannot be predicted with precision. The specific floor areas, buildings, and uses identified in the following phases are conceptual and not intended as specific building entitlements. None of the environmental analyses in the main chapters rely on any aspect of this phasing plan to assess impacts; impacts are based on full buildout of the entire area reserved for the university/college campus center.

PHASE ONE

Phase One may span the first four years of facility operation, and could involve approximately 344,000 square feet of building construction. Phase One buildings are listed in Table PD-3. The Phase I campus could accommodate approximately 600 students and 207 employees.

Table PD-3: Phase One

Building	Gross Area (square feet)
Welcome Center	23,000
Student Union & Rec. Center	60,000
Administration Center	20,000
General Academic	20,000
General Academic & Library	20,000
Arts and Sciences	34,000
Campus Hotel	56,000
Housing	110,000
TOTAL	344,000

PHASE TWO

Phase Two may span years four through ten of facility operation, and could involve approximately 503,000 square feet of building construction. This phase could include the construction the buildings listed in Table PD-4.

Table PD-4: Phase Two – Additional Buildings

Building	Gross Area (square feet)
Performing Arts	45,000
Chapel	18,750
Library	120,000
Athletics and Wellness	130,000
Housing	189,250
TOTAL	503,000

PHASE THREE

Phase Three may span the years ten through twenty of facility operation, and could involve approximately 563,900 square feet of building construction. Phase Three buildings are listed in Table PD-5.

Table PD-5: Phase Three – Additional Buildings

Building	Gross Area (square feet)
Main Lecture Hall	48,000
Arts and Sciences	68,000
Executive Training Center	147,000
Physical Plant	30,000
Housing	270,900
TOTAL	563,900

ULTIMATE BUILD-OUT AND PHASE FOUR

The final phase may span years twenty to thirty of facility operation, and could add an additional 548,300 square feet of buildings, bringing the total university/college campus center size to 1,870,000 square feet. Phase four facilities are listed in Table PD-6. As stated, in this ultimate configuration the university/college campus center could accommodate 6,000 students and 2,036 total employees.

Table PD-6: Phase Four – Additional Buildings

Building	Gross Area (square feet)
Medicine and Nursing	41,100
Engineering	30,300
Business	33,450
Education	18,300
Law	16,800
Housing	408,350
TOTAL	548,300

RESIDENTIAL

The proposed Project includes a maximum of 8,000 residential units; assuming 2.54 persons per household for rental units and 2.71 persons per household for owner-occupied units, this will provide housing for a residential population of approximately 21,379 residents (persons per household data is from the Sacramento Area Council of Governments). In addition to this, the university/college campus center will include an on-campus population of 4,140, for a total Project residential total of 25,519. Table PD-7 and Table PD-8 below summarize the residential density ranges and the number of dwelling units that are proposed. Low Density Residential lot sizes will range from 5,000 to 20,000 square feet, and Medium Density Residential lot sizes will range from 2,000 to 4,999 square feet. High density residential zoning will be dedicated to attached condominiums and multi-family dwellings. The Project also includes on-site construction of affordable residential, totaling 1,044 units. In the aggregate, all residential units throughout Cordova Hills will have a total average density of ten or more dwelling units per acre of buildable land available for residential uses.

Table PD-7: Land Use Densities

Residential Type	Residential Density Per Acre	Dwelling Units
Estate Residential	1 – 4 du/acre	147
Low Density Residential	4 – 7 du/acre	1,930
Medium Density Residential	7 – 15 du/acre	3,110
RD-20	20 du/acre	888
High Density Residential 1	20 – 30 du/acre	1,620
High Density Residential 2	30 – 40 du/acre	150
NOTE: Units can build out at 75% of zoned maximum. Also, an additional 150 units are expected in the Flex Commercial designation.		

Table PD-8: Residential Unit Totals

Village	Number of Units	Net Residential Acres	Net Density
Town Center Village	1,750	194.6	9
Ridgeline Village	995	107.2	9
University Village	1,475	96.3	15
Estates Village	500	125.8	4
East Valley Village	1,740	188.6	9
Creekside Village	1,540	192.4	8
University/College Campus Center	1,010	39.7	25
Project Total	9,010	938.3	10

RETAIL/COMMERCIAL

The Project includes a total of 1.3 million square feet of commercial uses. The maximum commercial square footage permitted within the various villages where commercial uses are designated is: Ridgeline, 92,000; University Village, 88,860; East Valley, 111,200; and Town Center, 966,779. Adding up to 90,580 square feet of additional commercial uses within the Flex Residential Overlay yields a total maximum square footage of 1,349,419. The majority of the retail and office is located in the Town Center. The Town Center is proposed to contain a large array of retail types, including restaurants, movie theatres, book stores, home supply stores, electronic stores, and other types of similar retail. The application materials state that the Project is designed to accommodate this retail in a condensed “main street” atmosphere. The Town Center will also include some high density residential uses above the first-floor retail.

In the remaining districts there will be neighborhood-serving retail/office/mixed-use village centers. These neighborhood-serving retail villages will consist of grocery stores, dry cleaners, restaurants, and other retail stores that meet the daily needs of residents within the community.

RECREATION AND PRESERVES

PARKS AND TRAILS

The proposed Project SPA describes a mix of parks, open space, recreation, and non-vehicular circulation amenities, including: a sports park, community parks, neighborhood parks, pocket parks, linear parks, detention basin parks, community facilities, open space, utility easements, drainage corridors, wetland avoidance areas, and a large trail network. Proposed parks are listed in Table PD-9 and depicted on Plate PD-17.

Table PD-9: Parks Within The Project

Park Type	Quantity	Acreage Size	Service Area	Typical Features
Sports Park	1	50	Regional	Sports Fields
Community Park	1	18	3 miles	Sports Fields, Trails, Dog Park
Neighborhood Parks	6	4 - 5 acres	1/2 mile	Green space, Tot Lot, Restrooms, Sports Court

In addition to the formal parks above, the Project includes approximately 150 acres of land designated as R-2, which is for more passive recreation uses (paseos, trails, picnic areas, and informal play areas, along with detention basins). These areas provide opportunities for additional parkland resources, and the additional parkland needed will be provided in these areas at the time when small-lot tentative maps are proposed. The Project will also include 26 miles of Community Class II on-street bicycle paths and 22 miles of off-street trails and paths. Refer to Plate PD-18 for the trails exhibit. Every home will be no more than a ¼ mile from one of the trails, parks, or other open space.

The main Cordova Hills trail will traverse 3 miles from the western boundary of the Project to the eastern boundary without any at-grade crossings of a major arterial street. This trail will cross the major resource avoidance areas. The Project is situated adjacent to the Laguna Creek trail system vision area (which would connect Rancho Cordova to Elk Grove). Cordova Hills is designed to connect to this trail system, if the trail becomes a formal Project.

Plate PD-17: Proposed Parks

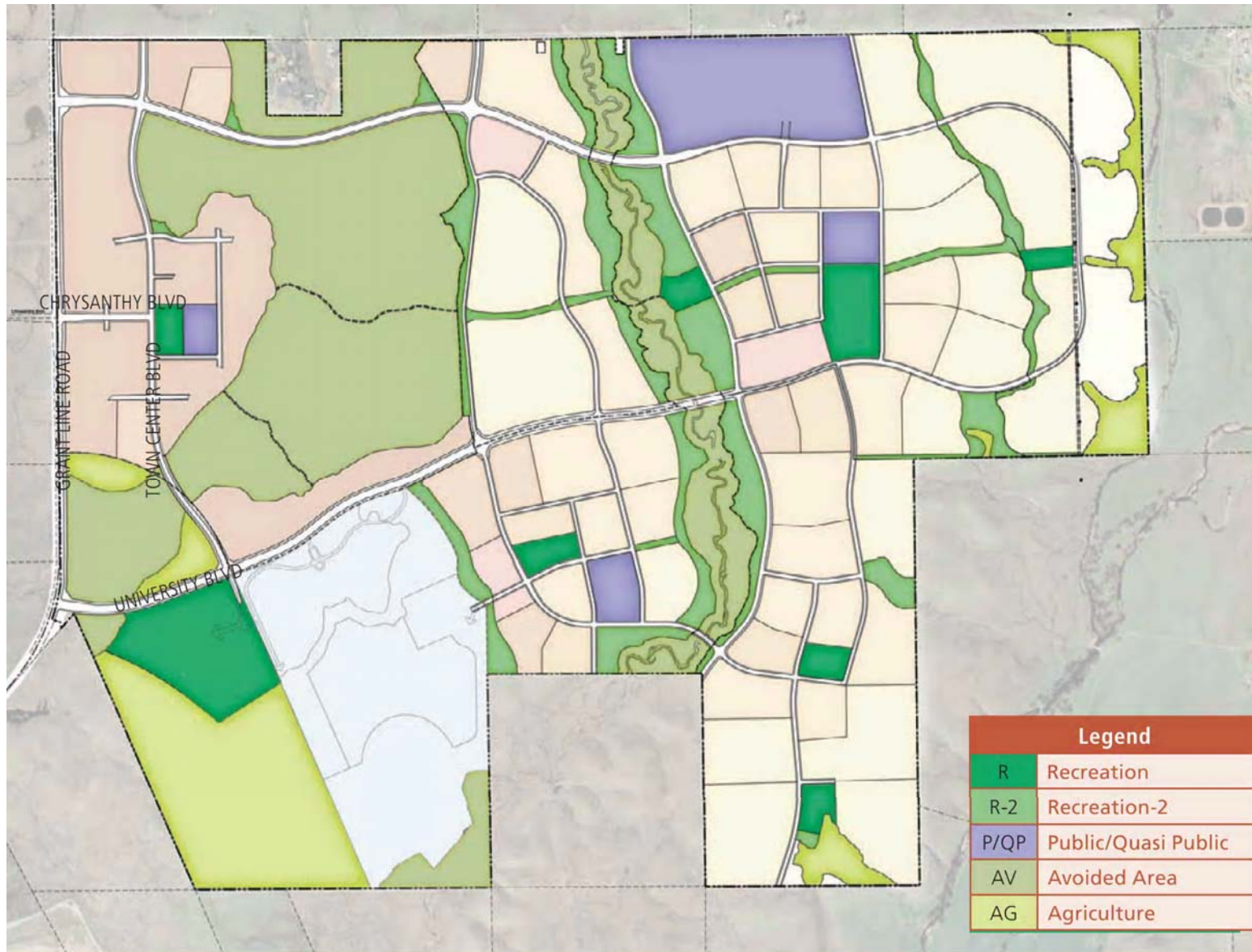


Plate PD-18: Proposed Trails Plan

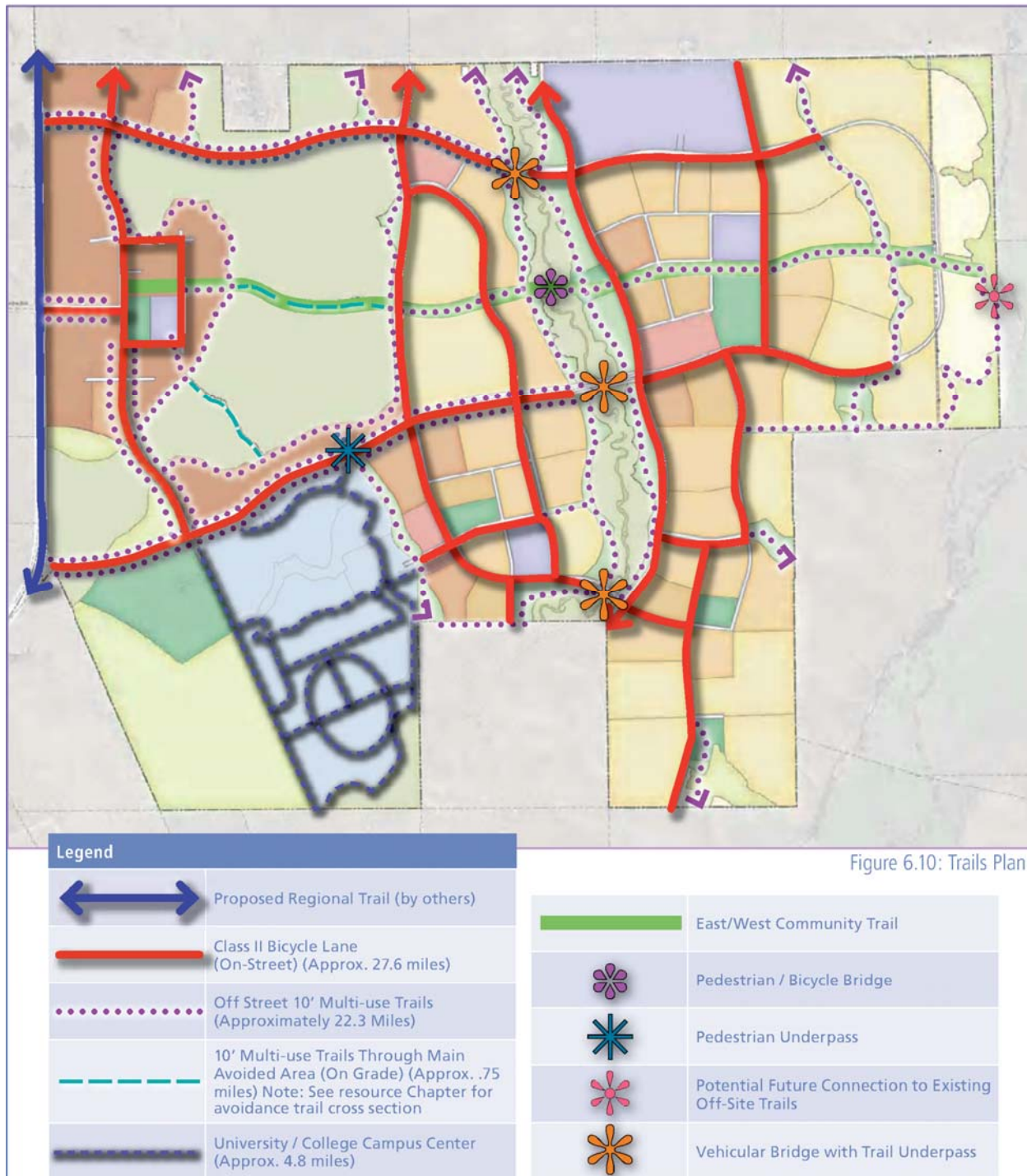


Figure 6.10: Trails Plan

AVOIDANCE AREA

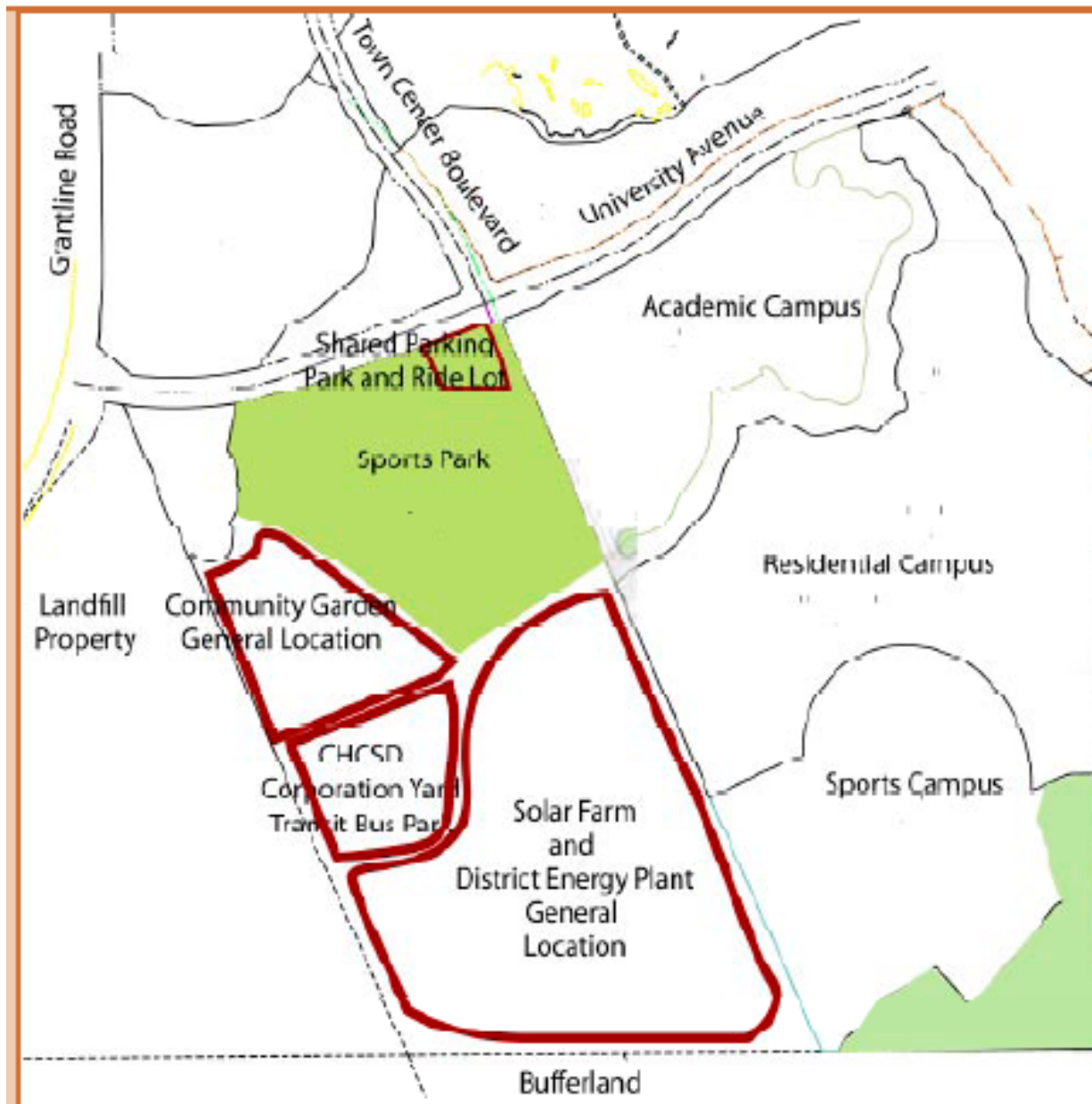
The largest wetland avoidance area is proposed on the western third of the Project where the majority of the wetlands exist. This area extends from the southwestern property boundary of the Project to the northern boundary line. A north-south drainage that bisects the central portion of the Project will be avoided within an open space corridor – along with some of the wetlands connected to the drainage. Detention basins will be placed along the outer edges of the avoidance areas, in areas designated Recreation 2, which will both detain and treat water prior to discharge into the wetland systems. This drainage corridor exits the central portion of Cordova Hills to the south and then re-enters the site at the university/college campus center's southeastern corner. The drainage corridor's re-appearance on the university/college campus center site is proposed for avoidance in the same manner as it is on the central portion of the Project.

THE "BUFFERLANDS" AND AGRICULTURE

The Project includes multiple areas designated as Agriculture, which, according to the SPA development regulations, is a land use designation that allows many uses in addition to agriculture. Allowable uses include: agriculture, sports park, solar facility, district energy plant, corporation yard, park and ride lots, transit parking facilities, fueling stations, roads, stormwater basins, community gardens, Avoided Areas, sewer pump station and lines, water tanks and similar utilities. Many of these uses are specifically proposed within what the SPA calls the "bufferlands" area, in reference to the fact that the area lies partly within the 2,000-foot buffer surrounding Kiefer Landfill; this EIR will refer to these lands as those which lie outside of the USB. Among the uses which will lie in the portion of the Project outside of the USB is a sewer force main that will connect to the university/college campus center area (refer to the Public Utilities chapter) and a Sports Park proposed near the southern Project entrance (refer to the Public Services chapter). Other uses are conceptually laid out in the SPA, but there are no specific land use designations or master plans which describe them (the corporation yard, solar farm, and district energy plant). Because this portion of the Project is outside of the USB, public sewer systems cannot serve the sports park or other planned uses (pursuant to General Plan Policy; refer to the Public Utilities chapter). Uses in this area will rely on septic systems for sewer disposal. General Plan policy also excludes the use of public water to serve this area, but the Project includes a policy amendment that would allow the use of public water (refer to the Public Utilities chapter).

The SPA contains a specific section (Section 4.7, Development Standards in Agricultural Bufferlands) describing uses within the large Agriculture area outside of the USB. This section indicates that development of a corporation yard, solar farm, and district energy plant will not require a Use Permit as long as performance standards listed within the SPA are met. The SPA includes a figure noting approximate conceptual locations for these uses (Plate PD-19). Design-level plans are not included at this time, but the sections which follow provide general descriptions of facilities of this type.

Plate PD-19: Approximate Location of “Bufferlands” Uses



CORPORATION YARD

Corporation yards typically involve several buildings, an equipment maintenance shop, and an entirely paved surface for the parking of vehicles and other equipment. It is assumed that a fleet fueling station will also be constructed with the corporation yard.

SOLAR FACILITY

The SPA does not specify the size of the solar facility that may be constructed within the portion of the Project outside of the USB, so this discussion describes solar facilities in general. Approximately ten photovoltaic solar array applications have been processed in Sacramento County within the past few years. These large systems are installed by constructing a mounting system and then assembling the panels on top of the system. The panels are wired together in series to form long chains or rows of panels.

System construction typically involves trenching in long rows to enable installation of underground cables and wiring, vibratory driving of pipe pier supports, installation of the mounting system onto the supports (which may also include a tracking system, if the panels are designed to move with the sun), installation of the photovoltaic panels and wiring, construction of concrete pads for equipment, installation of inverters and transformers (energy must be switched from DC to AC), and construction of a substation.

The systems proposed in the County have varied in size from 20 acres to nearly 300 acres, and with a generation capacity of 3 megawatts to 30 megawatts. On average, systems in the County are capable of generating between 1 and 1.5 megawatts for every ten acres of land.

DISTRICT ENERGY PLANT

The applicant submitted a short description of the purpose and potential design of the energy plant, but no details are contained within the SPA, which simply states in Section 2.1.1 that one power source could be methane gas routed from the Kiefer Landfill (which operates a methane recapture program). The applicant indicates that the configuration with the best economic promise includes electric chillers, gas boilers, a thermal energy storage system, and an engine-based combined heat and power system.

A chiller uses electricity to reduce the temperature of water, and this water would then be circulated through a network of underground chilled water piping to air conditioning units which use the cold water to cool the air. The water is then recirculated back to the chiller to be cooled again. The gas boilers would use the opposite mechanism, using natural gas to generate hot water which is distributed through a heating system. Thermal Energy Storage includes a number of different technologies, but in essence would involve the storage of chilled water at night that could then be used to cool environments during the day. Chilling the water at night would shift some of the electricity load to off-peak periods and commensurately reduce the amount of energy needed during the day. Hot water would be similarly stored. Natural gas from the landfill would power the combined heat and power system that will generate electricity

for the system. The applicant provided some estimates of phasing and equipment needs for the system (Table PD-10), which may take up approximately ½-acre of land.

Table PD-10: Potential District Energy Plant Equipment

Equipment	Unit Size	# Units Total			
		Phase 1	Phase 2	Phase 3	Phase 4
Chiller, tons	750	2	4	4	5
Boiler, MVBTUh	10	2	2	2	2
Boiler, MVBTUh	20		2	2	3
Hot Water Storage, gallons	18,000	1	1	1	1
Chilled Water Storage, gallons	1,000,000	1	1	2	2
Engine, MW	1.4	2	2	2	2

CIRCULATION

The central proposed point of access into the Project site is an extension of the existing Chrysanthy Boulevard, which would bisect the center of the Project and provide the access point into the proposed Town Center. Two additional access points are proposed between ½-mile and ¾-mile north and south of the Chrysanthy access. The two access points to the south and north of Chrysanthy will traverse into the eastern area of the Project creating a loop where both the roads will eventually connect. These three access points into the Project will be four lanes and decrease to two lanes at the eastern side of the Project.

The Town Center and western third of the Project on the plateau will consist of a grid street network due to the flat topography and high density of land uses that exist in the area. Further to the east the density of land uses and topography do not provide as much of an opportunity for the traditional grid street network.

Cordova Hills will include a diversity of streets at full development, consisting of a Town Center Boulevard, four-lane arterials, two-lane Community Boulevards, two-lane Neighborhood Collectors, residential streets with detached sidewalks, and rural streets.

Traffic calming measures such as, traffic circles, roundabouts, intersection bulb-outs, lane width restrictions, and other measures will be utilized in order to reduce vehicle speeds and enhance pedestrian safety.

PUBLIC SERVICES

SCHOOLS

The Project includes three areas designated as elementary school sites (two of which are approximately ten acres each and one of which is approximately six acres), and one area designated as a high school (approximately 78 acres). Cordova Hills is within the Elk Grove Unified School District.

PUBLIC UTILITIES

WATER SUPPLY

Within the Urban Services Boundary, Cordova Hills is located within the Zone 40 service area of the Sacramento County Water Agency (SCWA). The areas outside of the Urban Services Boundary are likewise outside of Zone 40. The Project requires off-site extension of water lines. On-site transmission lines will be routed throughout the Project area. Due to the varying elevations of the Project, several booster pumps as well as pressure-reducing stations will be required to maintain system pressures to Zone 40 standards throughout the Project. Generally, the on-site transmission system will consist of 16-inch to 24-inch mains extending through the Project. A grid of 8-inch to 12-inch distribution mains will extend from the transmission system to serve local developments. Water infrastructure will be phased with development to meet end user demands as well as operational criteria of the system. The Project will ultimately include the construction of water storage tanks either within the Project site or on property controlled by the applicant which is just north of the Project boundary (refer to the Public Utilities chapter for details).

The Project also includes a request for Zone 40 water to be extended to the portion of the Project outside of the Urban Services Boundary. This will require an amendment to General Plan Policy LU-57. Policy LU-57 states: "The County shall not provide urban services beyond the Urban Policy Area, except when the County determines the need for health and safety purposes." New language is proposed as follows:

Policy LU-57. The County shall not provide urban services beyond the Urban Policy Area, except when the County determines the need for such services for health and safety purposes or where provision of such services is permitted pursuant to Policy LU-XX.

Policy LU-XX (numbering would be added after approval). Limited public water service and facilities can be extended beyond the Urban Policy Area/Urban Services Boundary to serve the 251 acre area located in proximity to Kiefer Landfill, as shown in Exhibit "A". Permitted uses within this area include agriculture, sports park, solar farm, district energy plant, corporation yard, park and ride lot, transit parking facility, fueling station, roads, storm water and storm water quality basins, community gardens, avoided areas, sewer pump station and lines, water tanks and similar utilities. Water facilities shall be sized adequately to only serve these permitted uses. Furthermore, proposed uses must be consistent with these permitted uses, act as a buffer between urban and open space uses, and help strengthen and preserve the current location of the Urban Services Boundary.

In addition to the General Plan policy amendment, the Project will require amendment of the Zone 40 and 41 boundaries to include the 241-acre area outside of the Urban Services Boundary.

WASTEWATER

The Cordova Hills Project area will need to be annexed into the Sacramento Area Sewer District (SASD) and the Sacramento Regional County Sanitation District (SRCSD). SASD owns and operates sewer trunk and collection systems throughout Sacramento County. SRCSD owns and operates the Sacramento Regional Wastewater Treatment Plant (SWRTP) and interceptor system throughout Sacramento County. Cordova Hills is in the Sphere of Influence (SOI) for SASD and SRCSD. Their SOI is coterminous with the Urban Services Boundary and their service boundary is coterminous with the Urban Policy Area. The Project requires off-site extension of sewer lines. On-site transmission lines will be routed throughout the Project area. A recycled water distribution system (purple pipe) will be installed for future use, so that recycled water may be used if an off-site treatment facility and recycled water delivery system to the Project site is made available.

STORM DRAINAGE

The waterways within Cordova Hills are tributary to two major creek systems. The western portions of the Project include intermittent drainages within the headwaters of Laguna Creek, the central and eastern portions drain to a tributary of Deer Creek, and a smaller portion in the east drains into Carson Creek, which is a tributary to Deer Creek. The Project includes detention basins and open stormwater swales, as well as an underground pipe system for stormwater.

Water quality will be conserved and enhanced through the use of local water quality features such as grassy swales, settling basins, and natural filters to clean surface runoff water before it reaches the natural drainage channels. These features will be incorporated in the pedestrian open space corridors and in dual-use park land. Low Impact Design (LID) principles such as bio swales, landscape retention areas, rain gutters dispensing to lawns, cobblestone driveways, and Hollywood driveways (two strips of pavement for the tires of the vehicle, with grass or landscaping in between) will be incorporated to the greatest extent feasible and when soil conditions permit.

CONSTRUCTION AND IMPLEMENTATION

As a master planned development, the Project will build out in response to market demand over the course of decades. Individual development Projects would be submitted to the County pursuant to the SPA requirements, with development generally progressing from the west (adjacent to Grant Line Road) to the east. Section 7.10 of the SPA (Materials Conservation) contains specific language noting that the Project site may contain aggregate material suitable for construction of road beds and other improvements, and that excavation and use of these materials is permitted as a temporary ancillary use in all development areas of the Cordova Hills Master Plan; it also notes that export of these materials off-site is expressly prohibited. The potential impacts of this are described in multiple chapters, including Geology and Soils, Noise, and Air Quality.

The Implementation chapter of the SPA (Chapter 9) indicates that amendments to the Master Plan may be permissible, including changing land use designations, design criteria, development standards, or policies. Definitions are included to describe a

Major Amendment or a Minor Amendment, with Major Amendments requiring the same process as the original Project (discretionary approval process) and Minor Amendments requiring approval by the Planning Director (non-discretionary approval process).

PROJECT OBJECTIVES

Outlined below are the primary objectives for the proposed Cordova Hills Project.

1. Develop a mixed use community that is designed in a manner that provides compatible land uses and reduces overall internal vehicle trips.
2. Develop an economically feasible master-planned community that reasonably minimizes its impact on biologically sensitive natural resources with feasible on-site wetland avoidance and preservation.
3. Develop a sustainable, multi-service town center that promotes walkability and alternative transit modes including but not limited to Neighborhood Electric Vehicles (NEVs), light rail, shuttle bus, and carpool facilities.
4. Provide uses for two underserved markets in the southeast Sacramento region:
 - a. Provide for the development of a major private university facility in Sacramento County.
 - b. Provide residential neighborhoods that are age restricted in order to serve seniors and larger lot sizes for executive housing to serve corporate executives.
5. Develop internal Project infrastructure and circulation networks of multiple modes that provide efficient connections to various land use components throughout the Project; specifically, trail opportunities to enhance the integration between the university/college campus center, town center, schools, and preserves/open space corridors surrounding the Project.
6. Develop recreational and open space opportunities that include neighborhood and community parks that are fully integrated into the Project through adequate trail connections and provide critical regional trail connections associated with adjacent trail systems
7. Allow for the inclusion of alternative energy sources to serve the mixed use community.

2 ALTERNATIVES TO THE PROPOSED PROJECT

INTRODUCTION

This chapter describes alternative versions of the proposed Project which could lessen impacts or that provide meaningful information to foster informed decisions. Impact discussions are more brief than those found in the Project chapters, consistent with CEQA Guidelines Section 15126.6(d). This chapter does not repeat background discussions or other subject matter which has already been described in the topical chapters of this EIR, but focuses on those Alternative impacts which are substantively different than the impacts described for the Project. Reviewers are encouraged to read the topical chapters describing Project impacts prior to reading the Alternatives chapter. A brief table of contents is included which lists the page number of each topical section.

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RANGE OF ALTERNATIVES

According to Section 15126.6 of the California Environmental Quality Act (CEQA) Guidelines:

An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.

The purpose of this section is to identify alternative project designs that would mitigate, lessen, or avoid the significant effects of the Project. To foster meaningful public discussion and informed decision-making, a range of reasonable alternatives to the Project is provided. This range includes the “No Project” alternative, the purpose of which is to allow the hearing body to compare the impacts of approving the Project to the impacts of not approving the Project. The “No Project” alternative describes what would happen if the existing land use designations remained in effect.

The Project would result in significant impacts related to aesthetics, air quality, biological resources, climate change, and transportation. Many of these impacts are significant and unavoidable, because they are the inevitable result of developing such a large master planned community. Changing the location or the layout of the Project could reduce impacts to some degree, but it is unlikely that they could be reduced to levels which are not significant without radically changing the objectives and scope of the Project. The exception is Biological Resources, in which impacts are due to the location and layout of the Project. For this reason, though Alternatives are designed to reduce impacts to many topical areas, changes to the Project layout and location focus on avoidance of biological resources.

In addition to the No Project Alternative, this EIR includes detailed analysis of two Alternatives: “Expanded Preserve” and “Expanded Footprint”. Other alternatives were considered but ultimately eliminated from detailed analysis; these are also described below.

ALTERNATIVES CONSIDERED BUT REJECTED

Multiple Alternatives to the Project were considered but ultimately rejected. CEQA Guidelines section 15126.6 states that:

The EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency’s

determination. Additional information explaining the choice of alternatives may be included in the administrative record. Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts.

An agency need not find that a project is literally impossible before it can reject an alternative as infeasible. The finding may be made based on policy considerations or project objectives (ex: *California Native Plant Society, et al. v. City of Santa Cruz, et al.*) or based on specific economic, legal, social, technological, or other considerations (CEQA Guidelines Section 15091). There is no ironclad definition of infeasibility, only guidance, and so it is left to the discretion of the lead agency to determine and explain what reasons are sufficient to exclude an alternative from analysis.

SWALE PRESERVATION ALTERNATIVE

A number of potential onsite alternatives were initially evaluated for feasibility and further detailed analysis, one of which was the “Swale Preservation Alternative.” As described in the Biological Resources chapter, the verified wetland delineation identified approximately 88.1 acres of jurisdictional waters (Table ALT-1). The Project focuses much of the avoidance area on vernal pools and seasonal wetlands, but this Alternative would focus additional avoidance on the swales and other linear waters.

Table ALT-1: Swale Preservation Wetland Impacts Compared to the Project

Wetland Type	Project		Swale Alternative	
	Impact	Avoided	Impact	Avoided
Vernal Pool	15.6	31.9	13.9	33.5
Seasonal Wetland	3.06	1.71	1.94	2.83
Seasonal Wetland Swale	13.9	4.35	8.15	10.1
Seep	0.012	0.00	0.012	0.00
Intermittent Drainage	6.36	10.4	1.12	15.8
Creek	0.00	0.174	0.00	0.174
Stock Pond	0.688	0.835	0.69	0.835
Total	39.6	49.3	25.9	63.2

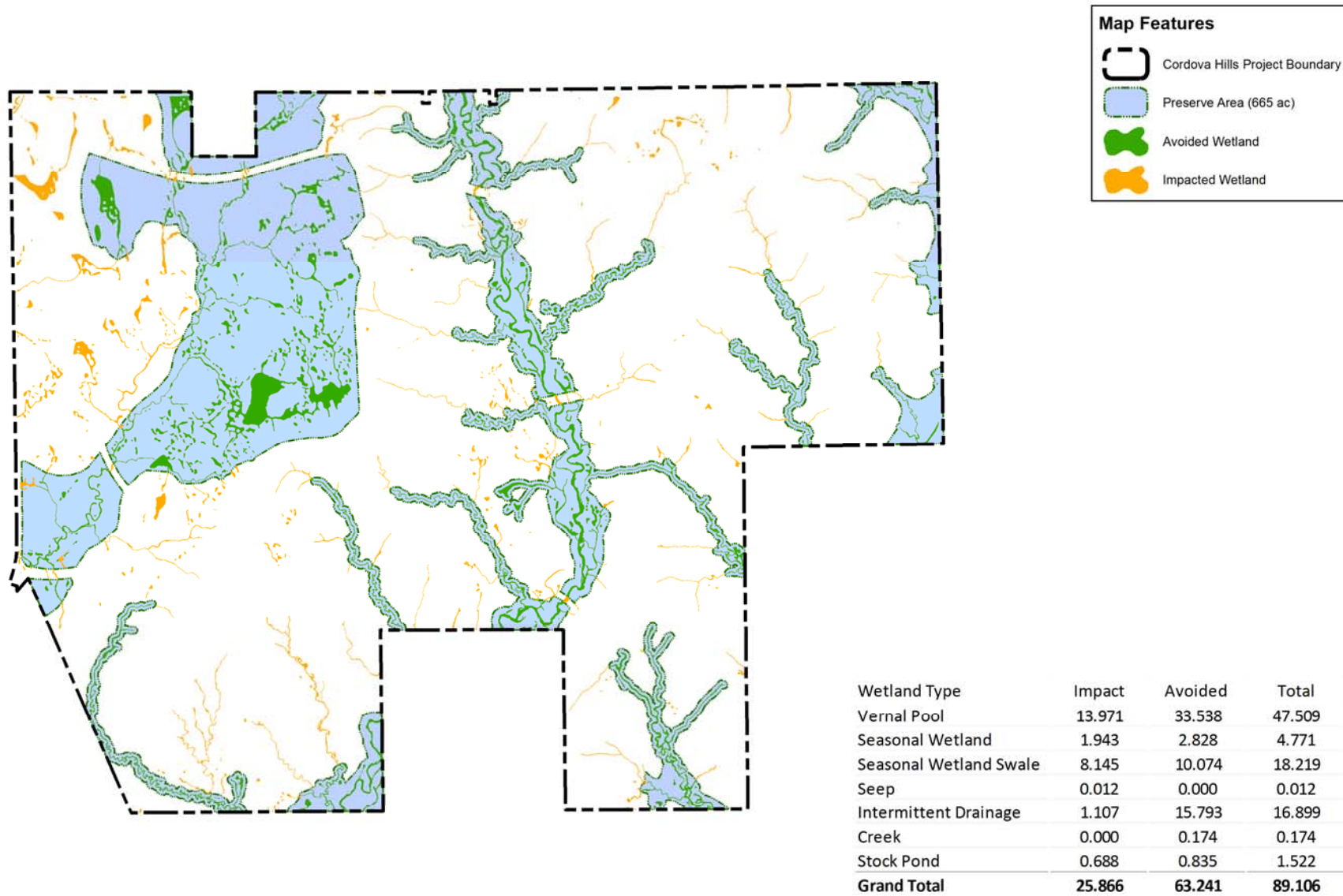
As part of the evaluation of the feasibility of potential onsite alternatives, the EIR preparers looked at whether the Swale Preservation Alternative would be able to substantially meet the basic Project objectives. As shown on Plate ALT-1, maintaining a portion of the swales connected to the primary intermittent drainages would break up the buildable areas of the site into segments, which would require significantly more retaining walls and street work associated with avoiding and working around the

retained swales. In addition to overall reductions in buildable area associated with avoidance of the features and construction of additional infrastructure, it would become more difficult to grade the larger, flatter areas which are necessary for high density development. The Project has included the higher density units on the western side of the property, where it is closest to the Town Center and the University/College Campus Center, and it is these areas which would be most affected by loss of buildable area. Thus, in addition to reducing the overall amount of land available for development, the alternative would result in a lowering of the density units on some of the remaining developable land.

The applicant indicated that the Alternative could increase infrastructure costs from \$323,030,000 to \$351,873,000. That is an increase of \$28,843,000 or approximately 9% in total infrastructure costs. In addition, the applicant estimated that the Alternative would result in a loss of 43.32 non-residential/open space acres, 52.78 acres of residential, and 30.4 acres of roads/misc./OS, for a total loss of 126.5 developable acres. The loss of 52.78 acres of residential land results in a loss of 870 dwelling units, which reduces the total unit count from 8,000 dwelling units to 7,130. While only an 11% reduction in total units, since the Alternative also increases total infrastructure costs, the overall effect would be to increase costs per unit by 22.2%. The CEQA Guidelines Section 15126.4(f)(1) provide that “among the factors that may be taken into account when addressing the feasibility of alternatives are ... economic feasibility....” A per-unit cost increase of 22.2% is a substantial increase, and was deemed infeasible.

In addition to financial issues, the segmentation of the developed areas by the preservation of many individual swales would either require a multitude of roadway overpasses (which would be even more costly than described in the calculations above) or would require substantial changes to circulation patterns which would ultimately deviate from the modified grid pattern currently proposed. Sacramento County General Plan Policy LU-120, criteria PC-5, requires interconnected streets with short block lengths, the achievement of which would be seriously hampered by the Alternative. The Swale Preservation Alternative breaks up the short block connections of streets and increases the isolation of neighborhoods throughout the plan. Unless the Alternative is able to meet PC-5, it cannot be considered for approval pursuant to General Plan policy. Both for fiscal reasons and for potential inability to meet required General Plan policy, this Alternative was rejected from further consideration.

Plate ALT-1: Swale Preservation Alternative



OFF-SITE ALTERNATIVES

Changing the location of the site is a major deviation from the intent of the Project, as a substantial amount of language in the Special Planning Area references the views of the Sierra and the landscape setting as informing and driving many of the design choices and other layout considerations of the Project. The Project site is also already owned by the applicants, and purchasing other property or entering into other development agreements in order to pursue an off-site alternative poses a substantial logistical and financial hurdle. Given that a change in location already represents a fundamental change in Project scope and poses a substantial challenge to implement, it was determined that any off-site location should allow the other basic Project designs and objectives to remain essentially intact. On-site alternatives have been designed to make more substantive changes to proposed uses and total developed area, but it was determined that the total land area and uses of the proposed Land Plan should be able to remain essentially intact for any offsite alternative.

Multiple factors were considered when investigating off-site alternatives. The Project includes approximately 1,732 acres of urban uses (exclusive of areas designated as Avoided Area, Agriculture, or Recreation), and will need an additional 107 acres of parkland, for a total of 1,837 acres. An alternative location should be able to accommodate a similar amount of development. The area also must be suitable for a mix of uses which is substantially consistent with the Project mix – both in terms of types of uses and proportions of those uses – in order to be considered consistent with the basic objectives of the Project (e.g. a site suited for industrial and commercial uses, with little residential, would be rejected).

Consistent with the intention to create an urban development, most properties lying outside of the Urban Services Boundary were excluded from consideration. The Urban Services Boundary is designed to be the ultimate edge of urban development in the County, and all long-range plans for infrastructure (such as roadways and utilities) have assumed that areas outside of the Urban Services Boundary would remain rural in nature. Development of land outside of the Urban Services Boundary would therefore result in greater environmental impacts, particularly due to growth inducement, as it would require a significant precedent-setting amendment to a central policy of the General Plan.

Another factor in the suitability of a site is the ability to obtain enough separate parcels of sufficient size. The Project area consists of ten parcels and only three owners, all of whom have elected to move forward with this single Project. Though there are many other properties within the Urban Services Boundary, these properties may not be obtainable, as there may be a multitude of separate owners who may be unwilling to sell or enter into some other agreement, the land may be within conservation easements, or the land may be in some other use which precludes urban development.

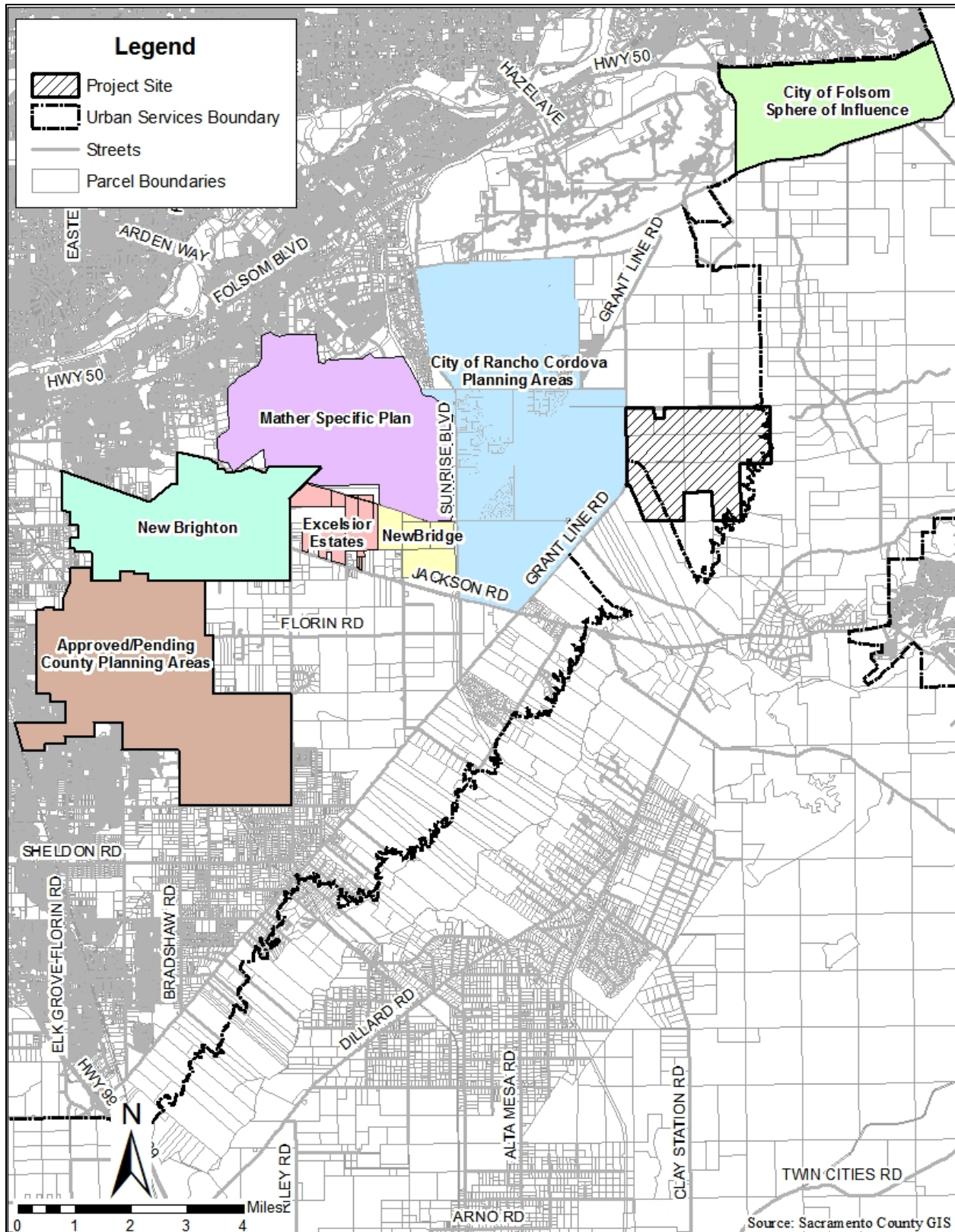
Land which is already in the process of obtaining local land use entitlements for development would be nominally suitable if the proposed mix of uses was similar to that of the Project, but then the Project would be subject to the master planning done for that

area – the SPA could no longer be part of the Project. Since many of the Project objectives relate to the development regulations contained in the SPA, land already subject to master planning proposals was excluded from consideration as both potentially infeasible to acquire and for failure to meet basic Project objectives.

The proposal for a large retail center (the Town Center) requires relative proximity to a major existing or proposed transportation corridor (such as a freeway system or thoroughfare). Alternative locations which are too far from such a corridor would make the retail component too inconvenient to reach, and would likely result in trips continuing to other retail centers which were more proximate or more accessible. To remain economically viable, the Town Center needs to be near a major transportation corridor. The following transportation corridors were identified as suitable: Highway 50, Jackson Highway (State Route 16), Sunrise Boulevard, Folsom Boulevard, White Rock Road, Prairie City Road, and Grant Line Road. Other locations were considered infeasible.

Plate ALT-2 depicts areas which may contain sufficient land area but are already the subject of existing proposed or approved master planning. New Brighton, Excelsior Estates, and NewBridge are master plan proposals that are within pre-application processing with the County of Sacramento. The City of Folsom Sphere of Influence is outside of the Urban Services Boundary, but was included because it is existing, and the negative physical consequences of the expansion would not be due to the Project. The City of Rancho Cordova Planning Areas (the depicted boundaries are approximate, not exact) include the approved Sunridge Specific Plan, the pending Rio Del Oro land plan, the pending Suncreek Specific Plan, and the pending Arboretum Specific Plan. The Sacramento County planning areas include the approved Florin Vineyard Gap Community Plan, Vineyard Springs Comprehensive Plan, and the Vineyard Station Specific Plan. The areas on the exhibit all encumber large portions of land, and all but the Mather Specific Plan are infeasible due to problems with acquisition and the inability to meet Project objectives (as described previously). The Mather Specific Plan area is further discussed below because it is a County-initiated project, and thus is within the ability of the County to amend to fit the Project, if possible.

Plate ALT-2: Locations With Existing Master Planning Proposals/Approvals



Remaining lands that could be considered include properties north of the Project site, properties between Grant Line Road and the various existing planning areas, and properties south of the City of Elk Grove (Plate ALT-3); these areas are further discussed below. Note that most of the large area north of the City of Rancho Cordova planning areas is part of a Federal Superfund site owned by Aerojet, a propulsion manufacturer, and is unavailable for development at this time.

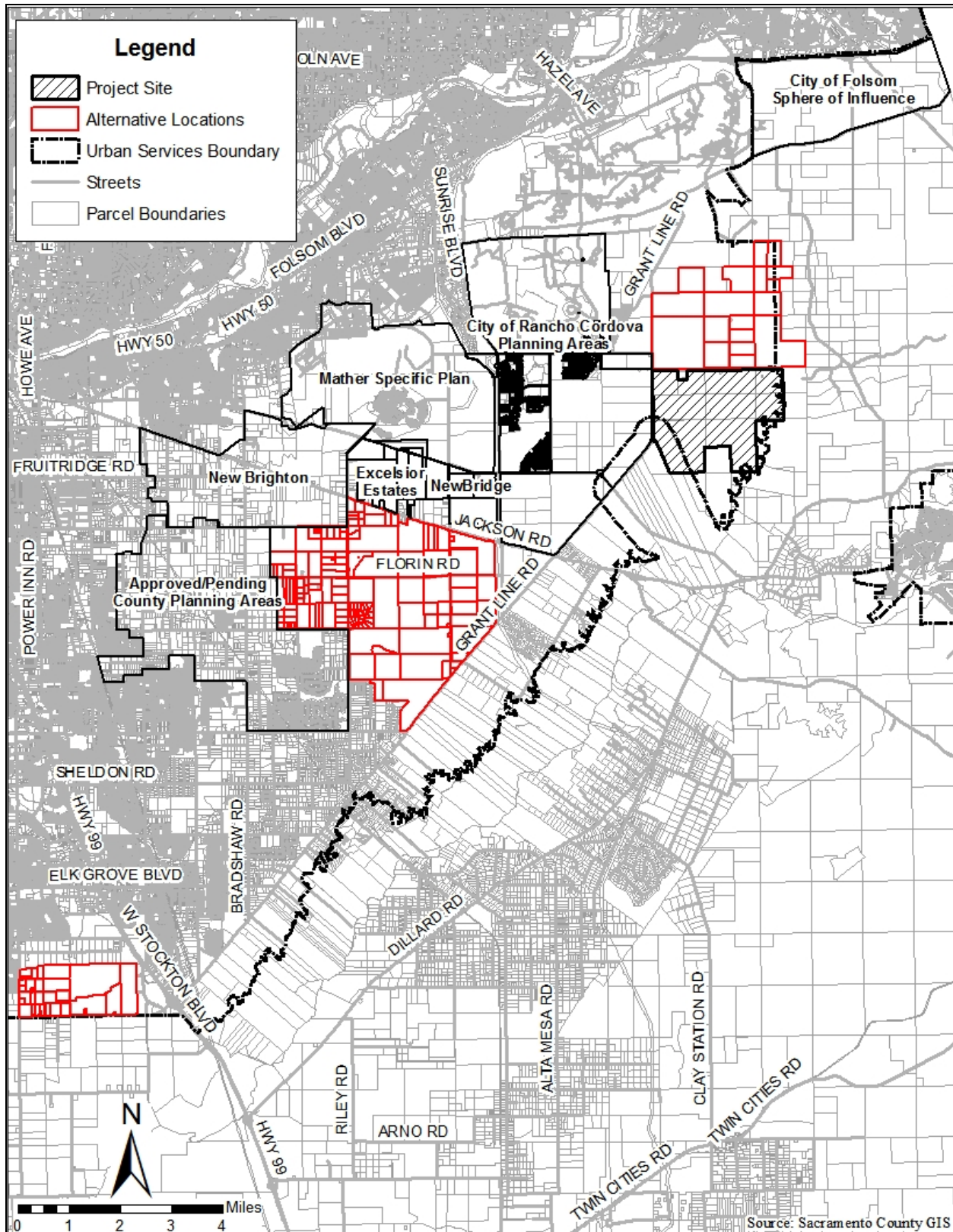
MATHER FIELD SPECIFIC PLAN

A university has been proposed within the Mather Field area – the proposed Mather Field Specific Plan (County Control Number 2006-0151) includes a 272-acre area labeled “Sports Complex” and a 593-acre area labeled “University and Village/Residential”. The Mather Field Specific Plan area contains approximately 5,700 acres of land, but a significant portion of this property is within the direct influence of Mather Airport and would be unsuitable for residential uses. A review of the proposed Specific Plan indicates that unless the proposed Specific Plan were modified, only approximately 1,000 acres would be suitable for Project uses. This figure is obtained by excluding the airport; existing development; approximately 220 acres of the land designated as Sports Complex; and areas designated as a preserve or riparian buffer, as a golf course, as Airport Commercial, as Economic Development, and as Commerce Center.

The Mather Field Specific Plan Sports Complex is approximately 270 acres, and so could accommodate the 50-acre sports park concept of the Project, but the remaining 220 acres would still be used for other sports facilities; it could not be used for other Project uses. The land designated Economic Development is excluded because it is a small “island” of uses over 2 miles away from the other available urban uses designated in the Specific Plan. The Commerce Center lands are excluded because the Specific Plan includes approximately 550 acres of commercially-designated lands, but the Project only requires approximately 230 acres. Without amending the proposed Mather Field Specific Plan, the residential development envisioned by the Project would need to be reduced by approximately 550 acres – which is more than half of the Project residential land.

In addition to a substantial reduction in the proposed residential uses of the Project, pursuing this alternative would place the commercial uses of the Town Center a minimum of one mile away from the University and residential lands. The Specific Plan locates the Sports Complex, Mather Lake, and a golf course in between the University and Village/Residential area and the Commercial Development area. As a result, the direct connectivity between the Town Center and University envisioned by the Project would not be possible. This connection was considered integral to the Town Center, as the student body represents an important spending base.

Plate ALT-3: Potential Alternative Locations



The Mather Field Specific Plan was reviewed to determine whether changes could be made to the Specific Plan uses so that the Project could be accommodated – since the Specific Plan is a County-initiated project – but it was determined to be infeasible. The Specific Plan land uses have been located in areas that are compatible with the noise and safety zones that exist around Mather Airport. Commercial uses are proposed in areas where residential land uses are incompatible, and thus the conversion of some of the commercial land to residential uses is infeasible. Likewise, the Sports Complex, golf course, and commercial uses are located in areas where those uses are compatible, and cannot be switched to bring the commercial uses closer to the residential and University area.

This alternative was considered but rejected during the scoping process due to the following factors: inability to accommodate the residential uses of the Project, inability to maintain connectivity between the retail component and the spending base, and inability to provide multimodal connections supporting non-automotive travel between important project components. On the latter point, placing the commercial and residential/university components of the Project one mile apart would result in failure to achieve objectives 1, 3, and 5 of the Project.

PROPERTY SOUTH OF ELK GROVE

This area includes approximately 1,400 acres of contiguous land, which falls below the approximately 1,800 acres needed to accommodate the Project uses. This location is also adjacent to the approved Elk Grove Promenade Mall project, which was under construction when the recession caused all work to halt. It is unlikely to be economically feasible to include the intensive retail of a large mall and the retail uses of the Town Center. Given that the mall is already approved and is partially constructed, the Town Center would need to be removed from the Project. The mall cannot be considered a replacement for the Town Center, because while the Elk Grove Promenade Mall is designed to be a more standard retail-only development, the Town Center is designed to be a mixed use development consisting of retail, office, and residential. Given that this location does not include sufficient land area and would require the removal of a major component of the Project, this site was eliminated from detailed consideration.

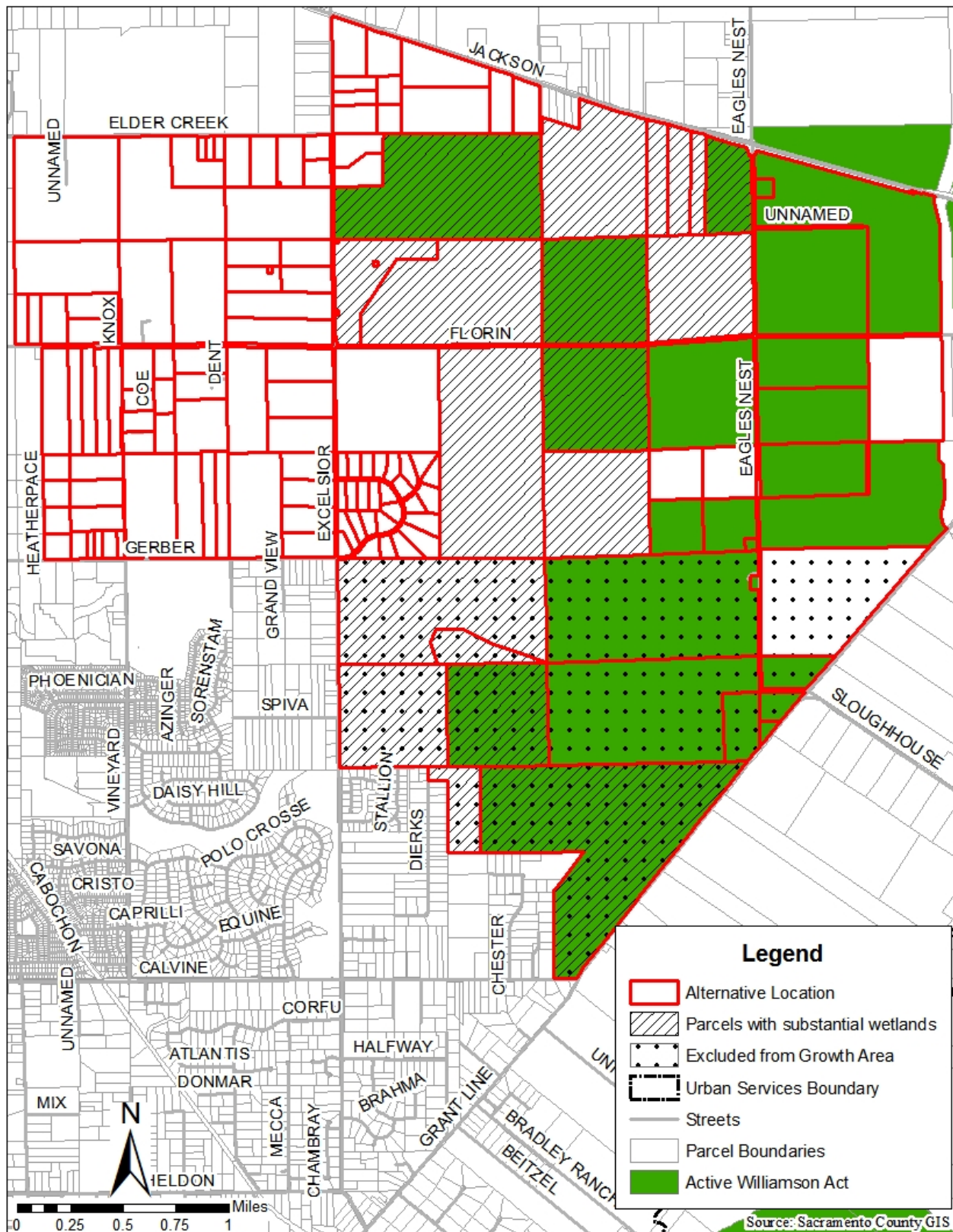
PROPERTY BETWEEN GRANT LINE ROAD AND OTHER PLANNING AREAS

This area includes approximately 7,500 acres, 153 different parcels, and over 100 different owners (Plate ALT-4). Not all of this land would be needed, so an analysis was done to identify a more specific area to consider. Review of aerial photography indicates that significant land area includes wetland complexes; some of this property is already owned by organizations such as the Sacramento Valley Conservancy and some is being considered for inclusion in the anticipated Draft South Sacramento Habitat Conservation Plan as preserve area or protected area. Plate ALT-4 shows the land areas with the densest concentrations of wetlands. Other areas also include wetlands, but they do not appear to be as densely concentrated or as intact. In addition, the land

south of Florin Road has been the subject of discussion before the Sacramento County Board of Supervisors, for potential inclusion in the Draft 2030 General Plan as a new growth area, and was ultimately excluded from consideration. Notwithstanding the change in growth management strategy which was approved subsequent to this decision-making, it remains questionable whether this decision would be reversed for a Project alternative. The final major constraint is the presence of substantial amounts of land under active Williamson Act contract. These various constraints exclude most of the property from consideration on the dual basis that development here would not reduce impacts to wetlands and may be infeasible to develop due to the presence of multiple Williamson Act contracts and other land use restrictions.

Excluding the existing subdivision at the corner of Excelsior and Gerber Roads, the remaining land area that is not encumbered by significant wetlands or Williamson Act contracts encompasses approximately 2,300 acres and 80 parcels. Various parcels are being used for the operation of businesses, such as a plant nursery and an equestrian facility, but most are agricultural or agricultural-residential parcels with single-family homes. The significant number of parcels and the fact that many of them have single-family homes would make acquisition of the land infeasible both due to logistical and financial reasons. The other option would be to enter into a development agreement with the property owners, which would be similar to the model used to develop the Florin Vineyard Gap Community Plan. This is also logistically challenging, and in order to work would require that the entire SPA be revisited in consultation with the many different property owners. It is unlikely that the SPA and the Project objectives would remain intact as a result of this process. Furthermore, each owner would be operating under separate financial constraints and under separate timeframes, and thus it would be infeasible to develop large, coherent pieces at the same time. This alternative was ultimately rejected due to failure to meet Project objectives and due to logistical infeasibility.

Plate ALT-4: Constraints on Property West of Grant Line Road



PROPERTY NORTH OF THE PROJECT

This area includes parcels which are north of the Project site, but excludes land operated as an aggregate mine by Teichert. There are eighteen parcels in this area, for a total of approximately 3,200 acres. Approximately 862 acres of this land is currently owned by the Project proponents. Five of the eighteen parcels include some land outside of the Urban Services Boundary, which would not be available for urban development; removing this area, which is approximately 370 acres, leaves 2,830 acres for development. This is sufficient land to accommodate the Project uses, and is located along the same major transportation corridor as the Project. Aside from the Project proponents, there are eight property owners of this land. It may be difficult to acquire the remaining land or otherwise enter into development agreements with the owners.

Aside from some difficulty with acquisition, the primary issue with this site is that development of this site would not result in lesser environmental impacts than development of the Project site. This alternative site is adjacent to the Project site, and as such shares most of the same constraints and issues described for the Project. Review of aerial photography clearly indicates that the property north of the Project site also includes plateau areas with dense aggregations of vernal pools, as well as intermittent drainages, seasonal wetlands, and other features. In addition, the only two parcels adjacent to Grant Line Road (totaling 960 acres) are within active Williamson Act. There are no existing public water or sewer lines proximate to the site. Though the site is farther from the Kiefer Landfill, it is adjacent to an active mining area. Ultimately, it was clear that this alternative would not result in a reduction in significant impacts, and so was eliminated from more detailed consideration.

Note that although relocating the entire Project to these northern properties has been rejected, a detailed analysis has been included for an alternative that would include a portion of the property to the north (Expanded Footprint Alternative).

DESCRIPTION OF ALTERNATIVES

NO PROJECT

The No Project alternative may either be considered to be maintenance of the existing condition, development to the degree that would be allowed without any further discretionary review or entitlements, or an in-between version. In the case of the Project site, there is little difference between these versions of the No Project. The site is zoned AG-80 (Agricultural properties of a minimum of 80 acres in size), and encompasses ten parcels. In the No Project Alternative, each of these parcels could be developed with one single-family home. Given the rural nature of the area, it is assumed that urban services such as public water and sewage disposal would not be used, and that homes would rely on individual wells and septic systems. Though analyzed as though up to ten homes would be constructed, it is probable that if homes

were built there would be fewer than this number. Many of the parcels do not have access to existing roadways, and it would be costly to build roads to provide that access. It is more typical in Sacramento County to see a few of the parcels containing homes for the primary property owner(s) and relatives, while the “back” areas without frontage remain undeveloped agriculture. Thus, grazing of the majority of the land would be presumed to continue.

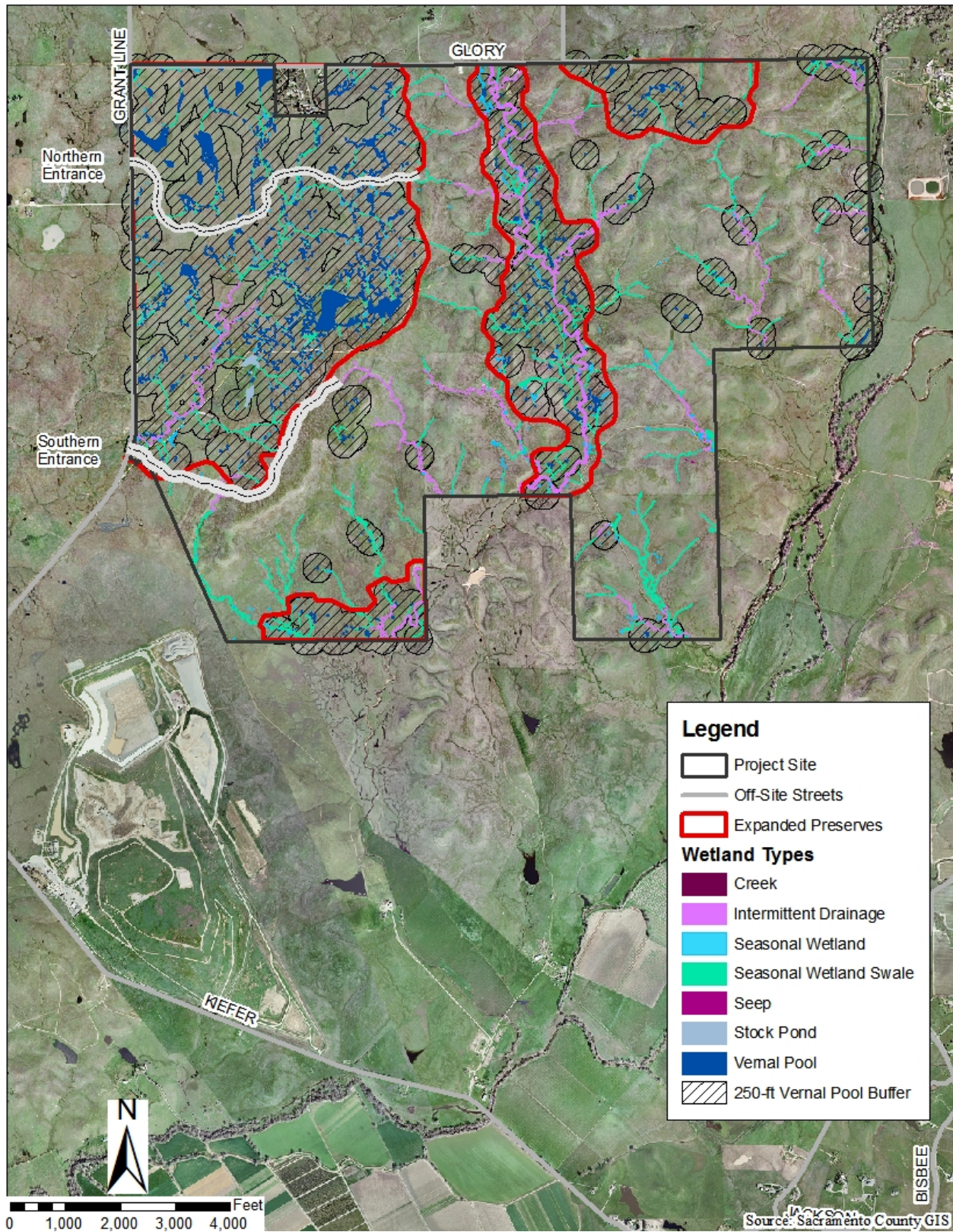
It is conservatively assumed that each home could involve up to one acre of land being taken out of agricultural use; this assumption includes access roads, the homes and appurtenant improvements, landscaped area, and areas fenced in for gardens and/or family pets. In the worst case, this could result in a total of ten acres of land being encumbered.

ALTERNATIVE 1: EXPANDED PRESERVES

This Alternative would place approximately 1,142 acres into preserves primarily by increasing the size of the western preserve area, while simultaneously reducing the developable area to 1,527 acres. The proposed preserve boundaries and Alternative’s revised access points are shown in Plate ALT-5. The preserve boundaries are defined by the standard 250-foot buffer typically requested around vernal pools in order to avoid both direct and indirect impacts (refer to the Biological Resources chapter). Note that in this alternative these areas are preserves, not avoided areas, as the Alternative includes the placement of the areas into permanent preservation/conservation easements.

The westernmost preserve is approximately 748 acres (108 acres is outside the USB), the preserve around the central site waterway is approximately 246 acres, the preserve in the northeastern area is approximately 88 acres, and the preserve in the southwestern portion of the site is approximately 60 acres. Just as with the proposed project, there would be an opportunity to create small linear preserves around some of the seasonal wetland swales and intermittent drainages to create a connected mixed-use trail system. Access into the Project site from Grant Line Road would be reduced from three locations to two locations; the central access would be removed, leaving a northern and southern entrance. As shown on Plate ALT-5, access to the site must cross the westernmost vernal pool preserve, but the two conceptual locations were chosen in order to minimize vernal pool disturbance.

Plate ALT-5: Expanded Preserves – Wetland Preserves and Access Points



Enlarging the westernmost preserve will require the removal of the proposed Town Center, resulting in the removal of 966,779 square feet of commercial/retail uses. Relocation of the Town Center elsewhere was considered, but this poses two difficulties. Firstly, this area was located along Grant Line Road because its regional retail and commercial mixed uses and densities can only be supported if it is located in a very “visible” area – i.e. along a high-capacity transportation corridor. A regional mixed use retail and commercial center is not likely to be viable if it is not highly visible and accessible. It is conceivable that the uses could be amended and rescaled to serve as a more local destination shopping area, which would attract users less through visibility than through local reputation; however, relocating the entire town center interior to the Project would require the loss of 200 acres of residentially-designated lands. The relocation would remove all 156 acres of the Ridgeline Village as well as another 50 or so acres of the University Village component. The result would be a project with a significantly unbalanced ratio of commercial to residential product. For these reasons the Alternative assumes that the Town Center is removed without replacement elsewhere.

Though this Alternative does represent a fundamental Project change, and would result in the failure of the Alternative to meet one of the primary and basic objectives of the Project, it is the only design which would avoid nearly all impacts to vernal pools (some impacts may occur as part of construction of the access road across the preserve). Project impacts to wetland resources are significant and unavoidable, and also result in significant and unavoidable impacts to special status species such as vernal pool branchiopods. For this reason, the Expanded Preserves Alternative has been included for detailed analysis, despite conflict with Project objectives.

The expansion of the various preserve areas will also require the removal of other portions of the Project, including approximately: 23 acres of the Academic Zone of the University/College Campus Center, 20 acres of the Sports Park, 9 acres of medium density residential land within the Ridgeline Village, 10 acres of high density residential land within the Ridgeline Village, 3 acres of low density residential land within the Ridgeline Village, 29 acres of medium density residential land within the University Village, 31 acres of low density residential land within the East Valley Village, and 39 acres of Public/Quasi-Public within the East Valley Village. This is conceptually shown on Plate ALT-6. These boundaries are intended to be conceptual, not exact, so the figures described in this paragraph, above, are approximate and represent the major changes.

The proposed Land Use Plan describes the densities and units assumed within each of the proposed large lots of the Project. Using this information, it can be calculated that Expanded Preserves will result in the removal of all 1,750 units from the Town Center, approximately 300 units from the Ridgeline Village, 250 units from the University Village, and 125 units from the East Valley Village. It will also reduce the proposed High School site to 39 acres, eliminate an elementary school site (which is in the Town Center), reduce the Athletic Zone of the University/College Campus Center to 38 acres, and reduce the Academic Zone of the University/College Campus Center to 45 acres. Though the Sports Park is reduced to 25 acres by the preserve expansion, it is

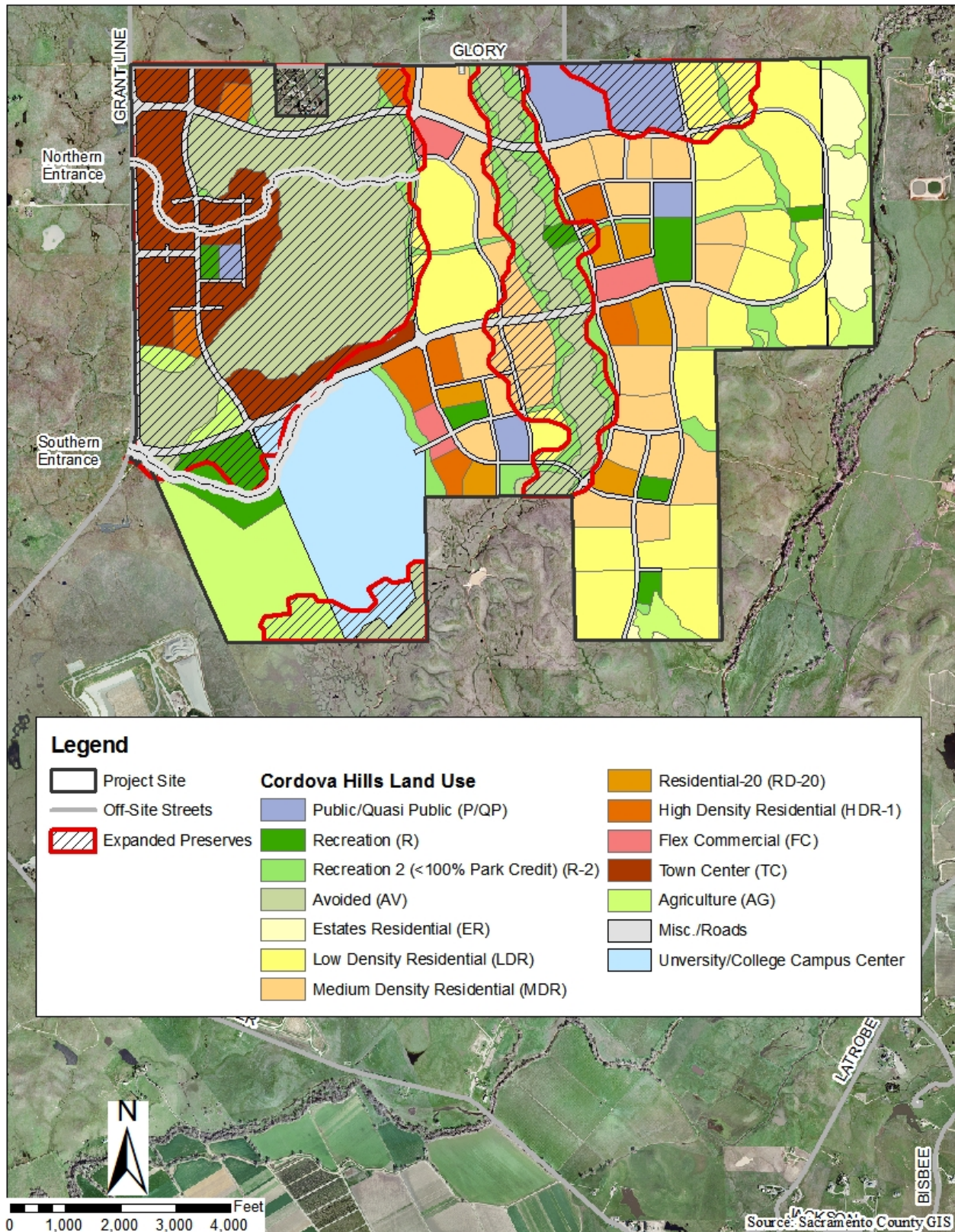
assumed that the park will simply be moved farther south and that the full 50-acre park will be developed.

One of the core objectives of the Project is to achieve high on-site residency rates for future college students. To offset the loss of 29 acres of medium density residential lands in the University Village (which is potential student housing), this Alternative assumes that approximately 29 acres of the Ridgeline Village low density residential lands will be medium density residential. The table below (Table ALT-2) provides the residential densities expected as part of Expanded Preserves.

Table ALT-2: Expanded Preserves Residential Unit Totals

Village	Approximate Number of Units	Approximate Net Residential Acres	Approximate Net Density
Ridgeline Village	945	90	11
University Village	1,235	70	18
Estates Village	500	125.8	4
East Valley Village	1,615	165	10
Creekside Village	1,540	192.4	8
University/College Campus Center	1,010	55.5	18
<i>Project Total</i>	<i>6,845</i>	<i>698.7</i>	<i>10</i>

Plate ALT-6: Expanded Preserves – Preserve Areas and Project Land Uses



ALTERNATIVE 2: EXPANDED FOOTPRINT

Alternative 2 includes the enlarged preserves of the Expanded Preserves Alternative but also expands the total Project footprint to include an 862-acre northern property referred to as Grant Line Pilatus (Plate ALT-7); again, these areas are placed within a permanent preservation/conservation easement. Portions of the Project site and the northern property are owned by separate limited liability companies, some of which share a common ownership. This Grant Line Pilatus property was a part of the original project application submitted to the Sacramento County Planning and Community Development Department. It was subsequently removed from the proposal prior to the Sacramento County Board of Supervisors decision to accept the application. Before that decision was made, the applicants had already submitted an application for a Clean Water Act Section 404 permit to the United States Army Corps of Engineers. That application included the Grant Line Pilatus property. As a result, during the Notice of Preparation Agency Scoping Meeting the United States Army Corps of Engineers and the United States Environmental Protection Agency specifically requested that the impacts of including this northern property be assessed in an Alternative.

CEQA Guidelines section 15126.6 states that the dual purpose of an Alternative is to “substantially lessen any of the significant effects of the project” and to “consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation”. Despite the fact that inclusion of the Grant Line Pilatus property increases the physical footprint of the site and thereby expands the area of impact, this Alternative has been included in order to achieve the goal of fostering informed decision making and at the request of the federal agencies.

The total area of this Alternative is 3,531 acres, with 2,016 acres designated as developable area and 1,515 acres within preserves. With this design, it becomes possible to relocate a modified Town Center into the Ridgeline Village area, while the housing from Ridgeline Village can be moved into the Grant Line Pilatus property. This still creates a problem with visibility, as the Town Center will not be immediately accessible from Grant Line Road, but the commercial and residential lands will remain balanced, and the Town Center will still be supported by the university population. The Town Center of this Alternative is also smaller, recognizing that the traffic to the retail will be lower.

The Grant Line Pilatus property also includes wetlands and linear waterways; as part of this Alternative, a system of preserves was identified for the Grant Line Pilatus property which relies on the 250-foot buffer typically requested around vernal pools in order to avoid both direct and indirect impacts (refer to the Biological Resources chapter). Approximately 373 acres of the 862-acre Grant Line Pilatus property would be within preserves, while the remaining 489 would be potential development area.

Plate ALT-8 shows the conceptual locations of the Alternative 2 Town center, the preserve areas, and the area within the Grant Line Pilatus property potentially available for development. A conceptual layout of uses on the northern parcel is not shown, but the approximate uses within these areas are described herein.

Plate ALT-7: Expanded Footprint – Wetland Preserves and Access Points

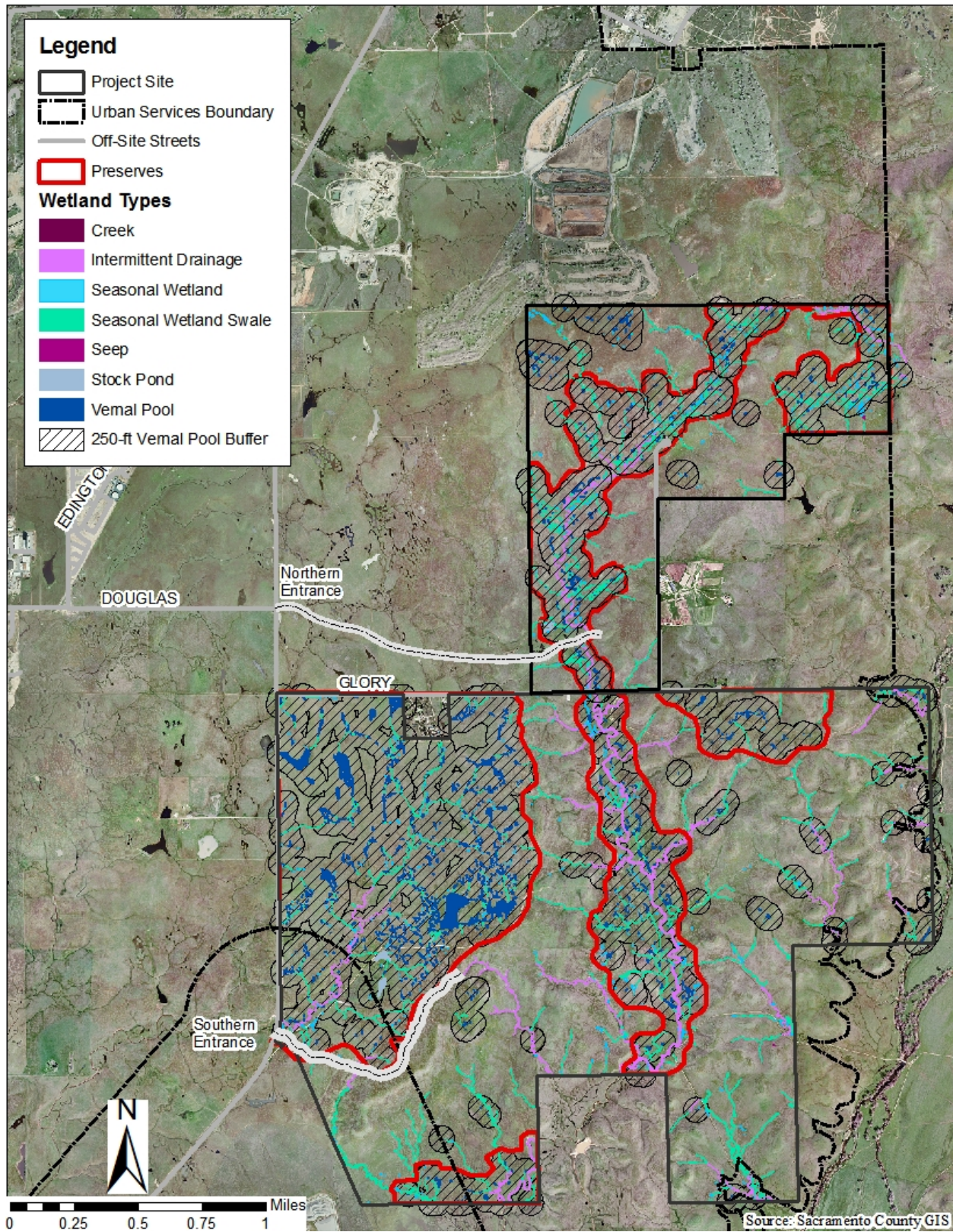
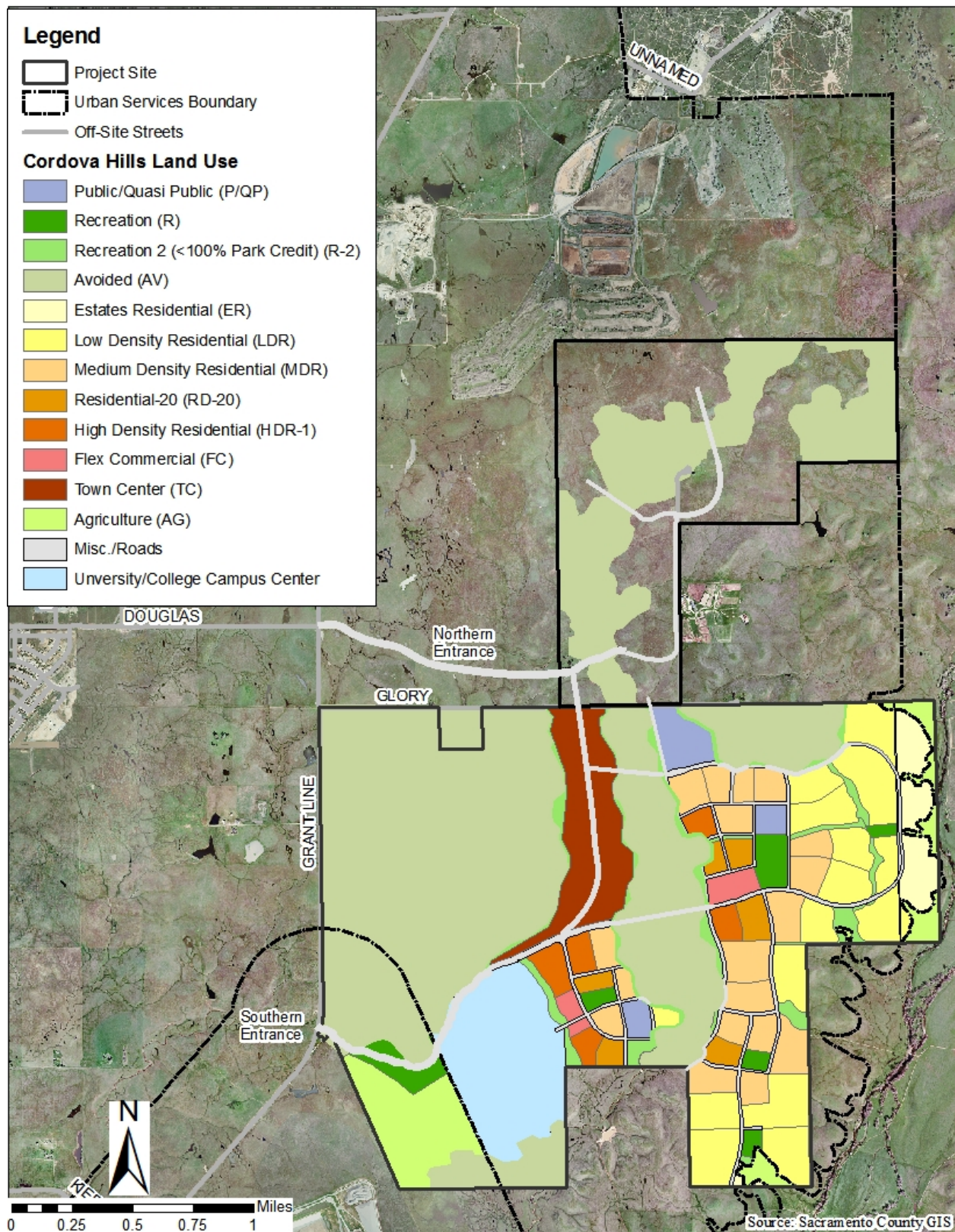


Plate ALT-8: Expanded Footprint – Conceptual Development Areas



The modified Town Center encompasses approximately 150 acres, as compared to the more than 200 acres encompassed by the Project Town Center. As with the Project Town Center, the Alternative 2 Town Center will include retail, entertainment, employment, and residential uses but the ultimate mix will depend on what is delivered by market forces and development interests. While the Project Town Center is envisioned as a regional center, the Alternative 2 Town Center will not be on a major transportation corridor and thus will only serve the Project area and some portion of adjacent future development (such as areas of Rancho Cordova to the west of the Project). The Alternative 2 Town Center cannot support the same total commercial square footage or density as the Project. At the maximum, it is assumed that the Town Center buildout will include 650,000 square feet of commercial and office uses and approximately 1,200 residential units (all HDR-1 or MDR, high or medium density residential), which is approximately 2/3 of the amount assumed for the Project (which is 1,750 units).

Relocating the Town Center would displace all 995 units of residential development within the Ridgeline Village; these units will be accommodated in the northern parcel. It is assumed that the northern parcel design would follow roughly the same design as the overall community, with some Estate Residential located at the parcel margins or within areas surrounded on three sides by preserves, Medium Density Residential located on the southern end where it is closer to the Town Center and proposed high school site, and Low Density Residential within the intervening areas.

Alternative 2 assumes that of the 995 units, approximately 100 would be Estate Residential (± 50 acres), approximately 350 would be Low Density Residential (± 120 acres), and approximately 545 units would be Medium Density Residential (± 120 acres). It is also assumed that at least one additional school and two parks will be located in the northern parcel, to replace the school (± 15 acres) and two parks (± 20 acres) removed by the preserve expansion. The proposed high school site would be expanded into the northern parcel by approximately 40 acres to replace the area removed as part of the preserve expansion. These developments leave 124 acres for roads, public spaces, open space corridors, linear parks, multi-use trail corridors, and buffer areas.

In addition to the above land use changes, the northern site access has also been shifted to an off-site location as part of this Alternative, to extend from the intersection of Grant Line Road and Douglas Road. This would be a logical roadway extension of Douglas Boulevard to the east and would be more consistent with the spacing and configurations that would be needed if Grant Line Road were to become an expressway as part of the Connector project (refer to the Transportation and Circulation chapter). The new northern entrance would require gaining access over off-site property that is not owned by the Project proponents. Review of aerial photography clearly indicates that the area through which the roadway will pass contains a vernal pool area of similar density to the Project site. Thus, whether the access is located on the site as proposed through the Project or off-site as proposed through Alternative 2, wetland impacts due to construction of this road are likely to be similar.

SUMMARY COMPARISON OF ALTERNATIVES

The Expanded Preserves Alternative includes approximately 77% of the Project population while the Expanded Footprint Alternative includes approximately 90% of the Project population. While the Project includes 18% of the land within avoided areas, the Expanded Preserves Alternative includes 43% of the land within avoided areas and the Expanded Footprint includes 57% of the land within avoided areas. The general differences between the Project and the Alternatives are included below in Table ALT-3.

Table ALT-3: Summary of Alternative Development Assumptions

	Number of Dwelling Units	Population	Non-Residential Square Footage	Acreage Designated for Urban Uses	Acres Avoided
No Project	10	27	--	0	2,659
Expanded Preserves	6,845	19,690	382,640	1,527	1,142
Expanded Footprint	8,045	22,850	1,032,640	2,016	1,515
Project	9,010	25,419	1,349,419	2,175	493

IMPACT ANALYSIS

AESTHETICS

No PROJECT

IMPACT: DEGRADATION OF EXISTING VIEWS AND VISUAL QUALITY

The existing viewshed is described in the Aesthetics chapter of this EIR. Three of the ten parcels on the site have frontage on Grant Line Road and include the plateau area. Houses constructed on these parcels would be visible to the Grant Line Road and Douglas Road/Rancho Cordova viewer groups. Adding three homes to this view would reduce the intactness of the site, but given that most of the land area would remain unaffected these encroachments would have minimal impact. More land area is visible from the residences to the north, but again, most of the viewshed would remain unencumbered by encroachments. It is likely that homes would not be visible at all from either Kiefer Road or Latrobe Road. No Project impacts to the existing visual character and quality of the site would be *less than significant*.

IMPACT: NEW SOURCES OF LIGHT OR GLARE

The existing site does not include any structures, and thus there are no sources of light or glare. Either this condition would be maintained, or up to ten homes could be constructed (one on each of the ten parcels). In the latter case, each home would be surrounded by large areas of open land, consistent with a rural landscape. Such

minimal development would not generate significant light or glare, and impacts would be *less than significant*.

EXPANDED PRESERVES

IMPACT: DEGRADATION OF EXISTING VIEWS AND VISUAL QUALITY

In this alternative, none of the proposed development would occur on the plateau area adjacent to Grant Line Road, but would instead occur on the portions of the property which are not currently visible by either Grant Line Road or the Douglas Road/Rancho Cordova viewer groups. Views of the Sierra Nevada would remain largely unimpeded, and the plateau area, which extends nearly a mile into the site, would remain intact. This would maintain most of the continuity of the existing views. It is probable that the tops of the larger structures would be visible in the distance, but this would be similar to the Project impacts described for the Latrobe Road viewer group. In the existing condition, vividness is rated 2 (low), while unity and intactness is rated 6 (high), for an average rating of 5 (moderately high). After the Alternative, unity and vividness would remain unchanged, while intactness would be reduced to a rating of 4 (moderate), for an average rating of 4 (moderate). This reduction is not considered substantial; the impacts to the Douglas Road/Rancho Cordova and Grant Line Road viewer groups would be *less than significant*.

The Expanded Preserves Alternative impacts related to the Kiefer Road and Latrobe Road viewer groups would remain very similar to Project impacts. Though larger preserves are included, the Alternative would still involve substantial urban development on the eastern and southern areas of site; these are the areas that would be most visible from Kiefer Road and Latrobe Road. As concluded for the Project, due to distance from the site, intervening landforms blocking views of the site, and lack of viewer sensitivity (for viewers at the Kiefer landfill), impacts are *less than significant*.

The residential area to the north of the Project would not be as close to other residential uses due to the inclusion of an avoided area adjacent to the proposed high school. Though this preserve would lessen the impact of the development to a certain degree, the majority of the viewshed would be altered to accommodate urban development. Though slightly improved, the improvement would not be substantial enough to change the quantification already provided for Project impacts (visual quality would be reduced from a rating of moderately high to a rating of moderately low). Impacts to this viewer group would be significant, and given that no mitigation exists that would substantially reduce impacts, impacts would be *significant and unavoidable*.

IMPACT: NEW SOURCES OF LIGHT OR GLARE

The new source of nighttime lighting would be farther from many existing residential areas, and the avoided areas would be much larger, which would make the impact less substantial than Project impacts. Nonetheless, placing more than 6,000 new homes and nearly 400,000 square feet of commercial uses in a rural area will introduce a

substantial new source of nighttime lighting. For the same reasons articulated for the Project, impacts would be significant. Mitigation Measure AE-1 included for the Project would also apply to this alternative, but impacts would remain *significant and unavoidable*.

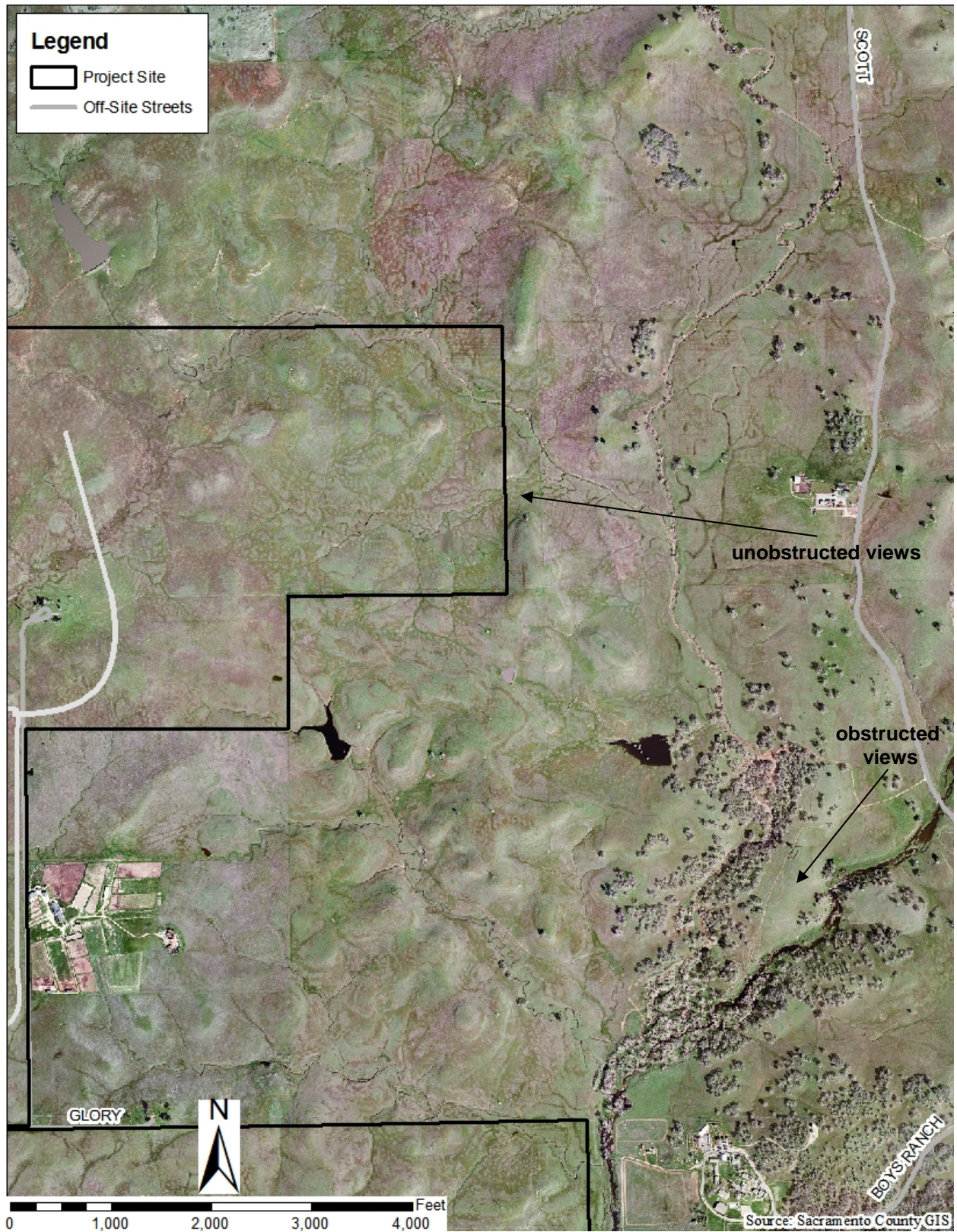
EXPANDED FOOTPRINT

IMPACT: DEGRADATION OF EXISTING VIEWS AND VISUAL QUALITY

From the Douglas Road/Rancho Cordova and Grant Line Road viewer groups, the impacts of the Expanded Footprint Alternative would be very similar to the impacts of the Expanded Preserves Alternative; impacts would be *less than significant*. Though additional development would occur to the north, this would also be at a lower elevation than the viewer groups, taking place in lower areas east of the plateau edge along Grant Line Road. Impacts to the Kiefer Road and Latrobe Road would also be the same as those described for the Expanded Preserves Alternative; impacts would be *less than significant*. There would be no impacts to residents to the north, because these residences exist on the property that would be developed, and would no longer be present. There would be a new viewer group affected, however, and this would be drivers along Scott Road plus one residence on Scott Road.

The Project and other alternatives do not impact Scott Road viewers, because there are landforms and trees which block views of the main site. Extending development to the north would change this circumstance, bringing development closer to Scott Road in an area where the topography rises up from the roadway toward the Alternative site. (Plate ALT-9). Views from this location are very similar to those from Kiefer Road and Latrobe Road. Where the site is visible the foreground is composed of rolling, grassy hills dotted with trees. The variations in topography and the mature oak trees in the landscape increase the diversity of the views by introducing additional colors, varying the lines and angles of the horizon, and introducing multiple textures (smooth grass, rough trees). Though the vividness of this view is higher than from either Douglas or Grant Line Road, it is still moderate-to-low; the view is not highly distinctive or memorable. From most perspectives there are few negative encroachments in the view; only some fencelines and other minor structures. Vividness is rated 2, intactness is rated 6 (high), and unity is rated 6, for an average of 5 (moderately high).

Plate ALT-9: Location of Alternative Relative to Scott Road



Though site development would be visible to drivers and the residence along Scott Road, the nearest development edge would be approximately 4,300 feet from the viewpoint. Photosimulations were not development for the Alternative, but given the similarities in topography and distance, impacts would be similar to those described for viewers along Latrobe Road. Where it was visible, the development would give a rough edge to the horizon, but would not be particularly obtrusive or distinctive; vividness would not increase. Observers passing by along the road may perceive the Alternative mainly as a rough, multi-hued edge to the horizon, which means that unity will not appreciably decrease. People who stop to observe and the residents of the single affected home may take more notice of the individual buildings and other Project components, but will still be at too great a distance to make out clear details. Intactness will decrease slightly, since it will be recognizable that the new feature in the landscape is of human construction. Ratings for vividness and unity will remain the same as existing condition ratings, but intactness will decrease to 5 (moderately high), for an average rating of 4 (average). Though the Project will decrease visual quality from moderately high to average, this is not a large drop in quality; visual impacts to this viewing location are *less than significant*.

IMPACT: NEW SOURCES OF LIGHT OR GLARE

Impacts would be similar to the Expanded Preserve Alternative. Though the new sources of lighting would be farther from residential areas, placing more than 8,000 new homes and approximately 650,000 square feet of commercial uses in a rural area will introduce a substantial new source of nighttime lighting. For the same reasons articulated for the Project, impacts would be significant. Mitigation Measure AE-1 included for the Project would also apply to this alternative, but impacts would remain *significant and unavoidable*.

AGRICULTURAL RESOURCES

No PROJECT

Either the existing condition would be maintained, or single-family homes would be constructed on each parcel. In either case, the parcels would remain in their present sizes and existing agricultural activities could be maintained. The placement of individual homes on large parcels is consistent with agricultural areas, which often include residences associated with the farms, and would not conflict with adjacent agricultural activities. It is permissible to build a home on land under Williamson Act contract, as long as the home is part of the agricultural use of the land. The No Project would not conflict with existing agricultural designations or use, conflict with a Williamson Act contract, or convert agricultural lands to non-agricultural uses.

EXPANDED PRESERVES

IMPACT: CONFLICT WITH EXISTING AGRICULTURAL USE AND ZONING

The Expanded Preserves Alternative would result in less urbanization of the existing grazing land than the Project, and otherwise the impacts would be similar to that of the Project. None of the land is designated as Prime Farmland, and although some soils are prime when irrigated none of the site is irrigated. In this alternative, most of these potential prime soils would be retained within a preserve, though could not be farmed. The land does not support intensive agricultural investment. The Alternative would have slightly less potential for conflicts with existing off-site agricultural uses, given that some of the proposed residential uses would be removed, but impacts are not significant regardless. Project mitigation measure AG-1 is nonetheless recommended to apply to this Alternative, requiring deed notices of the Right-To-Farm Ordinance. For the foregoing reasons, impacts are *less than significant*.

IMPACT: CONFLICT WITH WILLIAMSON ACT CONTRACT

Impacts related to the Williamson Act would be identical to those described for the Project. In order to approve the subdivision map, the approval action would either need to be deferred until February 2013 (within three years of nonrenewal) or the Board of Supervisors would need to make findings that the parcels can maintain agricultural use. In order to approve the rezoning, the approval action would need to stipulate that the zoning agreement will not become effective until 2016, and Mitigation Measure AG-2 would be included to ensure continuance of agricultural use on the site until 2016. Provided these actions take place, the Project would be consistent with the provisions of the Williamson Act; impacts are *less than significant*.

IMPACT: CONVERT PROTECTED FARMLAND TO NON-AGRICULTURAL USES

The 8.6-acre Unique Farmland area would be located within the expanded preserve area, as would some of the Grazing Land located outside of the USB. Though this designated farmland area inside the preserves would not be disturbed by construction, its location within the preserved area would preclude unrestricted farming activities. As described for the Project, it should be assumed that all 255.6 acres affected will require mitigation pursuant to Mitigation Measure AG-3. With mitigation, impacts related to the conversion of farmland are *less than significant*.

EXPANDED FOOTPRINT

IMPACT: CONFLICT WITH EXISTING AGRICULTURAL USE AND ZONING

The added northern properties are zoned and designated for the same use designations as the Project area: Agricultural 80 (AG-80) by the Sacramento County Zoning Code and General Agriculture by the General Plan. The Alternative would rezone the land to SPA and redesignate the land for a variety of urban General Plan uses (Low Density Residential, Commercial and Offices, etc). The Alternative would have a higher

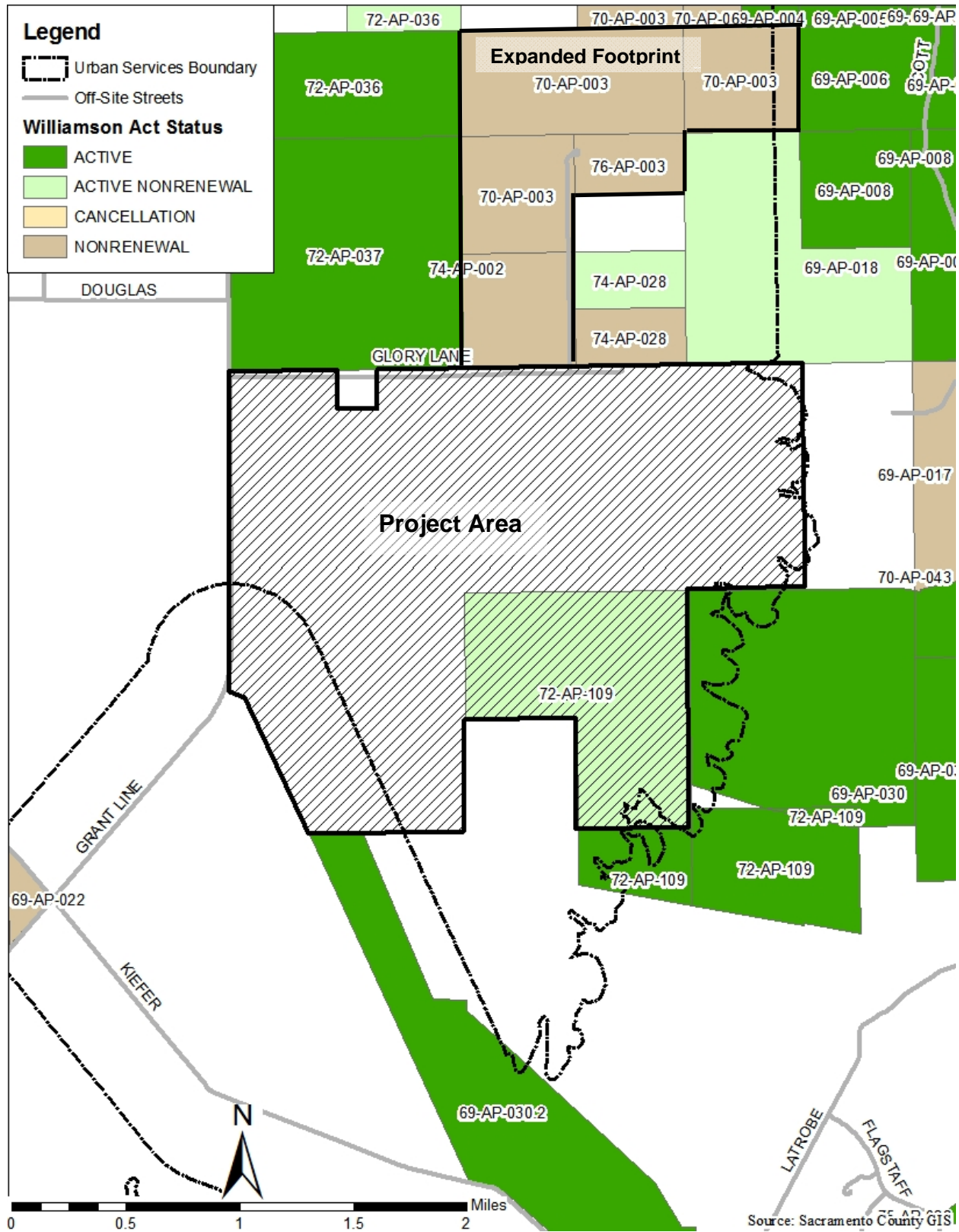
potential for conflicts with existing off-site agricultural uses, given that it would include more area interfacing with grazing land and would include a northern access road crossing grazing land which is not included as part of a development proposal. The road would have the potential to isolate the agricultural land between the roadway and the project development to the south; this area which would be isolated is approximately 100 acres of land designated as Grazing Land. Though 100 acres is of sufficient size to support grazing operations, its relative isolation may result in cessation of grazing. This is dependent on how easily the grazing stock could be moved across the roadway, and on factors such as whether there is a water source on the isolated acreage. Conservatively assuming that the land falls out of agricultural use, and assuming the land to the north has similar productivity as the Project land, the loss of 100 acres would reduce the productivity of the total contracted area by only seven animals. This potential conflict is not considered substantial. Project mitigation measure AG-1 is recommended to apply to this Alternative, requiring deed notices of the Right-To-Farm Ordinance. For the foregoing reasons, impacts are *less than significant*.

IMPACT: CONFLICT WITH WILLIAMSON ACT CONTRACT

Though historically all of the parcels in the added northern area were the subject of Williamson Act contracts (70-AP-003, 74-AP-002, and 76-AP-003) nonrenewal was filed for all of the contracts, and became effective on December 6, 1991; August 12, 1991; and May 5, 1993, respectively (refer to Plate ALT-10). Alternative impacts related to the Williamson Act lands within the Alternative boundaries would be identical to those of the Project. In order to approve the subdivision map, the approval action would either need to be deferred until February 2013 (within three years of nonrenewal) or the Board of Supervisors would need to make findings that the parcels can maintain agricultural use. In order to approve the rezoning, the approval action would need to stipulate that the zoning agreement will not become effective until 2016, and Mitigation Measure AG-2 would be included to ensure continuance of agricultural use on the site until 2016. Provided these actions take place, the Project would be consistent with the provisions of the Williamson Act.

The inclusion of the northern access must also be considered, because the parcel north of the site (over which the road would travel) is within an active Williamson Act contract (72-AP-37). This contract specifically lists “roads, streets, highways, railways and other surface vehicle transportation” as a compatible uses, so on its face the construction of a roadway is compatible with the contract; however, as described above, the roadway could result in the cessation of farming on approximately 100 acres of the contracted land. Though allowing the land to remain unused is not contrary to the terms of the contract, it is contrary to the purpose of a Williamson Act contract, which is intended to support the maintenance of agricultural activities. From this perspective, the Alternative could negatively impact 100 acres of contracted grazing land. As noted above, this would not be considered a substantial conflict. Given that the Alternative is consistent with the requirements of the Williamson Act contract, and that it would not result in substantial losses to agricultural productivity within contracted lands, impacts are *less than significant*.

Plate ALT-10: Expanded Footprint Alternative Williamson Act Contracts



IMPACT: CONVERT PROTECTED FARMLAND TO NON-AGRICULTURAL USES

The added northern properties are designated as Grazing Land as are the lands through which the northern access would be constructed; impacts are identical to those described for the Expanded Preserves alternative. As described for the Project, it should be assumed that all 255.6 acres affected will require mitigation pursuant to Mitigation Measure AG-3. With mitigation, impacts related to the conversion of farmland are *less than significant*.

AIR QUALITY

*No PROJECT***IMPACT: CONSTRUCTION ACTIVITIES WOULD INCREASE NO_x EMISSIONS**

Under the No Project Alternative, there could be construction emissions associated with the potential development of one single-family residence on each of ten agricultural properties. The SMAQMD Guide provides screening tables for construction emissions which can be used to determine whether modeling is required to determine significance. According to these screening tables, single-family residential construction would need to involve 180 units before modeling would be required. Projects involving fewer units can be presumed to have less than significant impacts. Since the No Project would involve no more than 10 homes, and furthermore it is unlikely that these homes would be constructed concurrently, construction NO_x emissions would be *less than significant*.

IMPACT: OPERATIONAL EMISSIONS OF OZONE PRECURSORS (NO_x OR ROG)

The SMAQMD Guide includes screening tables for operational emissions of NO_x, just as it does for construction. According to the screening tables a project would need to involve 375 homes before modeling would be required. Projects involving fewer units can be presumed to have less than significant impacts. Since the No Project would involve no more than 10 homes, operational NO_x emissions would be *less than significant*.

IMPACT: CONSTRUCTION ACTIVITIES WOULD INCREASE PARTICULATE MATTER EMISSIONS

As discussed in the Air Quality chapter, a project will result in less than significant impacts with the implementation of the Basic Construction Emission Control Practices if no more than 15 acres of active site disturbance occurs at any given time. Even if all ten potential homes were constructed at the same time, which is unlikely, on average each homesite would need to involve more than 1.5 acres in order to exceed this screening threshold. Even on agricultural properties where home sizes could be larger, construction of a single home would not involve such a substantial disturbance footprint. The No Project condition would not exceed the screening threshold for particulate matter emissions, and impacts would be *less than significant*.

IMPACT: IMPLEMENTATION COULD CONFLICT WITH OR OBSTRUCT IMPLEMENTATION OF AIR QUALITY PLANS

According to the SMAQMD, development projects that exceed emissions of 85 lbs/day of NO_x during construction activities or 65 lbs/day of NO_x or ROG during operational activities would have the potential to obstruct the success of the regional ozone attainment plans and, therefore, would be considered significant and require mitigation. The No Project would not result in significant construction or operational emissions, and thus impacts would be *less than significant*.

IMPACT: PROJECT OPERATION WOULD GENERATE CO EMISSIONS

This alternative could increase the cumulative traffic in the area, but by a maximum of 70 daily trips. Since localized CO concentrations near major vehicular access routes associated with the proposed project were not found to exceed ambient standards, CO impacts associated with the less traffic intensive No Project Alternative would also be *less than significant*.

IMPACT: OPERATION WOULD RESULT IN TAC EMISSIONS EXPOSURE

Single-family homes are not considered by the Air Resources Board to be sources of toxic air contaminants (TAC). As described in the Air Quality chapter, there are no significant sources of TAC within proximity of the site. The No Project will not expose existing sensitive receptors to substantial risk related to TAC exposure; impacts are *less than significant*.

IMPACT: OPERATION MAY RESULT IN EXPOSURE TO OBJECTIONABLE ODORS

Three of the parcels are within one mile of Kiefer Landfill, and one parcel is proximate to Boy's Ranch. The significance criteria asks whether "a substantial number of people" would be impacted by odor. The No Project Alternative would not involve a substantial number of people, and impacts are *less than significant*.

EXPANDED PRESERVES

IMPACT: CONSTRUCTION ACTIVITIES WOULD INCREASE NO_x EMISSIONS

The changes made for the Expanded Preserves Alternative would be unlikely to impact the worst-case amount of daily construction that could be expected, as these are driven by market conditions combined with decisions about the most effective way to phase construction over a large site. A substantial land area would be involved in construction activities regardless of total master plan size. It is reasonable to assume that the Expanded Preserves Alternative will result in construction activities which exceed significance thresholds. Mitigation Measure AQ-1 applied to the Project would also apply to this alternative, and would render impacts *less than significant*.

IMPACT: OPERATIONAL EMISSIONS OF OZONE PRECURSORS (NO_x OR ROG)

The Expanded Preserves Alternative includes 77% of the population of the Project, and for the purposes of this analysis it was assumed that emissions would be 77% of Project emissions. As shown in Table ALT-4, emissions would exceed the threshold.

Table ALT-4: Expanded Preserves NO_x and ROG Operational Emissions

	Emissions in lbs/day
NO_x	319.72 ¹
ROG	660.20 ²
1 – Winter emissions. Summer emissions are 223.44 lbs/day.	
2 – Summer emissions. Winter emissions are 565.99 lbs/day.	

An Air Quality Mitigation Plan (AQMP) would be required for this Alternative just as it is for the Project. The exact same AQMP could not be used, as some changes would need to be made to reflect the changes incorporated into the Alternative, but it would be required to achieve the same 35% reduction in emissions. Reducing emissions by 35% would result in worst-case emissions of 207.82 lbs/day of NO_x and 429.13 lbs/day of ROG, which would still exceed significance thresholds. Mitigation Measure AQ-2 would need to be modified for this Alternative, to reflect the fact that an AQMP does not currently exist for the Alternative, though one would be required prior to Project approval. The amended language is below; this language could be replaced to refer to a specific AQMP date prior to approval of the Alternative. Despite application of feasible mitigation, impacts would remain *significant and unavoidable*.

MITIGATION MEASURES:

ALT-1. Prepare an Air Quality Mitigation Plan (AQMP) which achieves a minimum 35% reduction of ozone precursor emissions, to the satisfaction of the Environmental Coordinator and in consultation with the Sacramento Metropolitan Air Quality Management District. Measures included within the AQMP shall be selected from SMAQMD's "Guidance for Land Use Emission Reductions" (most current version). The AQMP Measures shall be incorporated as requirements within the SPA.

IMPACT: CONSTRUCTION ACTIVITIES WOULD INCREASE PARTICULATE MATTER EMISSIONS

The discussion included for the Project applies to this Alternative. It is reasonable to assume that construction within the site will result in disturbance of more than 15 acres at any given time, which will result in significant emissions of particulate matter. Despite the application of feasible measures though existing rules and regulations, the Expanded Preserves Alternative will result in a *significant and unavoidable* impact related to PM₁₀ and PM_{2.5} emissions generated by construction.

IMPACT: IMPLEMENTATION COULD CONFLICT WITH OR OBSTRUCT IMPLEMENTATION OF AIR QUALITY PLANS

According to the SMAQMD, development projects that exceed emissions of 85 lbs/day of NO_x during construction activities or 65 lbs/day of NO_x or ROG during operational activities would have the potential to obstruct the success of the regional ozone attainment plans and, therefore, would be considered significant and require mitigation.

The Expanded Preserves Alternative would result in significant operational emissions of NO_x and ROG. Therefore, the Alternative has the potential to obstruct the success of regional ozone attainment and would result in a *significant and unavoidable* impact.

IMPACT: PROJECT OPERATION WOULD GENERATE CO EMISSIONS

This Alternative would increase the cumulative traffic in the area, but to a lesser degree than the Project. Since localized CO concentrations near major vehicular access routes associated with the proposed project were not found to exceed ambient standards, Expanded Preserves Alternative CO impacts would also be *less than significant*.

IMPACT: OPERATION WOULD RESULT IN TAC EMISSIONS EXPOSURE

There are no existing sources of TAC in proximity to the site. The Alternative will include some uses which have the potential to generate TAC, such as gasoline stations.

The same mitigation applied to the Project would apply to this Alternative. Alternative impacts related to TAC emissions would be essentially the same as those described for the Project. The Alternative will not expose existing sensitive receptors to substantial risk related to stationary-source TAC exposure, and will not expose proposed sensitive receptors to substantial risk related to mobile-source TAC exposure. Mitigation Measure AQ-3 would apply to ensure that the siting of new uses conforms to California Air Resources Board recommendations. Project impacts related to TAC exposure are *less than significant*.

IMPACT: OPERATION MAY RESULT IN EXPOSURE TO OBJECTIONABLE ODORS

The Expanded Preserves Alternative will still result in the placement of sensitive uses in proximity to both the Kiefer Landfill and Boy's Ranch. The same discussion and mitigation provided for the Project applies to this Alternative; impacts are *less than significant*.

EXPANDED FOOTPRINT

IMPACT: CONSTRUCTION ACTIVITIES WOULD INCREASE NO_x EMISSIONS

The same discussion included for the Expanded Preserves Alternative would apply here. Though the amount of units constructed is reduced compared to the Project, it is reasonable to assume that the Expanded Footprint Alternative will result in construction activities which exceed significance thresholds. Mitigation Measure AQ-1 applied to the

Project would also apply to this alternative, and would render impacts *less than significant*.

IMPACT: OPERATIONAL EMISSIONS OF OZONE PRECURSORS (NO_x OR ROG)

The Expanded Footprint Alternative includes 90% of the population of the Project, and for the purposes of this analysis it was assumed that emissions would be 90% of Project emissions. As shown in Table ALT-5, emissions would exceed the threshold.

Table ALT-5: Expanded Footprint NO_x and ROG Operational Emissions

	Emissions in lbs/day
NO_x	373.70 ¹
ROG	771.66 ²
1 – Winter emissions. Summer emissions are 261.16 lbs/day. 2 – Summer emissions. Winter emissions are 661.55 lbs/day.	

An Air Quality Mitigation Plan (AQMP) would be required for this Alternative just as it is for the Project. The exact same AQMP could not be used, as some changes would need to be made to reflect the changes incorporated into the Alternative, but it would be required to achieve the same 35% reduction in emissions. Reducing emissions by 35% would result in worst-case emissions of 207.82 lbs/day of NO_x and 429.13 lbs/day of ROG, which would still exceed significance thresholds. Mitigation Measure AQ-2 would need to be modified for this Alternative, to reflect the fact that an AQMP does not exist for the Alternative, though one would be required prior to Project approval. The amended language would be the same as described for the Expanded Preserves Alternative (Measure ALT-1); this language could be replaced to refer to a specific AQMP date prior to approval of the Alternative. Despite application of feasible mitigation, impacts would remain *significant and unavoidable*.

IMPACT: EXPOSURE TO OFFSITE EMISSIONS OF PARTICULATE MATTER

The Grant Line Pilatus portion of the Alternative is adjacent to a mine and approximately ½-mile from a processing plant area operated by Teichert Aggregates. The mine is associated with alluvial deposits rather than hardrock. Mining primarily involves the use of heavy equipment to excavate deposits; blasting activities and the creation of substantial open pits does not occur in alluvial mining. Thus, the impacts associated with proximity to this facility are exposure to dust, diesel particulates, and noise associated with the use of large earthmoving equipment.

The mining activities on the adjacent properties were approved in 1997, but have been suspended for the last several years due to decreased demand resulting from a poor economy. Though currently inactive, the Use Permit was recently extended (County Control Number 2008-00171) a further twelve years, which would result in a 2021 expiration year. According to the Use Permit, mining activities are permitted from the hours of 6 a.m. to 10 p.m. Monday through Friday, and from 6:00 a.m. until dusk during weekends and holidays. The maximum depth of mining is 45 feet. The site plans

included as part of the Use Permit also indicate that the areas nearest the Alternative boundary were part of Phase I and Phase II, while the later phases are more than ½-mile from the boundary.

The Environmental Impact Report prepared for the original Use Permit application (County Control Number 1995-0658; available for review at 827 7th Street, Room 220, Sacramento) indicated that approximately 16 pounds per day of particulate matter would be generated. Mitigation measures were included to help control particulate matter emissions. Note that particulate matter in the context of impacts to the Alternative is a function of pollutant concentration. Thus, exposure to substantial particulate matter can be avoided simply by an adequate buffer distance, to ensure that the particulates disperse before reaching sensitive receptors. Dispersion modeling usually requires that the study area extend approximately twice the width of the disturbance area (from the SMAQMD CEQA Guide). For the mining area, this would be approximately 2,500 feet from the mining boundary. Particulate matter concentrations were not measured in the EIR due to a difference in standards at the time, and lack of nearby sensitive receptors. Though modeling has not been completed, it is reasonable to assume that if homes were constructed within 2,500 feet of active mining activities, residents could be exposed to substantial particulate matter concentrations.

Though no further emission controls can be enacted for the mining activities as part of this Alternative, further controls are not necessary to avoid the impact. The Alternative areas nearest to the mining areas would be among those properties developed last, based on the need to phase infrastructure into the site. As already noted, the mining area nearest to the Alternative is part of the first two phases, and mining activities are likely to be completed in this area by the time the Alternative develops. Provided the mining activities occur on land designated as Phase III or later, the mining activities would be a minimum of ½-mile from the Alternative boundary. If this Alternative were approved, mitigation (below) would specify that development within 2,500 feet of active mining would be prohibited. Mitigation would ensure that impacts are *less than significant*.

MITIGATION MEASURES:

ALT-2. Add the following condition to the SPA: Development is prohibited within 2,500 feet of active or approved and planned mining operations.

IMPACT: CONSTRUCTION ACTIVITIES WOULD INCREASE PARTICULATE MATTER EMISSIONS

The discussion included for the Project applies to this Alternative. It is reasonable to assume that construction within the site will result in disturbance of more than 15 acres at any given time, which will result in significant emissions of particulate matter. Despite the application of feasible measures though existing rules and regulations, the Expanded Footprint Alternative will result in a *significant and unavoidable* impact related to PM₁₀ and PM_{2.5} emissions generated by construction.

IMPACT: IMPLEMENTATION COULD CONFLICT WITH OR OBSTRUCT IMPLEMENTATION OF AIR QUALITY PLANS

According to the SMAQMD, development projects that exceed emissions of 85 lbs/day of NO_x during construction activities or 65 lbs/day of NO_x or ROG during operational activities would have the potential to obstruct the success of the regional ozone attainment plans and, therefore, would be considered significant and require mitigation. The Expanded Footprint Alternative would result in significant operational emissions of NO_x and ROG. Therefore, the Alternative has the potential to obstruct the success of regional ozone attainment and would result in a *significant and unavoidable* impact.

IMPACT: PROJECT OPERATION WOULD GENERATE CO EMISSIONS

This Alternative would increase the cumulative traffic in the area, but to a lesser degree than the Project. Since localized CO concentrations near major vehicular access routes associated with the proposed project were not found to exceed ambient standards, Expanded Preserves Alternative CO impacts would also be *less than significant*.

IMPACT: OPERATION WOULD RESULT IN TAC EMISSIONS EXPOSURE

There are no existing sources of TAC in proximity to the site. The Alternative will include some uses which have the potential to generate TAC, such as gasoline stations. The same mitigation applied to the Project would apply to this Alternative. Alternative impacts related to TAC emissions would be essentially the same as those described for the Project. The Alternative will not expose existing sensitive receptors to substantial risk related to stationary-source TAC exposure, and will not expose proposed sensitive receptors to substantial risk related to mobile-source TAC exposure. Mitigation Measure AQ-3 would apply to ensure that the siting of new uses conforms to California Air Resources Board recommendations. Project impacts related to TAC exposure are *less than significant*.

IMPACT: OPERATION MAY RESULT IN EXPOSURE TO OBJECTIONABLE ODORS

The Expanded Footprint Alternative will still result in the placement of sensitive uses in proximity to both the Kiefer Landfill and Boy's Ranch. The same discussion and mitigation provided for the Project applies to this Alternative; impacts are *less than significant*.

BIOLOGICAL RESOURCES

No PROJECT

The No Project Alternative could result in some minimal losses of habitat associated with construction of single-family homes and access roads. For the purposes of this analysis, it is conservatively assumed that each home would result in the loss of one acre of habitat. This is based not just on the physical footprint of construction, but also assumes that some portion of land would be landscaped and/or fenced in for gardens or

household pets, rendering is unavailable as habitat. The loss of up to 10 acres of predominantly grassland habitat encompasses less than 1% of the total land area, and would not result in significant habitat losses. Existing regulations for the protection of wetlands and special status species prohibit direct impacts without obtaining appropriate permits (and through that means satisfying mitigation requirements). Thus, it is assumed that some wetland impacts may occur, but that these would be minimal; most of the approximately 89 acres of wetlands would be retained. It is also assumed that no take of special status species would occur. No Project Alternative impacts to biological resources would be *less than significant*.

EXPANDED PRESERVES

WETLANDS AND SURFACE WATERS

Approximately 1,142 acres of the site would be within preserves as part of this Alternative, including approximately 72 acres of wetlands, with a further 37.3 acres within areas designated Agriculture which would be within a conservation easement. Some amount of this area would be impacted by construction of roads across the preserves, but the Alternative assumes that direct impacts to all vernal pools or seasonal wetlands would be avoided by roadways, and that impacts would be to linear features. Examining the sizes of the features present in the potential impacted areas and assuming an 85-foot right-of-way for the major roads, it is estimated that less than two acres of linear wetlands would be directly impacted by roadways crossing the preserves. This Alternative would place approximately 81% of the wetlands on the site into preserves, and would preserve all of the vernal pools on the eastern plateau – where the most dense vernal pool complexes are located. Of the 47.51 vernal pool acres on the site, a total of 46.39 would be within preserves as part of this Alternative. Mitigation Measure BR-1 for the Project would also apply to this Alternative. An estimated 17 acres of wetlands would require mitigation. It is concluded that mitigation would reduce impacts to *less than significant* levels, given that 81% of the total wetlands on the site would be preserved and that 98% of the vernal pools would be preserved.

SPECIAL STATUS SPECIES

The Expanded Preserves Alternative would retain 1,142 acres within preserves while impacting a total of 1,527 acres of mixed grassland and wetland habitat. As with the Project, the areas designated as Agriculture on the eastern and southeastern side of the site would be placed within an easement which would preclude developed uses, and thus would also be retained as habitat. This increases the area where impacts are avoided to 1,179 acres, while impacted areas drop to 1,490 acres. As discussed in the Biological Resources chapter, there are many species which are reliant on grassland and wetland habitats for foraging, nesting, aestivation, and/or breeding. The Expanded Preserves Alternative does not avoid the impacts described for the Project, but does reduce the severity of those impacts. All of the mitigation described in the Biological Resources chapter would apply to the Expanded Preserves Alternative, but the total

amounts of resources requiring mitigation would be altered. The sections below briefly discuss these differences.

BIRDS

Though the Expanded Preserves Alternative will retain 1,179 acres within preserves and other protected areas, whether foraging habitat is maintained for landscape-level predators such as raptors depends on the size and structure of the preserve. On this basis, the central linear preserve of the Expanded Preserves Alternative will not be counted as preserved foraging habitat for most raptors. Including this area in the total impact (which is 1,490 acres developed with urban uses), the Expanded Preserves Alternative will result in the loss of 1,736 acres of foraging habitat for the Swainson's hawk, ferruginous hawk, golden eagle, northern harrier and white-tailed kite. Each of the preserves will be large enough to support habitat for the grasshopper sparrow, tricolored blackbird, and burrowing owl, and thus the total impacted acreage for these species is 1,490 acres. Mitigation Measures BR-3, BR-5, and BR-6 for the Project would apply, unchanged, to this Alternative. Mitigation Measure BR-4 would also apply, but the total acreage requiring mitigation would be 1,736 acres. As described for the Project, mitigation would reduce impacts to *less than significant* levels.

AMPHIBIANS

The Expanded Preserves Alternative retains more wetlands and more upland area for the western spadefoot toad than the Project. Project impacts to the western spadefoot were determined to be less than significant, and the conclusion remains the same for the Alternative; impacts are *less than significant*.

INVERTEBRATES

The Expanded Preserves Alternative would result in the loss of 17 acres of wetlands which could provide suitable habitat for listed invertebrates. Individual permit requirements are varied, depending upon the quality of the habitat lost, the nature of the impact, and the quality of the mitigation land offered – among other factors. This variation can be observed through review of the BOs in Appendix BR-4. Ultimately, mitigation requirements will be defined through the individual permitting process, but consistent with Sacramento County General Plan policy the mitigation below stipulates a minimum of 1:1 mitigation for wetland habitat lost. It is probable that the individual permit requirements will require a larger amount of mitigation.

The Expanded Preserves Alternative will place 81% of the wetlands on the site into preserves. For this reason, it is concluded that this preservation in combination with the mitigation will reduce impacts to *less than significant* levels.

PLANTS

Most of the same discussion provided for the Project also applies to this Alternative. All development will remain a minimum of 250 feet from vernal pools, which includes those

pools containing legenere and Sacramento orcutt grass. For this reason, Mitigation Measure BR-9 would not apply to this Alternative. Mitigation Measure BR-10 would still apply, because although the vernal pools containing Sacramento orcutt grass will be in a much larger preserve, developed uses will still be within 300 feet of development areas, and could still be impacted by invasive species. As described for the Project, avoidance of direct impacts coupled within mitigation for potential indirect impacts will ensure that impacts to Sacramento orcutt grass resulting from this Alternative are *less than significant*.

EXPANDED FOOTPRINT

In addition to the 1,142 acres of preserves noted in the Expanded Preserves Alternative, this Alternative includes an additional 373 acres of preserves in the Grant Line Pilatus property. A wetland delineation for this property was prepared by ECORP Consulting, Inc. Environmental Consultants (dated July 9, 2008; Appendix ALT-1) and catalogues a total of 20.7 acres of wetlands. For this Alternative, a total of 1,515 acres would be in preserves while 2,016 acres would be designated for developable uses. Again, the areas designated as Agriculture on the eastern and southeastern side of the site would be placed within an easement which would preclude developed uses, and thus would also be retained as habitat. This increases the area where impacts are avoided to 1,552 acres, while impacted areas drop to 1,979 acres. Of the approximately 21 acres of wetlands in the Alternative, approximately 17 acres would be located within preserves (Table ALT-6), making the impact only four acres. Adding the wetland acreage from the Grant Line Pilatus property to the main Cordova Hills property, the Expanded Footprint Alternative includes approximately 110 acres of wetlands, approximately 89 acres of which would within preserves. The Expanded Footprint Alternative places approximately 81% of the wetland acres within preserves. Of the 54.09 acres of vernal pools on the site, a total of 51.44 acres would be preserved; this is 95% of the vernal pool acreage on the site.

Analysis showed that roadways through the preserves of the Expanded Preserves Alternative would involve less than two acres of additional impacts. This is likely to be increased by the Expanded Footprint Preserve, which would involve three crossings of the central preserve on the Grant Line Pilatus property. The Alternative would also include shifting the northern access road off-site, farther to the north. There are dense wetlands in this area which would be impacted by roadway construction, but given that the property is not owned by the applicants or their affiliates, there is no wetland delineation on this property. It is probable that whether the northern access crosses on the site or off-site, the wetland impacts of the roadway would be similar.

Wetland impacts due to the Expanded Footprint Alternative are *less than significant*, for the same reasons described for the Expanded Preserves Alternative.

Table ALT-6: Wetlands and Impacts on the 862-Acre Northern Property

Wetland Type	Acreage Impacted	Acreage Preserved	Total Acreage
Intermittent Drainage	0.19	3.18	3.37
Seasonal wetland	1.09	2.96	4.05
Seasonal wetland swale	1.29	5.05	6.34
Seep	--	0.02	0.02
Stock Pond	--	0.34	0.34
Vernal Pool	1.53	5.05	6.58
<i>TOTAL</i>	<i>4.10</i>	<i>16.6</i>	<i>20.7</i>

SPECIAL STATUS SPECIES

The Expanded Footprint Alternative would retain 1,552 acres within preserves and other protected areas while impacting a total of 1,979 acres of mixed grassland and wetland habitat. As discussed in the Biological Resources chapter, there are many species which are reliant on grassland and wetland habitats for foraging, nesting, aestivation, and/or breeding. The Expanded Footprint Alternative does not avoid the impacts described for the Project, but does reduce the severity of those impacts. All of the mitigation described in the Biological Resources chapter would apply to the Expanded Footprint Alternative, but the total amounts of resources requiring mitigation would be altered. The sections below briefly discuss these differences.

BIRDS

While the linear preserve within the main Cordova Hills area is still considered impacted, the preserve within the Grant Line Pilatus Property is wider in many locations, and is also connected at multiple points to off-site areas which will remain in open space. The preserve within the Grant Line Pilatus property is considered retained habitat for landscape-level raptors such as the Swainson's hawk. Adding the 489 acres of urban development land on the Grant Line Pilatus property to the 1,736 acres impacted in the main Cordova Hills portion results in a total impacted area of 2,225 acres of foraging habitat for Swainson's hawk, ferruginous hawk, golden eagle, northern harrier and white-tailed kite. Each of the preserves will be large enough to support habitat for the grasshopper sparrow, tricolored blackbird, and burrowing owl, and thus the total impacted acreage for these species is 1,979 acres. Mitigation Measures BR-3, BR-5, and BR-6 for the Project would apply, unchanged, to this Alternative. Mitigation Measure BR-4 would also apply, but the total acreage requiring mitigation would be 2,225 acres. As described for the Project, mitigation would reduce impacts to *less than significant* levels.

AMPHIBIANS

The Expanded Footprint Alternative retains more wetlands and more upland area for the western spadefoot toad than the Project. Project impacts to the western spadefoot

were determined to be less than significant, and the conclusion remains the same for the Alternative.

INVERTEBRATES

VERNAL POOL CRUSTACEANS

The Expanded Footprint Alternative would result in the loss of 17 acres of wetlands on the Cordova Hills portion and four acres of wetlands on the Grant Line Pilatus portion of the site, all of which could provide suitable habitat for listed invertebrates. Individual permit requirements are varied, depending upon the quality of the habitat lost, the nature of the impact, and the quality of the mitigation land offered – among other factors. This variation can be observed through review of the BOs in Appendix BR-4. Ultimately, mitigation requirements will be defined through the individual permitting process, but consistent with Sacramento County General Plan policy the mitigation below stipulates a minimum of 1:1 mitigation for wetland habitat lost. It is probable that the individual permit requirements will require a larger amount of mitigation.

The Expanded Footprint Alternative will place 81% of the wetlands on the site into preserves. For this reason, it is concluded that this preservation in combination with the mitigation will reduce impacts to *less than significant* levels.

VALLEY ELDERBERRY LONGHORN BEETLE

Though the main Project area does not contain any habitat for this species, the Grant Line Pilatus property contains a single elderberry plant which could provide habitat for the valley elderberry longhorn beetle (refer to Table BR-3 of the Biological Resources chapter for a species description). This plant would be located within the preserve area, and would not be subject to direct or indirect impacts; thus, impacts are *less than significant*.

PLANTS

For the Cordova Hills portion of the site, the same discussion provided in the Expanded Preserves Alternative applies to this Alternative. Rare plant surveys were not completed on the Grant Line Pilatus property, so the following discussions are based on probability of occurrence. The Grant Line Pilatus property contains surface waters which provide suitable habitat for the following species (for descriptions, refer to Table BR-3 of the Biological Resources chapter): Dwarf downingia, Boggs lake hedge-hyssop, Ahart's dwarf rush, legenere, pincushion navarretia, slender orcutt grass, Sacramento orcutt grass, and Sanford's arrowhead. These species are recorded in the California Natural Diversity Database as being within five miles of the site.

Determinate surveys for wetland-associated rare plants would be required as mitigation for this Alternative. Surveys would be required for all vernal pools, seasonal wetlands, and seasonal wetland swales within 250 feet of construction activities. Mitigation would be required for any species encountered, dependent upon the rarity of the species. For

pincushion navarretia, dwarf downingia, Boggs lake hedge-hyssop, or legenere, mitigation would be in-kind replacement at restoration or creation mitigation sites. The upper layer of soil from the pools can be removed and used as a seed bank to populate the mitigation area. Mitigation prohibits loss of wetlands containing Ahart's dwarf rush, Sacramento orcutt grass, and slender orcutt grass, because these species are extremely rare. Mitigation will ensure that impacts would be *less than significant*.

ALT-1. Rare plant surveys will be required in vernal pool, seasonal wetland, and seasonal wetland swale habitats prior to any grading, grubbing, or excavation within 250 feet of a vernal pool or other suitable habitat. Species surveys shall include Dwarf downingia, Boggs lake hedge-hyssop, Ahart's dwarf rush, legenere, pincushion navarretia, slender orcutt grass, Sacramento orcutt grass, and Sanford's arrowhead. Surveys must be conducted in accordance with Fish and Game "Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered plants and Natural Communities" or a newer protocol that is accepted by CDFG and/or USFWS. The rare plant surveyor shall have experience as a botanical field investigator and familiarity with the local flora and potential rare plants in the habitats to be surveyed. The surveys shall be conducted when the rare plants at the construction site will be easiest to identify (i.e. flowering stage), and when the plants reach that stage of maturity. A minimum of three construction site visit shall be required, during the plants flowering period in order to determine absence. Each construction site visit must be no less than 7 days apart.

Submit a written report to the Environmental Coordinator. The survey report should include a brief description of the vegetation, survey results, photographs, time spent surveying, date of surveys, a map showing the location of the survey route and any rare plant populations and copies of any rare plant occurrence forms. If no rare plants are found, no further action is required. If rare plants are encountered then the following applies (these measures may be superseded by a mitigation plan approved by Fish and Wildlife):

- A. Wherever pincushion navarretia, dwarf downingia, Boggs lake hedge-hyssop, or legenere is found during protocol-level surveys and the habitat is proposed for development, the upper layer of the habitat will be scraped and used as inoculum for restoration or creation sites. The material will be gathered late in the dry season (early fall) and spread over the new or restored substrates, which will be raked to provide a loose subsoil cover to which the vernal pool inoculum will be added before or immediately after the wet season begins (mid to late fall). Surveys will be conducted after the first year and every five years thereafter to monitor success. If after the first year, or any five-year interval thereafter, the restored habitat is not meeting restoration criteria standards of 60 percent survivorship, the efforts will be deemed to have failed. The survivorship percentage shall be based upon the population which had been present in the parent pool(s). The expected population which is used to determine survivorship shall be adjusted annually

based on fluctuations in reference pool populations, in order to account for variations in climate which may result in higher or lower populations in any given year. For example, if 80 individuals were present in the parent pool and 100 in the reference pool, and if in a later year there are 70 individuals in the reference pool, then 100% survivorship would be 56 individuals in the mitigation pool. Remediation of failed restoration efforts must occur within one year after efforts are deemed unsuccessful.

- B. Wherever Ahart's dwarf rush, Sacramento orcutt grass, or slender orcutt grass are found, the wetlands in which they occur shall be preserved. The minimum buffer shall be 250 feet from the edge of the wetland.

CLIMATE CHANGE

Note that the climate change impacts to the study area would be very similar regardless of the Alternative, so the discussions below only describe the greenhouse gas emissions (GHG) of the Alternatives. For impacts to the site from climate change, refer to the Climate Change chapter.

No PROJECT

GREENHOUSE GAS EMISSIONS

Either existing greenhouse gas emissions from the site would remain unchanged, or emissions could increase due to the presence of up to ten homes on the site. Using the Business As Usual calculations of the Cordova Hills GHG Plan, ten homes could emit approximately 1.5 metric tons (MT) per capita (Table 23 of the GHG Plan). Assuming residency figures of 2.71 people per home, this would be approximately 41 MT due to energy usage. The Business As Usual figures for the transportation sector is 8.01 MT per capita, or 217 MT annually. No Project total emissions are calculated as 258 MT annually, or 9.51 MT per capita. This is well above the significance thresholds, but any action exempt from CEQA is likewise exempted from the thresholds. Even if the No Project were discretionary, given that the total emissions are only a tiny fraction of total County emissions (0.005%, based on unincorporated County emissions of 5.2 million MT annually), the total emissions are insignificant; No Project impacts to climate change are *less than significant*.

EXPANDED PRESERVES

GREENHOUSE GAS EMISSIONS

Although the Expanded Preserves Alternative involves fewer homes and businesses, it is assumed that the per capita and per square-foot energy sector emissions would be essentially unchanged from the Project totals (from page 33 of the GHG Plan), which is 1.18 MT (residential) and 5.75 MT per 1,000 square feet (commercial). With 6,845

homes and 382,640 square feet of commercial space, total emissions from energy usage would be 8,460 MT annually.

Table 17 of the GHG Plan shows the methodology and data used to calculate transportation-related GHG emissions. The traffic study also provided data for the Alternatives (Table ALT-7). Using the same methodology shown in Table 17 of the GHG Plan, the transportation emissions of the Expanded Preserves Alternative is 88,283 MT per day, or 4.48 MT per capita annually. The anticipated further reductions from the GHG Plan (Table 19 of the GHG Plan) would reduce these emissions by 15.9%, resulting in per capita emissions of 3.77 MT per capita.

Compared to the thresholds in effect at the time of the NOP, the Expanded Preserves Alternative would be below all three sector thresholds. Compared to the current thresholds, the Alternative would be above the transportation sector threshold. Converting the commercial and industrial sector threshold to per capita (0.62 MT according to page 33 of the GHG Plan) and then combining all sectors, total emissions would be 5.57 MT per capita or 96,743 MT annually. Converting the commercial and industrial threshold to per capita and combining all sectors, the aggregate threshold is 4.97 MT per capita. Aggregating the sectors to account for “overachievement” in the energy usage sectors still does not result in emissions which are below the threshold. The same conclusion applied to the Project applies to this Alternative, and impacts remain *significant and unavoidable*.

EXPANDED FOOTPRINT

GREENHOUSE GAS EMISSIONS

Although the Expanded Preserves Alternative involves fewer homes and businesses, it is assumed that the per capita and per square-foot energy emissions would be essentially unchanged, which is 1.18 MT (residential) and 5.75 MT per 1,000 square feet (commercial), based on page 33 of the GHG Plan. With 8,045 homes and 1,032,640 square feet of commercial space, total emissions from energy usage would be 10,526 MT annually.

Table 17 of the GHG Plan shows the methodology and data used to calculate transportation-related GHG emissions. The traffic study also provided data for the Alternatives (Table ALT-7). Using the same methodology shown in Table 17 of the GHG Plan, the transportation emissions of the Expanded Preserves Alternative is 102,814 MT per day, or 4.50 MT per capita annually. The anticipated further reductions from the GHG Plan (Table 19 of the GHG Plan) would reduce these emissions by 15.9%, resulting in per capita emissions of 3.78 MT per capita.

Compared to the thresholds in effect at the time of the NOP, the Expanded Footprint Alternative is below all three sector thresholds. Compared to the current thresholds the Expanded Footprint Alternative is above the transportation sector threshold. Aggregating all emissions, the Expanded Footprint Alternative results in emissions of 5.61 MT per capita or 113,3403 MT annually, which is also above the aggregated

threshold. Aggregating the sectors to account for “overachievement” in the energy usage sectors still does not result in emissions which are below the threshold. The same conclusion applied to the Project applies to this Alternative, and impacts remain *significant and unavoidable*.

Table ALT-7: Traffic Data Used in the GHG Analysis for Alternative 1 and 2

Speed Bin Value	2008 VMT		2035 VMT		2020 VMT		2020 EMFAC Estimated CO ₂ (MT)	
	Expanded Preserves	Expanded Footprint	Expanded Preserves	Expanded Footprint	Expanded Preserves	Expanded Footprint	Expanded Preserves	Expanded Footprint
1 – 5	23,422	23,105	77,295	77,039	47,366	47,076	57	56
6 – 10	168,549	168,160	255,255	268,442	207,085	212,730	189	194
11 – 15	357,035	354,651	676,891	660,575	499,193	490,617	361	354
16 – 20	6,901,734	6,936,713	10,870,692	10,927,294	8,665,715	8,710,305	5,147	5,174
21 – 25	2,529,689	2,562,932	3,671,446	3,646,607	3,037,137	3,044,565	1,550	1,554
26 – 30	3,152,033	3,136,946	5,540,285	5,586,293	4,213,478	4,225,545	1,913	1,919
31 – 35	6,248,995	6,337,800	10,421,357	10,350,792	8,103,378	8,121,352	3,385	3,393
36 – 40	6,805,180	6,798,779	13,149,576	13,220,764	9,624,912	9,652,995	3,822	3,833
41 – 45	6,054,529	6,024,164	8,402,320	8,420,393	7,097,992	7,089,155	2,766	2,762
46 – 50	3,528,656	3,562,400	6,183,706	6,197,469	4,708,678	4,733,542	1,859	1,869
51 – 55	5,932,720	5,870,514	7,753,676	7,785,832	6,742,034	6,721,766	2,786	2,778
56 – 60	10,991,990	11,069,422	13,800,924	13,737,391	12,240,405	12,255,186	5,475	5,481
61 – 65	2,225,808	2,182,160	1,795,900	1,796,089	2,034,738	2,010,573	1,019	1,007
66 – 70	1,765,153	1,765,114	2,135,295	2,134,842	1,929,661	1,929,438	982	982
<i>Total Daily</i>	<i>56,685,493</i>	<i>56,792,860</i>	<i>84,734,618</i>	<i>84,809,822</i>	<i>47,366</i>	<i>47,076</i>	<i>31,311</i>	<i>31,356</i>
<i>Total Daily CO₂ No Project</i>							<i>31,035</i>	<i>31,035</i>
<i>Total Daily CO₂: Alternatives – No Project</i>							<i>276</i>	<i>321</i>
<i>Total Annual CO₂</i>							<i>88,283</i>	<i>102,814</i>
<i>Mitigated Total¹</i>							<i>74,246</i>	<i>86,467</i>

NOTES

VMT: vehicle miles traveled

1. Including the 15.9% Reduction from Table 19 of the GHG Plan

CULTURAL RESOURCES

NO PROJECT

The discussions found in the Cultural Resources chapter apply to this Alternative. There are no known historical resources on the site, as defined by CEQA. The No Project Alternative involves a much smaller potential construction footprint, and thus there is a much lower probability of encountering undiscovered subsurface resources. Though mitigation cannot be applied to a No Project Alternative, it is expected to be unnecessary for such minor potential changes; since there are no significant resources on the site, impacts of the No Project Alternative are *less than significant*.

EXPANDED PRESERVES

The discussions found in the Cultural Resources chapter apply to this Alternative. There are no known historical resources on the site, as defined by CEQA. The impacts of this Alternative would essentially be the same as the Project, though with a slightly reduced likelihood of encountering undiscovered subsurface resources, because the Expanded Preserves Alternative involves a smaller construction footprint. Mitigation Measure CR-1 would reduce potential impacts to *less than significant* levels.

EXPANDED FOOTPRINT

For the main Cordova Hills portion of this Alternative, impacts to cultural resources are the same as those discussed above in the Expanded Preserves discussion. A cultural resources survey has not been conducted on the Grant Line Pilatus property, but a record search was performed at the North Central Information Center in this area as part of the Draft 2030 Sacramento County General Plan EIR. According to the record search, there are six historical isolates recorded within or adjacent to the Grant Line Pilatus property. The isolates consist of miscellaneous farming equipment, such as a tractor, and an oil can. Isolates lack historical context and data potential, thus are not considered significant resources. Thus, there are no known significant cultural resources within the Grant Line Pilatus area.

The area was historically utilized for intensive mining and, later, ranching and farming activities. The intensive use of the this growth area for placer mining purposes, resulted in substantial topographic changes that are very prevalent today, which act as artificial monuments of the historic land use in this area. Such activities have resulted in massive changes to stratigraphy, which likely obliterated many prehistoric cultural resources sites within the area. Though no known significant sites exist, and it is likely that any sites that were present have been damaged by use of the property over time, the presence of the isolates does indicate some sensitivity for the presence of undiscovered historical resources. Furthermore, as is the case with all development, there is the potential to discover previously undocumented archeological resources. A cultural resources field survey must be conducted on the site prior to development, to ensure that all reasonable steps have been taken to identify significant resources;

mitigation to that effect has been included, along with a requirement to preserve any significant sites. This mitigation (ALT-2), in combination with Project measure CR-1, would reduce potential impacts to *less than significant* levels.

MITIGATION MEASURES:

ALT-2. Prior to issuance of building permits or recordation of the final map, whichever occurs first, a cultural resources survey prepared by a qualified professional shall be provided to the Environmental Coordinator. Any significant resources (as defined by the National Historic Preservation Act, the California Environmental Quality Act Guidelines, and the California Public Resources Code) shall be preserved, to the satisfaction of the Environmental Coordinator.

GEOLOGY AND SOILS

NO PROJECT

The discussions found in the Geology and Soils chapter apply to this Alternative. As described, there are existing regulations in place to ensure that construction on the site does not cause substantial soil erosion, and will avoid substantial risk to life and property associated with expansive soils or geological hazards (such as seismicity). The site is not considered likely to include asbestos-containing soils, and soil testing found no evidence of naturally occurring asbestos. There are no mapped mineral resources on the site which would be obstructed by the Alternative, and moreover, the construction of up to ten homes would not preclude future mining of the site. Impacts related to this topical area are *less than significant* for the same reasons described for the Project.

EXPANDED PRESERVES

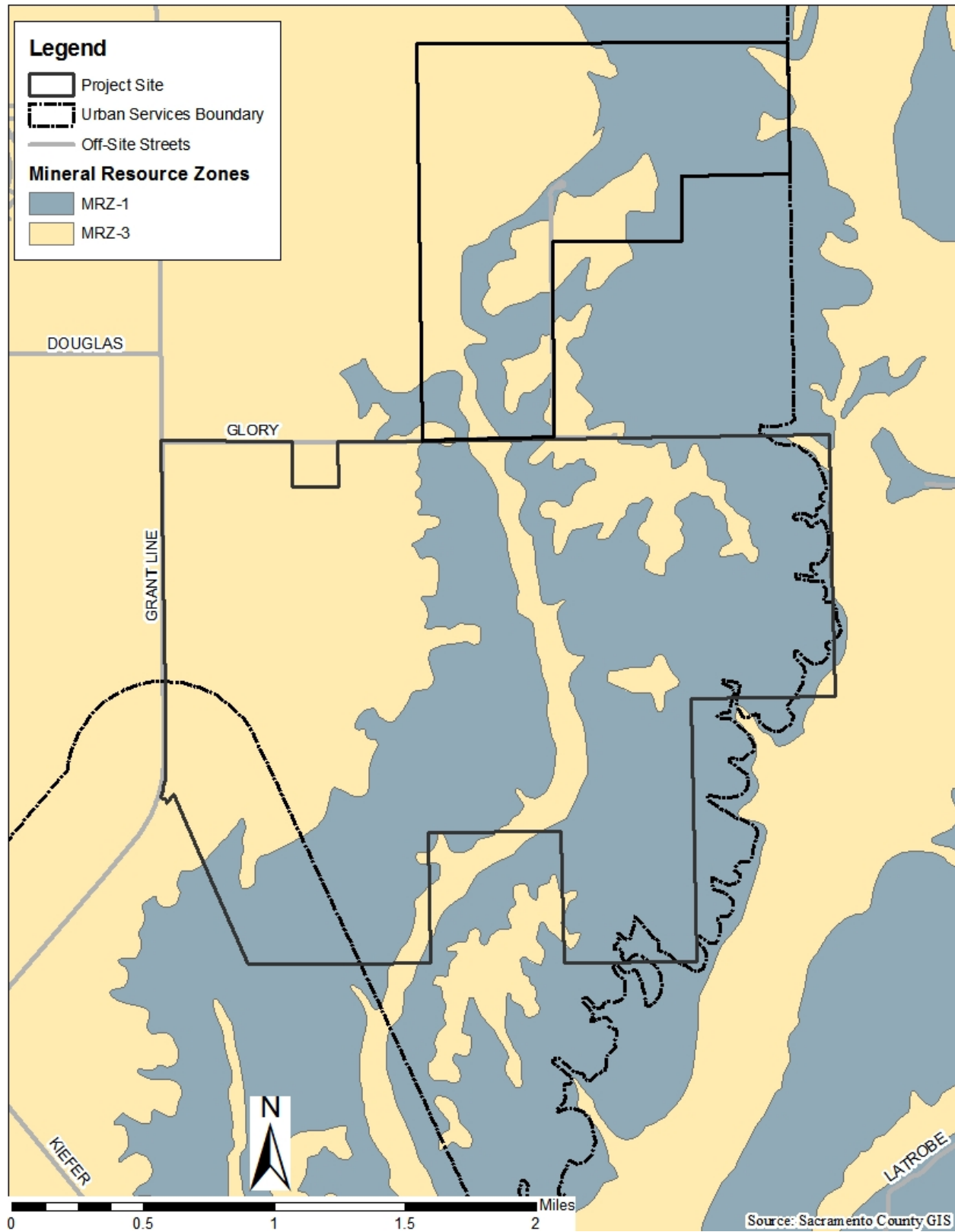
The discussions found in the Geology and Soils chapter apply to this Alternative. As described, there are existing regulations in place to ensure that construction on the site does not cause substantial soil erosion, and will avoid substantial risk to life and property associated with expansive soils or geological hazards (such as seismicity). The site is not considered likely to include asbestos-containing soils, and soil testing found no evidence of naturally occurring asbestos. There are no mapped mineral resources on the site which would be obstructed by the Alternative, and moreover, this Alternative would include the same aggregate-recovery plan as the Project. Impacts related to this topical area are *less than significant* for the same reasons described for the Project.

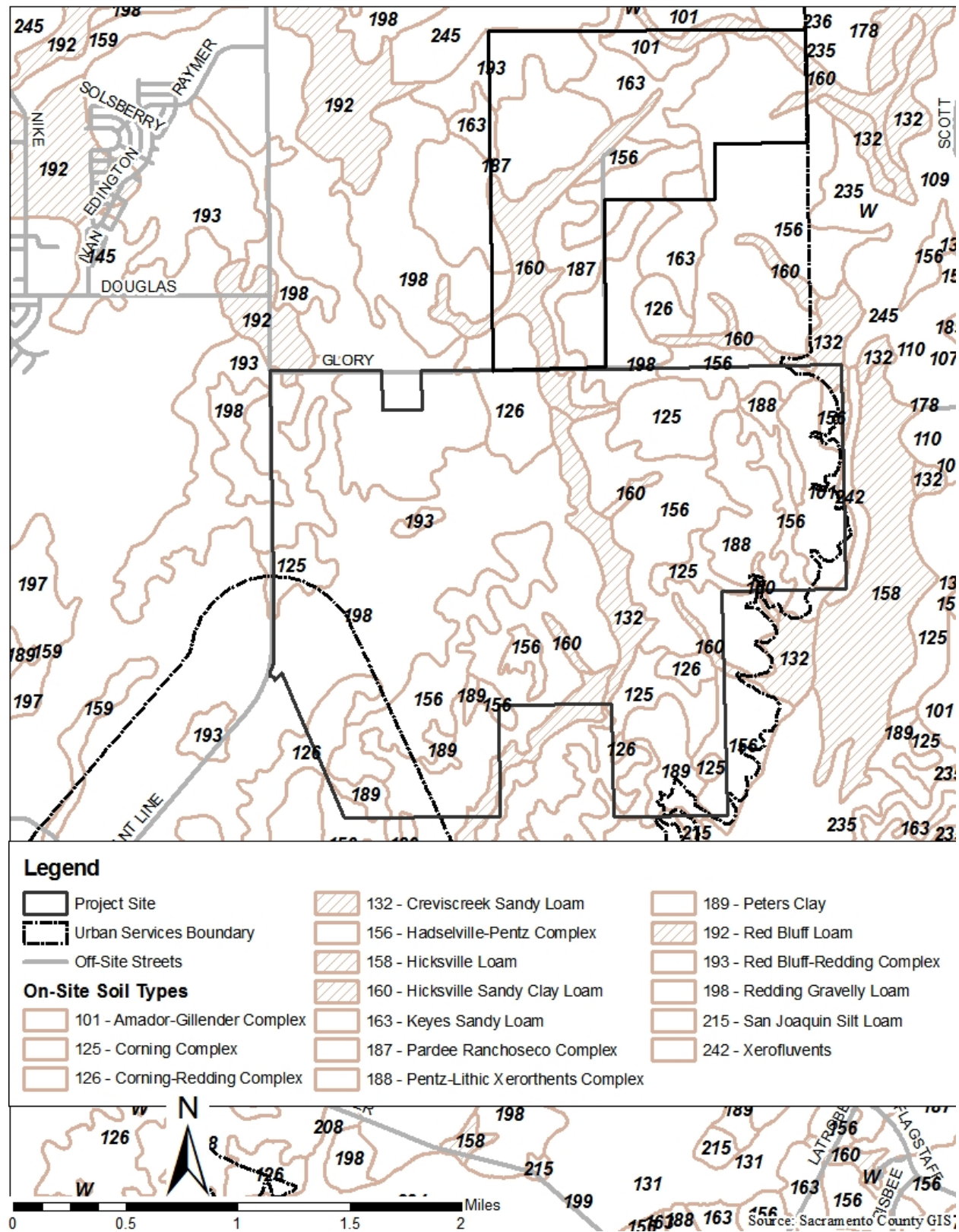
EXPANDED FOOTPRINT

The discussion for this Alternative is the same as the one provided for Expanded Preserves, above, except that some additional discussion is necessary to address the additional land area. The Grant Line Pilatus area is designated MRZ-1 and MRZ-3, and

it contains the same soil types as the Project area (refer to Plate ALT-11 and Plate ALT-12; on the latter exhibit, prime soils are hatchmarked). The expansion of the site brings the existing MRZ-2 areas to within 1.5 miles of the Alternative, but still does not make the Alternative likely to obstruct access to mineral resources. Like the rest of the site, the Grant Line Pilatus area is not mapped as likely to include asbestos-containing soils. Ultimately, since the additional property has the same geologic characteristics as the primary Project area, the discussions and conclusions for the Project apply to the Expanded Footprint Alternative. Impacts related to this topical area are *less than significant* for the same reasons described for the Project.

Plate ALT-11: Expanded Footprint and Sacramento County MRZ Zones





HAZARDS AND HAZARDOUS MATERIALS

No PROJECT

The impacts discussed in the Hazards and Hazardous Materials chapter are largely related to the proximity of known hazards or hazardous materials to the Project site, and are typically unrelated to the specific uses proposed within the site. For this reason, the impact discussions for the Project apply to the No Project Alternative. Known existing or historic hazardous conditions near the site include the Boy's Ranch, Aerojet (soil and groundwater contamination), and Kiefer Landfill (groundwater contamination). The Boy's Ranch was remediated and is a closed case, and does not have the potential to impact homes developed on the site. The No Project Alternative would involve the use of wells to supply both potable and non-potable water supply, but since groundwater contamination stemming from the Aerojet and Kiefer Landfill properties are migrating away from the site, the wells would not be negatively impacted by contamination. Only one of the parcels is affected by the buffer of the Kiefer Landfill, and it is highly unlikely that a home would be constructed within the relatively narrow area where the buffer exists – it is more probable that a home would be constructed at a point farther from the landfill, and thus would not be impacted by gas migration. Impacts related to this topical area are *less than significant*, as described for the Project.

EXPANDED PRESERVES

The same discussions provided for the Project apply to this Alternative; also refer to the No Project discussion above for a summary. Impacts related to this topical area are *less than significant*, as described for the Project. Mitigation Measure HM-1 would apply.

EXPANDED FOOTPRINT

The Project search radius for hazardous sites was one mile – an area which includes the Grant Line Pilatus area. Though this Alternative includes additional land area, it does not change the conclusions of the analysis. Impacts related to this topical area are *less than significant*, as described for the Project. Mitigation Measure HM-1 would apply.

HYDROLOGY AND WATER QUALITY

No PROJECT

The No Project Alternative would impact less than one percent of the watershed area on the site, and thus would not result in substantial hydrologic changes on the site. Existing County ordinances and regulations described in the Hydrology and Water Quality chapter would ensure that any homes constructed would not be placed within a 100-year floodplain and would not impede or redirect flood flows.

Water quality impacts could occur during construction from increased soil erosion and sedimentation due to clearing of vegetation, alteration of drainages, and grading, though on a much smaller scale than for the Project. Depending on the size of the construction area and the amount of soil moved, construction of homes may require the State's General Construction Permit, which requires preparation of an erosion control plan. Developments which do not meet permit requirements are exempted because they are considered to be too small to generate substantial construction-related pollution. Either the No Project Alternative will require appropriate erosion controls, through permitting requirements, or will not have the potential to generate substantial polluted runoff.

The No Project Alternative would not be subject to the design requirements of the *Stormwater Quality Design Manual for the Sacramento and South Placer Regions*; the area for each home is too small. Like construction water quality, the No Project Alternative is considered too small to have substantial impacts. It should also be noted that ample undisturbed grasslands would remain after construction to filter and treat runoff from the home sites.

For the foregoing reasons, No Project impacts to hydrology and water quality are *less than significant*.

EXPANDED PRESERVES

The Drainage Master Plan would require amendment for this Alternative. Given that the Alternative converts less land area to urbanized uses than the Project, it can be concluded that fewer detention and water quality basins would be needed for this Alternative. The basin locations would also need to change, given that many of the basins for the Project are shown in areas which would be within Avoided Areas in the Alternative condition. Though moved, it is assumed that the new basin locations would all be within the site boundaries in areas already analyzed for impacts related to urbanization, and thus would not result in additional unstudied physical impacts. Ultimately, though specific Drainage Master Plan designs would require change, the conclusions of the Project analysis with respect to avoidance of floodplain impacts, hydromodification, and impacts to stormwater infrastructure still applies to this Alternative; impacts are *less than significant*.

Construction-related and operational water quality impacts of the Expanded Preserves Alternative would be the same as those described for the Project. Existing regulations are sufficient to ensure that the Alternative will not contribute substantial sources of polluted runoff; impacts are *less than significant*.

EXPANDED FOOTPRINT

The Expanded Footprint Alternative includes more overall land area, but nonetheless includes less conversion of land to urban uses than the Project. The Expanded Footprint Alternative also includes the same watersheds as the Project area, though the Drainage Master Plan would need to be expanded to include the added portions of the

Carson Creek watershed associated with the Grant Line Pilatus area. A similar number of basins may be required, though in different locations within the portions designated for urban uses. For these reasons, though the Drainage Master Plan would require amendment for this Alternative, it is presumed that the same conclusions reached for the Project would ultimately be reached for this Alternative; as described for the Project, impacts would be *less than significant*.

Construction-related and operational water quality impacts of the Expanded Footprint Alternative would be the same as those described for the Project. Existing regulations are sufficient to ensure that the Alternative will not contribute substantial sources of polluted runoff; impacts are *less than significant*.

LAND USE

NO PROJECT

The No Project Alternative would involve very little change in conditions, in terms of land use impacts. The Alternative would retain the same site zoning and other land use designations, and would develop consistent with those designations. As such, the No Project Alternative would not result in significant conflicts with existing land use plans or existing land use policies intended to avoid significant environmental effects. The No Project Alternative would be consistent with the SACOG Blueprint, inasmuch as urbanization of the site is not identified in the Blueprint until the cumulative planning horizon. The No Project Alternative would not disrupt an existing community or displace housing elsewhere, given that the site does not contain existing housing. Land use impacts related to the No Project Alternative are *less than significant*.

EXPANDED PRESERVES

CONFLICT WITH LAND USE PLANS

The impact of the Expanded Preserves Alternative is essentially the same as the Project impact. The Alternative would involve less urbanization across from the City of Rancho Cordova, but this would not conflict with uses across Grant Line Road. For the same reasons discussed for the Project, the Expanded Preserves Alternative would not result in substantial conflicts with a land use plan which avoids environmental impacts; impacts are *less than significant*.

CONFLICT WITH LAND USE POLICIES AND REGULATIONS

SACOG BLUEPRINT, LU-23, LU-26, AND LU-113

The Alternative includes the same basic internal designs as the Project, so in this respect the conclusions for the Project related to provision of a variety of transportation choices, compact building and community design, and a range of housing, as well as fostering a sense of place apply to this Alternative. The discussion related to directing

development toward existing communities also applies to this Alternative. Where the Alternative differs from the Project is in the preservation of open space. Where the Project preserves 18% of the total site area, the Expanded Preserves Alternative places 43% of the land area into preserves. This is substantial land area, and furthermore results in the preservation of 81% of the wetland resources on the site. For these reasons, the Expanded Preserves Alternative is considered consistent with the “preservation of open space” Blueprint principle. Though consistent with most of the Blueprint principles, the Alternative is nonetheless inconsistent with the major underpinning principle of the Blueprint, which is to grow outward from the existing urban core. For this reason, impacts are still considered *significant and unavoidable*, as they are for the Project.

GENERAL PLAN POLICIES RELATED TO GROWTH INDUCEMENT

The Expanded Preserves Alternative would include a General Plan Amendment to allow the use of public water for the sports park and other uses and would extend infrastructure through Rancho Cordova to reach the site. The impacts of the Alternative are the same as those described for the Project; impacts are *less than significant*.

GENERAL PLAN POLICIES RELATED TO PUBLIC SERVICES AND UTILITIES

Compliance with General Plan Policies LU-13, LU-66, LU-110, and LU-123 is intended to ensure that minimum service standards for public services and utilities are met. The Alternative would include a facilities financing plan, just like the Project which would be submitted to all of the applicable service entities for review and approval. Long-term funding sources would be identified for the maintenance of public services. Impacts are *less than significant*, just as they are for the Project.

GENERAL PLAN POLICIES RELATED TO TRANSPORTATION AND AIR QUALITY

The Expanded Preserves Alternative would result in substantial impacts related to air quality and transportation, but like the Project this would not be due to conflict with General Plan policies. In terms of Policy LU-25, the Alternative use mix would be approximately 23% public, 74% residential, and 3% commercial. The commercial category is below the minimum 10% included in the policy for developments with a residential emphasis, though this is partly due to the limitations described in the Land Use chapter: the acreage designated for commercial uses does not reflect the actual amount of commercial area, since there are land use categories which are residential but allow a certain proportion of commercial uses.

Though an acreage analysis indicates that the Expanded Preserves Alternative is inconsistent with LU-25, the Alternative nonetheless involves lower per-person travel and thus lower per-person emissions (refer to the Climate Change discussion for the Alternative) than the Project, which is consistent with the policy. Thus it is concluded that Expanded Preserves inconsistency with the policy is not resulting in significant transportation or air quality impacts; impacts are *less than significant*.

GENERAL PLAN POLICIES: LAND USE COMPATIBILITY

Policy LU-19 states that appropriate buffers should be placed between incompatible uses, and Policy LU-94 states that new development should be compatible with existing development, which in the vicinity of the site includes the Boy's Ranch and Kiefer Landfill. The impacts of the Alternative are the same as those described for the Project; impacts are *less than significant*.

DIVISION OR DISRUPTION OF ESTABLISHED COMMUNITY

The impacts of the Alternative are the same as those described for the Project; impacts are *less than significant*.

DISPLACEMENT OF HOUSING

The impacts of the Alternative are the same as those described for the Project; impacts are *less than significant*.

EXPANDED FOOTPRINT

CONFLICT WITH LAND USE PLANS

The impact of the Expanded Footprint Alternative is essentially the same as the Project impact. The Alternative would involve less urbanization across from the City of Rancho Cordova, but this would not conflict with uses across Grant Line Road. Where the Grant Line Pilatus area is added, there are no nearby land use plans. For the same reasons discussed for the Project, the Expanded Footprint Alternative would not result in substantial conflicts with a land use plan which avoids environmental impacts; impacts are *less than significant*.

CONFLICT WITH LAND USE POLICIES AND REGULATIONS

SACOG BLUEPRINT

The Alternative includes the same basic internal designs as the Project, so in this respect the conclusions for the Project related to provision of a variety of transportation choices, compact building and community design, and a range of housing, as well as fostering a sense of place apply to this Alternative. The discussion related to directing development toward existing communities also applies to this Alternative. Where the Alternative differs from the Project is in the preservation of open space. Where the Project preserves 18% of the total site area, the Expanded Footprint Alternative places 57% of the land area into preserves. Note, however, that this is because the overall Project area has been expanded. Although the Expanded Footprint Alternative results in a far greater percentage of preserved land, the Alternative only reduces the amount of urbanized land by approximately 159 acres.

The conclusion for the Project as it relates to open space preservation was based largely on the fact that the open space in question contains vernal pools and other wetland resources which have been identified as vital to the recovery of vernal pool species. Though the Expanded Footprint Alternative reduces the amount of urbanized land by only a small amount, it does result in the preservation of 81% of the wetland habitat on the site. For this reason, the Expanded Footprint Alternative is considered consistent with the Blueprint principle related to preservation of open space.

Though consistent with most of the Blueprint principles, the Alternative is nonetheless inconsistent with the major underpinning principle of the Blueprint, which is to grow outward from the existing urban core. For this reason, impacts are still considered *significant and unavoidable*, as they are for the Project.

GENERAL PLAN POLICIES RELATED TO GROWTH INDUCEMENT

The Expanded Footprint Alternative would include a General Plan Amendment to allow the use of public water for the sports park and other uses and would extend infrastructure through Rancho Cordova to reach the site. As it related to these policies, the impacts of the Alternative are the same as those described for the Project; impacts are *less than significant*.

GENERAL PLAN POLICIES RELATED TO PUBLIC SERVICES AND UTILITIES

Compliance with General Plan Policies LU-13, LU-66, LU-110, and LU-123 is intended to ensure that minimum service standards for public services and utilities are met. The Alternative would include a facilities financing plan, just like the Project which would be submitted to all of the applicable service entities for review and approval. Long-term funding sources would be identified for the maintenance of public services. Impacts are *less than significant*, just as they are for the Project.

GENERAL PLAN POLICIES RELATED TO TRANSPORTATION AND AIR QUALITY

The Expanded Footprint Alternative would result in substantial impacts related to air quality and transportation, but like the Project this would not be due to conflict with General Plan policies. In terms of Policy LU-25, the Alternative use mix would be approximately 24% public, 64% residential, and 12% commercial. This is within the general parameters described by LU-25. Impacts are *less than significant*, just as they are for the Project.

GENERAL PLAN POLICIES: LAND USE COMPATIBILITY

Policy LU-19 states that appropriate buffers should be placed between incompatible uses, and Policy LU-94 states that new development should be compatible with existing development, which in the vicinity of the site includes the Boy's Ranch, Kiefer Landfill, and Teichert Aggregates Grantline processing facility and appurtenant mining areas. As it relates to the Boy's Ranch and Kiefer Landfill, impacts of the Alternative are the same as those described for the Project. With regard to the Teichert properties, the

edge of the Expanded Footprint Alternative is adjacent to a mining area and approximately ½-mile from the processing plant area. The mine is associated with alluvial deposits rather than hardrock. Mining primarily involves the use of heavy equipment to excavate surface deposits; blasting activities do not occur in alluvial mining. Thus, the impacts associated with proximity to this facility are exposure to dust, diesel particulates, and noise associated with the use of large earthmoving equipment. These issues are discussed in the air quality and noise analysis sections, but are summarized here.

The Environmental Impact Report prepared for the original Use Permit application (County Control Number 1995-0658; available for review at 827 7th Street, Room 220, Sacramento) indicated that approximately 16 pounds per day of particulate matter would be generated. The analysis also indicated that noise levels could reach volumes of 70 dB at distances of 225 feet from the equipment. To avoid impacts related to particulate matter emissions, mitigation has been included restricting development to areas at least 2,500 feet from active mining operations. This restriction also prevents noise impacts, and thus impacts are *less than significant*.

DIVISION OR DISRUPTION OF ESTABLISHED COMMUNITY

The impacts of the Alternative are the same as those described for the Project; impacts are *less than significant*.

DISPLACEMENT OF HOUSING

The impacts of the Alternative are the same as those described for the Project; impacts are *less than significant*.

NOISE

NO PROJECT

The construction of up to ten single-family homes would not result in substantial construction noise, nor would those homes generate sufficient traffic to make an appreciable change in roadway noise. Single-family homes are also not significant sources of stationary noise. The Project discussion of noise related to Mather Airport and Kiefer Landfill would apply to the No Project Alternative. The No Project Alternative would not result in exposure of people to a substantial noise source, or exceed a noise standard; impacts are *less than significant*.

EXPANDED PRESERVES

CONSTRUCTION WOULD TEMPORARILY INCREASE NOISE LEVELS

The same discussion provided for the Project is applicable to the Alternative; impacts are *less than significant*.

ON-SITE TRAFFIC NOISE

Using the same assumptions of roadway width as used for the Project analysis and the average daily traffic (ADT) calculated for the Expanded Preserves Alternative, the FHWA modeling indicates that cumulative on-site roadway noise volumes would be the same or less than the Project noise volumes (Table ALT-8). Though on-site volumes are in many cases lower, they are still above the 65 dB standard for exterior residential noise environments. There are no residential or commercial areas which would be subject to exterior noise environments which exceed 70 dB, which means that with standard exterior-to-interior noise reduction of 25 dB, all interior noise would be a maximum of 45 dB. While Mitigation Measure NO-1 and NO-3 of the Project would apply, Mitigation Measure NO-2 and NO-4 would not be necessary. As discussed for the Project, mitigation would reduce noise volumes to within General Plan standards; impacts are *less than significant*.

ON-SITE COMMUNITY AND STATIONARY NOISE

The same discussion provided for the Project is applicable to the Alternative; impacts are *less than significant*.

NOISE DUE TO ACTIVITIES AT KIEFER LANDFILL

The same discussion provided for the Project is applicable to the Alternative; impacts are *less than significant*.

SUBSTANTIAL INCREASE IN THE AMBIENT NOISE LEVEL

Table ALT-9 displays the change in existing ambient noise volumes which would be caused by the Expanded Preserves Alternative. Table ALT-10 is also included to disclose probable future conditions, but note that the threshold only applies to development subject to substantial increases in *existing* ambient noise. In any case, the table shows that in the majority of cases the Alternative contribution to cumulative noise is negligible. Most of the same roadway segments impacted by the Project would be impacted by the Alternative. The same discussion provided for the Project applies to this Alternative, and impacts are *significant and unavoidable*.

MATHER AIRPORT

The same discussion and mitigation provided for the Project is applicable to the Alternative; impacts are *less than significant*.

Table ALT-8: Cumulative Plus Expanded Preserves On-Site Roadway Noise

Roadway	Segment		Adjacent Land Uses ²	dB at property line ³	70 dB contour (ft)	65 dB contour (ft)
	From	To				
North Loop Rd	Grant Line Rd	Town Center Dr	AV	70	70	151
North Loop Rd	Town Center Dr	Street A	AV, R-2	71	70	151
North Loop Rd	Street A	Street D	FC, MDR, R-2, AV	69	68	147
North Loop Rd	Street D	Street F	School, MDR	68	38	82
North Loop Rd	Street F	University Blvd	LDR, R-2, ER	64	18	38
University Blvd	Grant Line Rd	Town Center Dr	AV, AG, R	70	72	155
University Blvd	Town Center Dr	Street A	AV, University, R-2, HDR	68	54	116
University Blvd	Street A	Street C	HDR, MDR, LDR	65	36	78
University Blvd	Street C	Street D	MDR, R-2, AV	65	37	80
University Blvd	Street D	Street E	FC, HDR, RD-20	67	32	69
University Blvd	Street E	North Loop Rd	MDR, R, LDR, R-2, ER	66	22	47
Street A	North Loop Rd	University Blvd	R-2, AV, LDR	65	13	28
Street A	University Blvd	Street B	HDR, FC, R, MDR, RD-20	69	40	85
Street A	Street B	Street D	FC, MDR, School, LDR, R-2, AV	67	31	67
Street D	North Loop Rd	University Blvd	MDR, HDR, FC, RD-20, R, R-2	69	41	88
Street D	University Blvd	Street A	HDR, MDR, RD-20, R-2	67	31	66
Street E	University Blvd	Street A	MDR, LDR, RD-20, R, R-2	64	19	41
TC = Town Center, FC = Flex Commercial, AG = Agriculture, R = Recreation, R-2 = Recreation 2 (parks), AV = Avoided, ER = Residential Estates, LDR = Low Density Residential, MDR = Medium Density Residential, RD-20 = Residential 20, HDR = High Density Residential						

Table ALT-9: Existing and Existing Plus Expanded Preserves Off-Site Road Noise

Roadway Segment	Noise Level (dB) At Modeled Location ¹		
	Existing	Existing Plus Alt	Change
Grant Line Rd - Sheldon Rd to Calvin Rd	70	70	0
Grant Line Rd - Calvin Rd to Sunrise Blvd	70	71	1
Grant Line Rd - Sunrise Blvd to Jackson Rd (SR-16)	68	70	2
Grant Line Rd - Jackson Rd (SR-16) to Kiefer Blvd	68	72	4
Grant Line Rd - Kiefer Blvd to University Blvd	67	72	5
Grant Line Rd - University Blvd to Chrysanthus Blvd	67	70	3
Grant Line Rd - Chrysanthus Blvd to North Loop	67	70	3
Grant Line Rd - North Loop to Douglas Rd	67	74	7
Grant Line Rd - Douglas Rd to White Rock Rd	68	71	3
White Rock Rd - Kilgore Rd to Sunrise Blvd	71	72	1
White Rock Rd - Sunrise Blvd to Fitzgerald Rd	66	67	1
White Rock Rd - Fitzgerald Rd to Grant Line Rd	64	65	1
White Rock Rd - Grant Line Rd to Prairie City Rd	69	71	1
White Rock Rd - Prairie City Rd to Scott Rd (West)	68	69	1
White Rock Rd - Scott Rd (West) to Scott Rd (East)	68	69	1
White Rock Rd - Scott Rd (East) to County Line	67	67	0
Jackson Rd (SR-16) - Watt Ave to Bradshaw Rd	70	71	1
Jackson Rd (SR-16) - Bradshaw Rd to Excelsior Rd	69	71	2
Jackson Rd (SR-16) - Excelsior Rd to Eagles Nest Rd	69	70	1
Jackson Rd (SR-16) - Eagles Nest Rd to Sunrise Blvd	69	70	1
Jackson Rd (SR-16) - Sunrise Blvd to Grant Line Rd	70	72	2
Douglas Rd - Mather Blvd to Eagles Nest Rd	64	65	1
Douglas Rd - Eagles Nest Rd to Sunrise Blvd	64	65	1
Douglas Rd - Sunrise Blvd to Rancho Cordova Pkwy	63	69	6
Douglas Rd - Rancho Cordova Pkwy to Grant Line Rd	60	69	9
Kiefer Blvd - Grant Line Rd to Jackson Rd (SR-16)	61	62	1
Sunrise Blvd - US 50 to Folsom Blvd	74	74	0
Sunrise Blvd - Folsom Blvd to White Rock Rd	73	74	1
Sunrise Blvd - White Rock Rd to Douglas Rd	71	73	2
Sunrise Blvd - Jackson Rd (SR-16) to Florin Rd	67	67	0
Mather Blvd - Douglas Rd to Femoyer St	64	65	1

Roadway Segment	Noise Level (dB) At Modeled Location ¹		
	Existing	Existing Plus Alt	Change
Zinfandel Dr - US-50 to White Rock Rd	73	73	0
Prairie City Rd - US-50 to White Rock Rd	67	69	2
Scott Rd - US-50 to White Rock Rd	67	67	0
<p>NOTES:</p> <p>1. Modeling location was 70 ft from the centerline with exception of Douglas Road, which was 73 feet from the centerline based on the nearest edge of existing residential areas.</p> <p>Bold indicates volume which exceeds standard</p> <p>Shading indicates Alternative causes significant impacts.</p>			

**Table ALT-10: Cumulative and Cumulative Plus Expanded Preserves
Off-Site Road Noise**

Roadway Segment	Noise Level (dB) At Modeled Location ¹		
	Cumulative	Cumulative Plus Project	Change
Grant Line Rd - Sheldon Rd to Calvin Rd	73	73	0
Grant Line Rd - Calvin Rd to Sunrise Blvd	74	74	0
Grant Line Rd - Sunrise Blvd to Jackson Rd (SR-16)	72	73	1
Grant Line Rd - Jackson Rd (SR-16) to Rancho Cordova Pkwy	73	74	1
Grant Line Rd - Rancho Cordova Pkwy to Kiefer Blvd	73	74	1
Grant Line Rd - Kiefer Blvd to University Blvd	73	74	1
Grant Line Rd - University Blvd to Chrysanthus Blvd	73	74	1
Grant Line Rd - Chrysanthus Blvd to North Loop	73	74	1
Grant Line Rd - North Loop to Douglas Rd	74	76	2
Grant Line Rd - Douglas Rd to White Rock Rd	75	75	0
White Rock Rd - Kilgore Rd to Sunrise Blvd	70	70	0
White Rock Rd - Sunrise Blvd to Rancho Cordova Pkwy	71	71	0
White Rock Rd - Rancho Cordova Pkwy to Americanos Blvd	69	69	0
White Rock Rd - Americanos Blvd to Grant Line Rd	69	70	1
White Rock Rd - Grant Line Rd to Prairie City Rd	76	77	1
White Rock Rd - Prairie City Rd to Scott Rd (South)	75	76	1
White Rock Rd - Scott Rd (South) to Scott Rd (North)	75	76	1
White Rock Rd - Scott Rd (North) to County Line	72	72	0
Jackson Rd (SR-16) - Watt Ave to Bradshaw Rd	77	77	0
Jackson Rd (SR-16) - Bradshaw Rd to Vineyard Rd	76	76	0
Jackson Rd (SR-16) - Vineyard Rd to Excelsior Rd	74	75	1
Jackson Rd (SR-16) - Excelsior Rd to Eagles Nest Rd	71	71	0
Jackson Rd (SR-16) - Eagles Nest Rd to Sunrise Blvd	71	71	0
Jackson Rd (SR-16) - Sunrise Blvd to Grant Line Rd	72	72	0
Douglas Rd - Excelsior Rd to Eagles Nest Rd	69	69	0
Douglas Rd - Eagles Nest Rd to Sunrise Blvd	71	71	0
Douglas Rd - Sunrise Blvd to Rancho Cordova Pkwy	72	72	0

Roadway Segment	Noise Level (dB) At Modeled Location ¹		
	Cumulative	Cumulative Plus Project	Change
Douglas Rd - Rancho Cordova Pkwy to Americanos Blvd	69	71	2
Douglas Rd - Americanos Blvd to Grant Line Rd	66	70	4
Kiefer Blvd - Bradshaw Rd to Vineyard Rd	71	71	0
Kiefer Blvd - Vineyard Rd to Excelsior Rd	70	70	0
Kiefer Blvd - Excelsior Rd to Eagles Nest Rd	67	68	1
Kiefer Blvd - Eagles Nest Rd to Sunrise Blvd	68	69	1
Kiefer Blvd - Sunrise Blvd to Rancho Cordova Pkwy	69	70	1
Kiefer Blvd - Rancho Cordova Pkwy to Grant Line Rd	65	66	1
Kiefer Blvd - Grant Line Rd to Jackson Rd (SR-16)	65	65	0
Sunrise Blvd - US 50 to Folsom Blvd	74	74	0
Sunrise Blvd - Folsom Blvd to White Rock Rd	73	73	0
Sunrise Blvd - White Rock Rd to Douglas Rd	73	73	0
Sunrise Blvd - Jackson Rd (SR-16) to Florin Rd	70	70	0
Mather Blvd - Douglas Rd to Femoyer St	64	64	0
Zinfandel Dr - US-50 to White Rock Rd	75	75	0
Zinfandel Dr - White Rock Rd to International Dr	74	74	0
Zinfandel Dr - International Dr to Douglas Rd	71	72	1
Prairie City Rd - US-50 to Easton Valley Pkwy	74	74	0
Prairie City Rd - Easton Valley Pkwy to White Rock Rd	73	73	0
Scott Rd - US-50 to Easton Valley Pkwy	76	76	0
Scott Rd - Easton Valley Pkwy to White Rock Rd	73	73	0
Chrysanthy Blvd - Sunrise Blvd to Rancho Cordova Pkwy	67	67	0
Chrysanthy Blvd - Rancho Cordova Pkwy to Americanos Blvd	69	70	1
Chrysanthy Blvd - Americanos Blvd to Grant Line Rd	64	68	4
Rancho Cordova Pkwy - White Rock Rd to Douglas Rd	72	72	0
Rancho Cordova Pkwy - Douglas Rd to Chrysanthy Blvd	71	71	0
Rancho Cordova Pkwy - Chrysanthy Blvd to Kiefer Blvd	69	69	0
Rancho Cordova Pkwy - Kiefer Blvd to Grant Line Rd	65	66	1

Roadway Segment	Noise Level (dB) At Modeled Location ¹		
	Cumulative	Cumulative Plus Project	Change
Americanos Blvd - White Rock Rd to Douglas Rd	67	68	1
Americanos Blvd - Douglas Rd to Chrysanthy Blvd	65	66	1
Americanos Blvd - Chrysanthy Blvd to Kiefer Blvd	66	66	0
Oak Ave - US-50 to Easton Valley Pkwy	69	69	0
Oak Ave - Easton Valley Pkwy to White Rock Rd	61	61	0
NOTES: 1. Modeling location was 70 ft from the centerline with exception of Douglas Road, which was 73 feet from the centerline based on the nearest edge of existing residential areas. Bold indicates volume which exceeds standard.			

EXPANDED FOOTPRINT

CONSTRUCTION WOULD TEMPORARILY INCREASE NOISE LEVELS

The same discussion provided for the Project is applicable to the Alternative; impacts are *less than significant*.

ON-SITE TRAFFIC NOISE

Using the same assumptions of roadway width as used for the Project analysis and the average daily traffic (ADT) calculated for the Expanded Footprint Alternative, the FHWA modeling indicates that cumulative on-site roadway noise volumes would be the same or less than the Project noise volumes (Table ALT-8). Though on-site volumes are in some cases lower, they are still above the 65 dB standard for exterior residential noise environments. There are no residential or commercial areas which would be subject to exterior noise environments which exceed 70 dB, which means that with standard exterior-to-interior noise reduction of 25 dB, all interior noise would be a maximum of 45 dB. While Mitigation Measure NO-1 and NO-3 of the Project would apply, Mitigation Measure NO-2 and NO-4 would not be necessary. As discussed for the Project, mitigation would reduce noise volumes to within General Plan standards; impacts are *less than significant*.

ON-SITE COMMUNITY AND STATIONARY NOISE

The same discussion provided for the Project is applicable to the Alternative; impacts are *less than significant*.

NOISE DUE TO ACTIVITIES AT KIEFER LANDFILL

The same discussion provided for the Project is applicable to the Alternative; impacts are *less than significant*.

SUBSTANTIAL INCREASE IN THE AMBIENT NOISE LEVEL

Table ALT-13 displays the change in existing ambient noise volumes which would be caused by the Expanded Preserves Alternative. Table ALT-14 is also included to disclose probable future conditions, but note that the threshold only applies to development subject to substantial increases in *existing* ambient noise. In any case, the table shows that in the majority of cases the Alternative contribution to cumulative noise is negligible. Most of the same roadway segments impacted by the Project would be impacted by the Alternative. The same discussion provided for the Project applies to this Alternative, and impacts are *significant and unavoidable*.

MATHER AIRPORT

The same discussion and mitigation provided for the Project is applicable to the Alternative; impacts are *less than significant*.

Table ALT-11: Cumulative Plus Expanded Footprint On-Site Roadway Noise

Roadway	Segment		Adjacent Land Uses ²	dB at property line ³	70 dB contour (ft)	65 dB contour (ft)
	From	To				
North Loop Rd	Grant Line Rd	Town Center Dr	AV	70	80	173
North Loop Rd	Town Center Dr	Street A	AV, R-2	71	80	173
North Loop Rd	Street A	Street D	FC, MDR, R-2, AV	66	42	91
North Loop Rd	Street D	Street F	School, MDR	67	31	67
North Loop Rd	Street F	University Blvd	LDR, R-2, ER	65	20	43
University Blvd	Grant Line Rd	Town Center Dr	AV, AG, R	70	79	171
University Blvd	Town Center Dr	Street A	AV, University, R-2, HDR	69	65	140
University Blvd	Street A	Street C	HDR, MDR, LDR	67	44	95
University Blvd	Street C	Street D	MDR, R-2, AV	66	42	90
University Blvd	Street D	Street E	FC, HDR, RD-20	66	31	66
University Blvd	Street E	North Loop Rd	MDR, R, LDR, R-2, ER	65	20	43
Street A	North Loop Rd	University Blvd	R-2, AV, LDR	65	14	31
Street A	University Blvd	Street B	HDR, FC, R, MDR, RD-20	69	40	87
Street A	Street B	Street D	FC, MDR, School, LDR, R-2, AV	66	27	58
Street D	North Loop Rd	University Blvd	MDR, HDR, FC, RD-20, R, R-2	70	48	103
Street D	University Blvd	Street A	HDR, MDR, RD-20, R-2	68	36	77
Street E	University Blvd	Street A	MDR, LDR, RD-20, R, R-2	64	20	43
TC = Town Center, FC = Flex Commercial, AG = Agriculture, R = Recreation, R-2 = Recreation 2 (parks), AV = Avoided, ER = Residential Estates, LDR = Low Density Residential, MDR = Medium Density Residential, RD-20 = Residential 20, HDR = High Density Residential						

Table ALT-12: Existing and Existing Plus Expanded Footprint Off-Site Road Noise

Roadway Segment	Noise Level (dB) At Modeled Location ¹		
	Existing	Existing Plus Alt 2	Change
Grant Line Rd - Sheldon Rd to Calvin Rd	70	70	0
Grant Line Rd - Calvin Rd to Sunrise Blvd	70	71	1
Grant Line Rd - Sunrise Blvd to Jackson Rd (SR-16)	68	70	2
Grant Line Rd - Jackson Rd (SR-16) to Kiefer Blvd	68	72	4
Grant Line Rd - Kiefer Blvd to University Blvd	67	72	5
Grant Line Rd - University Blvd to Chrysanthus Blvd	67	70	3
Grant Line Rd - Chrysanthus Blvd to North Loop	67	70	3
Grant Line Rd - North Loop to Douglas Rd	67	70	3
Grant Line Rd - Douglas Rd to White Rock Rd	68	72	4
White Rock Rd - Kilgore Rd to Sunrise Blvd	71	72	1
White Rock Rd - Sunrise Blvd to Fitzgerald Rd	66	67	1
White Rock Rd - Fitzgerald Rd to Grant Line Rd	64	66	2
White Rock Rd - Grant Line Rd to Prairie City Rd	69	71	2
White Rock Rd - Prairie City Rd to Scott Rd (West)	68	69	1
White Rock Rd - Scott Rd (West) to Scott Rd (East)	68	69	1
White Rock Rd - Scott Rd (East) to County Line	67	67	0
Jackson Rd (SR-16) - Watt Ave to Bradshaw Rd	70	71	1
Jackson Rd (SR-16) - Bradshaw Rd to Excelsior Rd	69	71	2
Jackson Rd (SR-16) - Excelsior Rd to Eagles Nest Rd	69	71	2
Jackson Rd (SR-16) - Eagles Nest Rd to Sunrise Blvd	69	71	2
Jackson Rd (SR-16) - Sunrise Blvd to Grant Line Rd	70	72	2
Douglas Rd - Mather Blvd to Eagles Nest Rd	64	65	1
Douglas Rd - Eagles Nest Rd to Sunrise Blvd	64	65	1
Douglas Rd - Sunrise Blvd to Rancho Cordova Pkwy	63	70	7
Douglas Rd - Rancho Cordova Pkwy to Grant Line Rd	60	70	10
Kiefer Blvd - Grant Line Rd to Jackson Rd (SR-16)	61	63	2
Sunrise Blvd - US 50 to Folsom Blvd	74	74	0
Sunrise Blvd - Folsom Blvd to White Rock Rd	73	74	1
Sunrise Blvd - White Rock Rd to Douglas Rd	71	73	2
Sunrise Blvd - Jackson Rd (SR-16) to Florin Rd	67	67	0
Mather Blvd - Douglas Rd to Femoyer St	64	66	2

Roadway Segment	Noise Level (dB) At Modeled Location ¹		
	Existing	Existing Plus Alt 2	Change
Zinfandel Dr - US-50 to White Rock Rd	73	73	0
Prairie City Rd - US-50 to White Rock Rd	67	70	3
Scott Rd - US-50 to White Rock Rd	67	68	1
<p>NOTES:</p> <p>1. Modeling location was 70 ft from the centerline with exception of Douglas Road, which was 73 feet from the centerline based on the nearest edge of existing residential areas.</p> <p>Bold indicates volume which exceeds standard</p> <p>Shading indicates Alternative causes significant impact.</p>			

**Table ALT-13: Cumulative and Cumulative Plus Expanded Footprint
Off-Site Road Noise**

Roadway Segment	Noise Level (dB) At Modeled Location ¹		
	Cumulative	Cumulative Plus Alt 2	Change
Grant Line Rd - Sheldon Rd to Calvin Rd	73	73	0
Grant Line Rd - Calvin Rd to Sunrise Blvd	74	74	0
Grant Line Rd - Sunrise Blvd to Jackson Rd (SR-16)	72	73	1
Grant Line Rd - Jackson Rd (SR-16) to Rancho Cordova Pkwy	73	74	1
Grant Line Rd - Rancho Cordova Pkwy to Kiefer Blvd	73	75	2
Grant Line Rd - Kiefer Blvd to University Blvd	73	75	2
Grant Line Rd - University Blvd to Chrysanthus Blvd	73	74	1
Grant Line Rd - Chrysanthus Blvd to North Loop	73	74	1
Grant Line Rd - North Loop to Douglas Rd	74	74	0
Grant Line Rd - Douglas Rd to White Rock Rd	75	76	1
White Rock Rd - Kilgore Rd to Sunrise Blvd	70	70	0
White Rock Rd - Sunrise Blvd to Rancho Cordova Pkwy	71	71	0
White Rock Rd - Rancho Cordova Pkwy to Americanos Blvd	69	69	0
White Rock Rd - Americanos Blvd to Grant Line Rd	69	70	1
White Rock Rd - Grant Line Rd to Prairie City Rd	76	77	1
White Rock Rd - Prairie City Rd to Scott Rd (South)	75	76	1
White Rock Rd - Scott Rd (South) to Scott Rd (North)	75	76	1
White Rock Rd - Scott Rd (North) to County Line	72	72	0
Jackson Rd (SR-16) - Watt Ave to Bradshaw Rd	77	77	0
Jackson Rd (SR-16) - Bradshaw Rd to Vineyard Rd	76	76	0
Jackson Rd (SR-16) - Vineyard Rd to Excelsior Rd	74	75	1
Jackson Rd (SR-16) - Excelsior Rd to Eagles Nest Rd	71	71	0
Jackson Rd (SR-16) - Eagles Nest Rd to Sunrise Blvd	71	71	0
Jackson Rd (SR-16) - Sunrise Blvd to Grant Line Rd	72	72	0
Douglas Rd - Excelsior Rd to Eagles Nest Rd	69	69	0
Douglas Rd - Eagles Nest Rd to Sunrise Blvd	71	72	1
Douglas Rd - Sunrise Blvd to Rancho Cordova Pkwy	72	73	1

Roadway Segment	Noise Level (dB) At Modeled Location ¹		
	Cumulative	Cumulative Plus Alt 2	Change
Douglas Rd - Rancho Cordova Pkwy to Americanos Blvd	69	71	2
Douglas Rd - Americanos Blvd to Grant Line Rd	66	71	5
Kiefer Blvd - Bradshaw Rd to Vineyard Rd	71	71	0
Kiefer Blvd - Vineyard Rd to Excelsior Rd	70	70	0
Kiefer Blvd - Excelsior Rd to Eagles Nest Rd	67	68	1
Kiefer Blvd - Eagles Nest Rd to Sunrise Blvd	68	69	1
Kiefer Blvd - Sunrise Blvd to Rancho Cordova Pkwy	69	69	0
Kiefer Blvd - Rancho Cordova Pkwy to Grant Line Rd	65	66	1
Kiefer Blvd - Grant Line Rd to Jackson Rd (SR-16)	65	65	0
Sunrise Blvd - US 50 to Folsom Blvd	74	74	0
Sunrise Blvd - Folsom Blvd to White Rock Rd	73	73	0
Sunrise Blvd - White Rock Rd to Douglas Rd	73	73	0
Sunrise Blvd - Jackson Rd (SR-16) to Florin Rd	70	70	0
Mather Blvd - Douglas Rd to Femoyer St	64	64	0
Zinfandel Dr - US-50 to White Rock Rd	75	76	1
Zinfandel Dr - White Rock Rd to International Dr	74	74	0
Zinfandel Dr - International Dr to Douglas Rd	71	72	1
Prairie City Rd - US-50 to Easton Valley Pkwy	74	74	0
Prairie City Rd - Easton Valley Pkwy to White Rock Rd	73	73	0
Scott Rd - US-50 to Easton Valley Pkwy	76	76	0
Scott Rd - Easton Valley Pkwy to White Rock Rd	73	73	0
Chrysanthy Blvd - Sunrise Blvd to Rancho Cordova Pkwy	67	67	0
Chrysanthy Blvd - Rancho Cordova Pkwy to Americanos Blvd	69	69	0
Chrysanthy Blvd - Americanos Blvd to Grant Line Rd	64	67	3
Rancho Cordova Pkwy - White Rock Rd to Douglas Rd	72	72	0
Rancho Cordova Pkwy - Douglas Rd to Chrysanthy Blvd	71	71	0
Rancho Cordova Pkwy - Chrysanthy Blvd to Kiefer Blvd	69	69	0
Rancho Cordova Pkwy - Kiefer Blvd to Grant Line Rd	65	66	1
Americanos Blvd - White Rock Rd to Douglas Rd	67	68	1

Roadway Segment	Noise Level (dB) At Modeled Location ¹		
	Cumulative	Cumulative Plus Alt 2	Change
Americanos Blvd - Douglas Rd to Chrysanthy Blvd	65	65	0
Americanos Blvd - Chrysanthy Blvd to Kiefer Blvd	66	66	0
Oak Ave - US-50 to Easton Valley Pkwy	69	69	0
Oak Ave - Easton Valley Pkwy to White Rock Rd	61	61	0
<p>NOTES:</p> <p>1. Modeling location was 70 ft from the centerline with exception of Douglas Road, which was 73 feet from the centerline based on the nearest edge of existing residential areas.</p> <p>Bold indicates volume which exceeds standard</p>			

PUBLIC SERVICES

No PROJECT

The addition of up to ten new homes would marginally increase demands on public services, but the demand would not be substantial enough to trigger the need for increased staffing or facilities. Impacts are *less than significant*.

EXPANDED PRESERVES

The Expanded Preserves Alternative would result in a population of 19,690 residents including the university/college campus center, and a population of 15,650 residents excluding the university/college campus center. This is approximately 77% of the residents expected for the Project, and thus would reduce service demands when compared to the Project. Service demand changes were estimated as follows:

- Fire station assumptions remain unchanged.
- 13 additional Sacramento County Sheriff's Department staff members (77% of the Project total).
- 14,292 tons of annual waste generation and 19,436 tons of construction waste (which is 77% of the Project totals).
- Total school needs remain unchanged, but the proportion of students generated by the Alternative changes. A total of 1,837 elementary school students, 540 middle school students, and 999 high school students (based on student generation rates in the Draft Financing Plan multiplied by the unit totals of the Alternative).

- 79 acres of parkland, based on a population of 15,650 residents and dedication requirements of 5 acres per 1,000 people.
- Library assumptions remain unchanged.

Existing regulations, ordinances, codes, and fee mechanisms will ensure that the above facilities are constructed and adequately funded; impacts are *less than significant* for the same reasons as described for the Project.

EXPANDED FOOTPRINT

The Expanded Preserves Alternative would result in a population of 22,850 residents including the university/college campus center, and a population of 18,810 residents excluding the university/college campus center. This is approximately 90% of the residents expected for the Project, and thus would reduce service demands when compared to the Project. Service demand changes were estimated as follows:

- Fire station assumptions remain unchanged.
- 15 additional Sacramento County Sheriff's Department staff members (90% of the Project total).
- 16,733 tons of annual waste generation and 22,717 tons of construction waste (which is 90% of the Project totals).
- Total school needs remain unchanged, but the proportion of students generated by the Alternative changes. A total of 2,406 elementary school students, 705 middle school students, and 1,306 high school students (based on student generation rates in the Draft Financing Plan multiplied by the unit totals of the Alternative).
- 94 acres of parkland, based on a population of 18,810 residents and dedication requirements of 5 acres per 1,000 people.
- Library assumptions remain unchanged.

Existing regulations, ordinances, codes, and fee mechanisms will ensure that the above facilities are constructed and adequately funded; impacts are *less than significant* for the same reasons as described for the Project.

PUBLIC UTILITIES

No PROJECT

The No Project Alternative would not involve the use of public water or sewer supply, but would instead rely on private wells and septic systems. Any septic systems that are installed on the site must be installed pursuant to Sacramento County Code Chapter 6.32, which is enforced by the Sacramento County Environmental Management

Department. Sacramento County has established restricted areas for septic tank installation based on soil types and other factors. The project site lies within the area that requires percolation tests and/or soil boring. Any septic system installed in accordance with County standards will not result in significant public health impacts, and will provide adequate service.

Sacramento County Code Section 6.28 governs the installation and operation of private wells, which includes minimum setbacks from other facilities. The setbacks include a minimum distance of 100 feet from any septic tank or septic leach line, and 150 feet from a septic leaching pit. These regulations prevent contamination of well water. Any well installed in accordance with County standards will not result in significant public health impacts, and will provide adequate service. Serving up to ten new homes will marginally increase groundwater consumption, but not by a substantial degree.

Electrical lines would need to be extended to each new home constructed, and it is reasonable to assume that these lines would follow the pathway of the access road to the home. No additional physical impacts are likely due to utility line construction, and given that SMUD and PG&E have indicated that adequate energy services are available to the Project, it is reasonable to assume that there would likewise be sufficient service for the No Project Alternative.

The No Project Alternative would not result in substantial physical impacts as a result of utility construction and would not exceed the sustainable groundwater yield; impacts are *less than significant*.

EXPANDED PRESERVES

CONSTRUCTION OF INFRASTRUCTURE

The Non-Potable Water Supply Master Plan, the Water Master Plan, and the Sewer Master Plan would all require amendment for this Alternative, as fewer on-site lines would be needed for the smaller development footprint and less total demand would be incurred. Though these changes would need to be made, ultimately the same regional and off-site improvements would be required, and the conclusions described for the Project apply to this Alternative. Impacts are *significant and unavoidable*.

ENERGY EFFICIENCY

Like the Project, the Alternative will include exceedance of Title 24 standards, installation of Energy Star rated appliances, and the usage of renewable energy to supply 20% of residential energy. The Alternative will likewise result in more efficient usage of non-residential electricity, and of both residential and non-residential natural gas. The Alternative will not result in the wasteful, inefficient, and unnecessary consumption of energy, and impacts are *less than significant*.

RESULT IN A PROJECT WATER DEMAND THAT CANNOT BE MET BY SUPPLY

Water demands in the Water Supply Assessment were based on the acreage of the uses proposed by the Project, and the demand assumptions for those use types. The Water Supply Assessment is quite detailed in the assignment of water demands and the breakdown of uses. The analysis of this Alternative does not attempt to replicate this level of detail, as it is not necessary in order to compare the Project to the Alternative. Using the data in Table PU-3 of the Public Utilities chapter, the reduction in water demand associated with the Expanded Preserves Alternative was calculated by removing the additional acreage included in the Medium Density Residential category (due to removal of the Town Center), aggregating the remaining residential demand, and reducing the total based on the overall change in acreage. The Expanded Preserves includes 90% of the acreage designated for residential uses – the bulk of the population and housing reductions associated with the Alternative are due to removal of the Town Center.

The Project residential water demand is 3,803.5 acre-feet per year (AFY). Excluding the Medium Density Residential added for the Town Center reduces demand to 3,042.6 AFY, and 90% of this is approximately 2,738 AFY. This would result in an approximated total Expanded Preserves water demand of 5,484 AFY. It was determined that Zone 40 has sufficient water supply to provide water service to the Project, and thus it can be concluded that the smaller demands of the Expanded Preserves Alternative could also be met; impacts are *less than significant*.

RESULT IN A SEWER DISPOSAL DEMAND THAT CANNOT BE MET BY DISPOSAL OR CONVEYANCE CAPACITY

The sewage disposal demand in the Sewer Master Plan was, like water demand, calculated based on the acreage of uses proposed by the Project, and the demand assumptions for those use types. Residential sewage disposal demand for the Alternative was calculated by assuming 90% of the residential demand totals, and the demands were further adjusted by removing the equivalent single-family dwellings (ESDs) associated with the Town Center. This results in a total demand of 12,484 ESD.

It was concluded that the Project would not exceed existing or planned disposal and conveyance capacity, and it can likewise be concluded for the lower demands of the Expanded Preserves Alternative; impacts are *less than significant*.

RESULT IN AN ENERGY DEMAND THAT CANNOT BE MET BY ENERGY SERVICE PROVIDERS

Energy demand was calculated by adjusting the data used for the Project analysis in the Public Services chapter. The Expanded Preserves Alternative includes 6,849 units, which is 76% of the Project total, and thus would consume roughly 59,258 MWh (59,258,000 kilowatt hours (kWh)) of electricity for residential uses. The Expanded Preserves Alternative includes 382,640 square feet of commercial area, which is 28% of the Project total, and would thus consume roughly 12,745 MWh (12,745,000 kWh) of electricity for commercial uses. Natural gas usage was calculated using the same factors from the Project analysis (144 therms per capita and 401.03 therms per 1,000

square feet), which results in Expanded Preserves natural gas consumption of 2,835,360 therms for residential uses and 153,450 therms for commercial usage. As stated in the Project analysis, these usage totals represent a small fraction of total energy consumption in the County, and will not exceed available supply; impacts are *less than significant*.

EXCEED THE SUSTAINABLE GROUNDWATER YIELD

The Alternative results in less water consumption than the Project, and it was already concluded that the Project would not exceed the sustainable groundwater yield; impacts are *less than significant*.

ADVERSELY AFFECT GROUNDWATER RECHARGE

The same discussion included for the Project applies to this Alternative; impacts are *less than significant*.

EXPANDED FOOTPRINT

CONSTRUCTION OF INFRASTRUCTURE

The Non-Potable Water Supply Master Plan, the Water Master Plan, and the Sewer Master Plan would all require amendment for this Alternative, as fewer on-site lines would be needed on the main Cordova Hills portion while additional lines would be needed extending into the Grant Line Pilatus property. As with the rest of the development area, these additional on-site lines would extend underneath roadways and through other development areas, and would not result in utility-specific impacts. Though these changes would need to be made, ultimately the same regional and off-site improvements would be required, and the conclusions described for the Project apply to this Alternative. Impacts are *significant and unavoidable*.

ENERGY EFFICIENCY

Like the Project, the Alternative will include exceedance of Title 24 standards, installation of Energy Star rated appliances, and the usage of renewable energy to supply 20% of residential energy. The Alternative will likewise result in more efficient usage of non-residential electricity, and of both residential and non-residential natural gas. The Alternative will not result in the wasteful, inefficient, and unnecessary consumption of energy, and impacts are *less than significant*.

RESULT IN A PROJECT WATER DEMAND THAT CANNOT BE MET BY SUPPLY

The Expanded Footprint Alternative includes only a slightly smaller total urbanization footprint than the Project, and this is largely due to changes in the Town Center, not due to changes in residential acreage. The Expanded Footprint Alternative also changes the amount of acreage in each of the residential use types, but an analysis at this level

of detail is not necessary or included. The Town Center will be approximately 73% of the size of the Project Town Center. To calculate changes in water demand, the Medium Density Residential acreage reported in Table PU-3 of the Public Utilities chapter was changed to 460 acres, with a resultant demand of 1,704 AFY. Using this number in place of the 1,909.9 AFY calculated for the Project results in a total demand of 6,344 AFY. It was determined that Zone 40 has sufficient water supply to provide water service to the Project, and thus it can be concluded that the smaller demands of the Expanded Footprint Alternative could also be met; impacts are *less than significant*.

RESULT IN A SEWER DISPOSAL DEMAND THAT CANNOT BE MET BY DISPOSAL OR CONVEYANCE CAPACITY

The sewage disposal demand in the Sewer Master Plan was, like water demand, calculated based on the acreage of uses proposed by the Project, and the demand assumptions for those use types. The equivalent single-family dwellings (ESD) associated with the Town Center were adjusted by assuming 73% of the demand was equivalent to the Expanded Footprint Alternative. This results in a total demand of 15,346 ESD. It was concluded that the Project would not exceed existing or planned disposal and conveyance capacity, and it can likewise be concluded for the lower demands of the Expanded Preserves Alternative; impacts are *less than significant*.

RESULT IN AN ENERGY DEMAND THAT CANNOT BE MET BY ENERGY SERVICE PROVIDERS

Energy demand was calculated by adjusting the data used for the Project analysis in the Public Services chapter. The Expanded Footprint Alternative includes 8,045 units, which is 89% of the Project total, and thus would consume roughly 69,606 MWh (69,606,000 kWh) of electricity for residential uses. The Expanded Footprint Alternative includes 1,032,640 square feet of commercial area, which is 77% of the Project total, and would thus consume roughly 34,396 MWh (34,396,000 kWh) of electricity for commercial uses. Natural gas usage was calculated using the same factors from the Project analysis (144 therms per capita and 401.03 therms per 1,000 square feet), which results in Expanded Footprint natural gas consumption of 3,290,400 therms for residential uses and 414,264 therms for commercial usage. As stated in the Project analysis, these usage totals represent a small fraction of total energy consumption in the County, and will not exceed available supply; impacts are *less than significant*.

EXCEED THE SUSTAINABLE GROUNDWATER YIELD

The Alternative results in less water consumption than the Project, and it was already concluded that the Project would not exceed the sustainable groundwater yield; impacts are *less than significant*.

ADVERSELY AFFECT GROUNDWATER RECHARGE

The same discussion included for the Project applies to this Alternative; impacts are *less than significant*.

TRAFFIC AND CIRCULATION

No Project

The traffic impact study refers to the existing condition without the Project and the cumulative condition without the Project as the “no Project”, but note that this is not the No Project Alternative. The existing condition analysis and cumulative condition “no Project” analyses include present site conditions, which is no development. It does not analyze the potential for a limited number of homes to be built on the site, though it accurately describes the conditions which would exist if the present site conditions were maintained throughout the cumulative timeframe.

The traffic volumes generated by ten single-family homes is too low to meet the screening thresholds which would typically require a traffic impact analysis. In Sacramento County, screening thresholds require the addition of 1,000 daily trips or 100 peak hour trips before a traffic study is required. Exceptions are made at the discretion of the Sacramento County Department of Transportation in cases where there is a known localized hazard or other deficiency to which the traffic engineer decides a project may contribute.

Using standard trip rates from the Institute of Transportation Engineers (8th ed.), each home could be expected to contribute 9.57 vehicle trips per day, and 1.01 trips during the peak hour. This is equivalent to approximately 96 trips per day and 10 trips during the peak travel hours. Even assuming that all of this traffic was distributed along the studied roadway segment with the smallest existing volumes (Scott Road, with a volume of 2,300 vehicles per day), the No Project would only increase traffic volumes by 4%. These are the maximum probable impacts which could result from the No Project Alternative, as it is possible that fewer homes – or even no homes – will have been constructed on the site by the year 2035. The No Project Alternative would not cause any level of service standard to be exceeded, nor would the small volumes generated cause significant impacts to the current pedestrian and bicycle facility deficiencies on Grant Line Road and Douglas Road. Just as for the Project, the No Project would not obstruct or conflict with any adopted transit plan or other non-automotive facility master plan. Impacts in both the existing and cumulative condition would be *less than significant*.

Expanded Preserves

The Expanded Preserves Alternative reduces the number of access locations on Grant Line Road from three locations to two locations, and the inclusion of larger preserves also eliminates several internal roadways. Other than these internal site changes, the vehicle network studied for this Alternative is the same as the network studied for the Project. Assumptions for non-automotive networks are also the same as the Project. Note that all tables referenced are found at the conclusion of the discussion.

EXISTING PLUS EXPANDED PRESERVES CONDITIONS

Table ALT-14 describes the trip generation assumptions for the Alternative in the existing condition. Existing conditions and existing plus Expanded Preserves conditions for all studied facilities are included in Table ALT-16, Table ALT-18, Table ALT-20, and Table ALT-21.

INTERSECTION ANALYSIS

SACRAMENTO COUNTY

The Expanded Preserves Alternative causes significant impacts to six intersections, which are listed below. The list includes both the facility impact, as well as the operating conditions that would result after the implementation of mitigation (for more detailed data on mitigation, refer to Table 22 of Appendix TR-1). Recommended facility improvements are the same as those listed for the Project in Mitigation Measure TR-1 A – F. Mitigation would improve all operating conditions from unacceptable to acceptable levels, and impacts would be *less than significant*.

- *Bradshaw Road and Jackson Road* – Operating conditions deteriorate from an acceptable LOS E to LOS F in the a.m. peak hour. Mitigation would improve operating conditions to LOS E.
- *Mather Boulevard and Douglas Road* – Operating conditions deteriorate from an acceptable LOS E to LOS F in the a.m. peak hour. This intersection meets peak hour traffic signal warrants with the addition of Expanded Preserve traffic. Mitigation would improve operating conditions to LOS D.
- *Eagles Nest Road and Jackson Road* – Operating conditions deteriorate from an acceptable LOS C to LOS F in the p.m. peak hour. This intersection meets peak hour traffic signal warrants with the addition of Expanded Preserve traffic. Mitigation would improve operating conditions to LOS B.
- *Grant Line Road and Sunrise Boulevard* – Operating conditions deteriorate from an acceptable LOS D to LOS F in the a.m. peak hour. Mitigation would improve operating conditions to LOS E.
- *Grant Line Road and White Rock Road* – Operating conditions deteriorate from an acceptable LOS C to LOS F in the a.m. peak hour. Operating conditions remain at LOS F in the p.m. peak hour, with an increase in delay of more than five seconds. This intersection meets peak hour signal warrants without and with the addition of Expanded Preserve traffic. Mitigation would improve operating conditions to LOS A.
- *Prairie City Road and White Rock Road* – Operations conditions already at an unacceptable LOS E degrade to LOS F in the a.m. peak hour, with an increase in delay of more than five seconds. Operating conditions remain at LOS F in the p.m. peak hour, with an increase in delay of more than five seconds. This

intersection meets peak hour signal warrants without and with the addition of Expanded Preserve traffic. Mitigation would improve operating conditions to LOS D.

CITY OF ELK GROVE

The intersection of Grant Line Road and Calvine Road will operate at an acceptable LOS B in the a.m. and p.m. peak hours with the Expanded Preserves traffic. Impacts are *less than significant*.

CITY OF RANCHO CORDOVA

The Expanded Preserves Alternative causes significant impacts to eight intersections, which are listed below. The list includes both the facility impact, as well as the operating conditions that would result after the implementation of mitigation (for more detailed data on mitigation, refer to Table 22 of Appendix TR-1). The facility improvements listed in Mitigation Measure ALT-3 would improve all but one operating condition (the condition at Grant Line Road and Jackson Road) from unacceptable to acceptable levels. Though operating conditions would remain unacceptable at Grant Line Road and Jackson Road, the mitigation would offset the Alternative's contribution to that unacceptable condition. As with the Project, the implementation of some of the below measures cannot be guaranteed because the facility lies wholly outside of the jurisdiction of Sacramento County. While the mitigation identified would reduce those facility impacts to less than significant levels, Sacramento County does not have the land use authority to ensure that facilities outside of its jurisdiction are constructed. Thus, although adequate mitigation is included, the impact is considered potentially *significant and unavoidable*. Note that some of the facilities below are within both the City of Rancho Cordova and Sacramento County, and they have been included in this section simply to reflect the fact that they have been analyzed using the more conservative City of Rancho Cordova LOS standards.

- *Sunrise Boulevard and White Rock Road* – Operating conditions deteriorate from an acceptable LOS C to LOS E in the a.m. peak hour. Operating conditions deteriorate from an acceptable LOS D to LOS F in the p.m. peak hour. Mitigation would improve operating conditions to LOS D.
- *Sunrise Boulevard and Douglas Road* – Operating conditions deteriorate from an acceptable LOS A to LOS F in the a.m. peak hour. Mitigation would improve operating conditions to LOS D.
- *Sunrise Boulevard and Jackson Road* – Operating conditions deteriorate from an unacceptable LOS E to LOS F in the a.m. peak hour, with an increase in V/C ratio of more than 0.05. Operating conditions deteriorate from an acceptable LOS D to LOS E in the p.m. peak hour. Mitigation would improve operating conditions to LOS D.

- *Grant Line Road and Jackson Road* – During the a.m. and p.m. peak hours, operating conditions remain at an unacceptable LOS F, with an increase in V/C ratio of more than 0.05. After mitigation the operating conditions would remain at LOS F, but the change in v/c ratio would be less than 0.05, which renders the impact less than significant.
- *Grant Line Road and Kiefer Boulevard* – During the a.m. and p.m. peak hours, operation conditions deteriorate from an acceptable LOS B to LOS F. This intersection meets peak hour signal warrants without and with the addition of Expanded Preserves traffic. Mitigation would improve operating conditions to LOS A.
- *Grant Line Road and Douglas Road* – Operating conditions deteriorate from an acceptable LOS C to LOS F in the a.m. peak hour. Operating conditions deteriorate from an acceptable LOS B to LOS F in the p.m. peak hour. This intersection meets peak hour signal warrants with the addition of Expanded Preserves traffic. Mitigation would improve operating conditions to LOS A.
- *Grant Line Road and North Loop Road* – This new intersection operates at LOS F during the a.m. and p.m. peak hours. This intersection meets peak hour signal warrants with the addition of Expanded Preserves traffic. Mitigation would improve operating conditions to LOS A.
- *Grant Line Road and University Boulevard* – This new intersection operates at LOS F during the a.m. and p.m. peak hours. This intersection meets peak hour signal warrants with the addition of Expanded Preserves traffic. Mitigation would improve operating conditions to LOS D.

CALTRANS

None of the Caltrans State Highway intersection impacts exceed the significance criteria. Impacts are *less than significant*.

ROADWAY SEGMENT ANALYSIS

SACRAMENTO COUNTY ROADWAY SEGMENTS

None of the Sacramento County roadway segment impacts exceed the significance criteria. Impacts are *less than significant*.

CITY OF ELK GROVE ROADWAY SEGMENT

The Expanded Preserves Alternative will increase the v/c ratio by more than 0.05 along the Grant Line Road segment from Sheldon Road to Calvine Road; this segment is already operating at LOS E, which is unacceptable. Mitigation Measure TR-4, for the Project, would improve operating conditions to LOS A; impacts are *less than significant*.

CITY OF RANCHO CORDOVA ROADWAY SEGMENTS

The Expanded Preserves Alternative causes significant impacts to ten roadway segments, which are listed below. The list includes both the facility impact, as well as the operating conditions that would result after the implementation of mitigation (for more detailed data on mitigation, refer to Table 23 of Appendix TR-1). The facility improvements listed in Mitigation Measure TR-5, for the Project, would improve all but one operating condition from unacceptable to acceptable levels.

- *Grant Line Road from Jackson Road to Kiefer Boulevard* – Operations deteriorate from an acceptable LOS D to LOS F. Mitigation improves operating conditions to LOS A.
- *Grant Line Road from Kiefer Boulevard to University Boulevard* – Operations deteriorate from an acceptable LOS C to LOS E. Mitigation improves operating conditions to LOS A.
- *Grant Line Road from University Boulevard to Chrysanthy Boulevard* – Operations deteriorate from an acceptable LOS C to LOS E. Mitigation improves operating conditions to LOS A.
- *Grant Line Road from Chrysanthy Boulevard to North Loop* – Operations deteriorate from an acceptable LOS C to LOS E. Mitigation improves operating conditions to LOS A.
- *Grant Line Road from North Loop to Douglas Road* – Operations deteriorate from an acceptable LOS C to LOS F. Mitigation improves operating conditions to LOS B.
- *Grant Line Road from Douglas Road to White Rock Road* – Operations deteriorate from an acceptable LOS D to LOS E. Mitigation improves operating conditions to LOS A.
- *Jackson Road from Sunrise Boulevard to Grant Line Road* – Operations deteriorate from an acceptable LOS D to LOS E. Mitigation improves operating conditions to LOS A.
- *Douglas Road from Sunrise Boulevard to Rancho Cordova Parkway* – Operations deteriorate from an acceptable LOS A to LOS F. Mitigation improves operating conditions to LOS A.
- *Douglas Road from Rancho Cordova Parkway to Grant Line Road* – Operations deteriorate from an acceptable LOS A to LOS F. Mitigation improves operating conditions to LOS A.
- *Sunrise Boulevard from Folsom Boulevard to White Rock Road* – Operations remain at an unacceptable LOS E, with an increase in V/C ratio of more than 0.05. No mitigation is available (see below discussion).

The same discussion provided for the intersection analysis applies here. While the mitigation identified would reduce those facility impacts to less than significant levels, Sacramento County does not have the land use authority to ensure that facilities outside of its jurisdiction are constructed. Thus, although adequate mitigation is included for most facilities, the impact is considered potentially *significant and unavoidable*. In addition, the only mitigation available for Sunrise Boulevard would be to widen the roadway, but this roadway is at full build-out according to the City of Rancho Cordova General Plan. Widening would require a General Plan Amendment, as well as significant acquisition of right-of-way which would involve property losses and the loss of improvements on what is currently private property. This being the case, the mitigation is considered infeasible, and impacts to this facility are *significant and unavoidable*.

CALTRANS FREEWAYS

MAINLINE

The Expanded Preserves Alternative causes significant impacts to two freeway segments, which are listed below. The list includes both the facility impact, as well as the operating conditions that would result after the implementation of mitigation. The facility improvements listed in Mitigation Measure TR-6 would improve all operating conditions from unacceptable to acceptable levels, but Sacramento County does not have the land use authority to ensure that facilities outside of its jurisdiction are constructed. Thus, although adequate mitigation is included for the affected facilities, the impact is considered potentially *significant and unavoidable*.

- *Westbound US 50 from Hazel Avenue to Sunrise Boulevard* – There is an increase in traffic volume on this freeway segment already operating at LOS F in the a.m. peak hour. Mitigation would improve operating conditions to LOS E.
- *Eastbound US 50 from Sunrise Boulevard to Hazel Avenue* – There is an increase in traffic volume on this freeway segment already operating at LOS F. Mitigation would improve operating conditions to LOS D.

RAMP JUNCTIONS

Expanded Preserves Alternative traffic does not cause a level of service standard to be exceeded, nor does it significantly contribute to an existing unacceptable operating condition; impacts are *less than significant*.

BICYCLE AND PEDESTRIAN ANALYSIS

The impacts of the Alternative are nearly identical to those described for the Project. Though involving somewhat less traffic, the Alternative nonetheless contributes substantial additional volume to Grant Line Road and Douglas Road, which are deficient for bicycle and pedestrian facilities. The same mitigation included for the Project (Mitigation Measure TR-7) would apply to this Alternative; mitigation will reduce impacts to *less than significant* levels.

TRANSIT ANALYSIS

The impacts of the Alternative are nearly identical to those described for the Project. The Alternative assumes that an internal transit system will still be provided, and this system would be sufficient to serve the needs of residents. Development within the site will not conflict with the implementation of any adopted transit plan. Impacts are *less than significant*.

MITIGATION MEASURES:

ALT-3. The applicant shall comply with Mitigation Measure TR-2 C, D, G, and J, and shall modify TR-2 B, E, F and H to the following:

Sunrise Boulevard and White Rock Road – Provide overlap phasing on the eastbound approach.

Grant Line Road and Jackson Road – Provide a left turn lane and a through-right shared turn lane on the eastbound, westbound, and northbound approaches. Provide a separate left turn lane, a through lane and a separate right turn lane on the southbound approach.

Grant Line Road and Kiefer Boulevard – Construct a new traffic signal. Provide a left turn lane, a through lane and a through-right turn shared lane on the northbound approach; provide a left turn lane and a through-right turn shared lane on the eastbound, westbound, and southbound approaches. To be consistent with the segment mitigations a second southbound through lane is included.

Grant Line Road and North Loop Road – Construct a new traffic signal. Provide a through lane and a separate right turn lane on the northbound approach, dual left turn lanes and one through on the southbound approach, and one left turn lane and one free-right turn lane on the westbound approach. Also an extra northbound departure lane is needed for the westbound free-right movement. To be consistent with the segment mitigations a second northbound and southbound through lane is included.

CUMULATIVE PLUS EXPANDED PRESERVES CONDITIONS

Expanded Preserves trip generation for the cumulative scenario are provided in Table ALT-15. Cumulative conditions and cumulative plus Expanded Preserves conditions for all studied facilities are included in Table ALT-17, Table ALT-19, Table ALT-20, and Table ALT-21.

INTERSECTION ANALYSIS**SACRAMENTO COUNTY**

The Expanded Preserves Alternative does not cause a level of service standard to be exceeded, nor does it contribute substantially to any existing deficiency; impacts are *less than significant*.

CITY OF FOLSOM

The Expanded Preserves Alternative does not cause a level of service standard to be exceeded, nor does it contribute substantially to any existing deficiency; impacts are *less than significant*.

CITY OF ELK GROVE

The Expanded Preserves Alternative does not cause a level of service standard to be exceeded, nor does it contribute substantially to any existing deficiency; impacts are *less than significant*.

CITY OF RANCHO CORDOVA

The Expanded Preserves Alternative causes significant impacts to four intersections, which are listed below. The list includes both the facility impact, as well as the operating conditions that would result after the implementation of mitigation (for more detailed data on mitigation, refer to Table 31 of Appendix TR-1). The facility improvements listed in Mitigation Measure ALT-4 would improve all but one operating condition from unacceptable to acceptable levels. Note that the facility improvement for Sunrise Boulevard and Douglas Road is identical to Project improvements, but that the improvements for the Grant Line Road facilities are not the same as the Project improvements.

- *Sunrise Boulevard and Douglas Road* – Operating conditions deteriorate from an unacceptable LOS E to LOS F in the a.m. peak hour, with an increase in V/C ratio of greater than 0.05. Operating conditions deteriorate from an acceptable LOS D to LOS E in the p.m. peak hour. Mitigation would improve operating conditions to LOS E, which remains unacceptable, but the Alternative would no longer result in a change of v/c ratio of more than 0.05.
- *Grant Line Road and Douglas Road* – Operating conditions deteriorate from an acceptable LOS A to LOS E in the a.m. and p.m. peak hours. Mitigation would improve operating conditions to LOS C.
- *Grant Line Road and North Loop Road* – This new intersection operates at LOS F during the a.m. and p.m. peak hours. Mitigation would improve operating conditions to LOS C.
- *Sunrise Boulevard and International Drive* – Operating conditions deteriorate from an acceptable LOS D to LOS E in the a.m. peak hour. No feasible mitigation is available (see below discussion).

Sacramento County does not have the land use authority to ensure that facilities outside of its jurisdiction are constructed. Thus, although adequate mitigation is included for the Grant Line Road and Douglas Road intersection, the impact is considered potentially *significant and unavoidable*. Sunrise Boulevard and International Drive was already modeled at maximum capacity, and a General Plan Amendment would be required to further increase capacity. Since neither right-of-way nor funding for this further expansion have been identified or acquired, the mitigation is considered infeasible. Impacts to the Sunrise Boulevard and International Drive intersection would remain *significant and unavoidable*.

CALTRANS

The Expanded Preserves Alternative does not cause a level of service standard to be exceeded, nor does it contribute substantially to any existing deficiency; impacts are *less than significant*.

ROADWAY SEGMENT ANALYSIS

SACRAMENTO COUNTY

The Expanded Preserves Alternative does not cause a level of service standard to be exceeded, nor does it contribute substantially to any existing deficiency; impacts are *less than significant*.

CITY OF ELK GROVE

The Elk Grove Roadway Segment does not exceed the impact significance criteria. Impacts are less than significant.

CITY OF RANCHO CORDOVA

The Expanded Preserves Alternative causes significant impacts to two roadway segments, which are listed below. The list includes both the facility impact, as well as the operating conditions that would result after the implementation of mitigation (for more detailed data on mitigation, refer to Table 32 of Appendix TR-1). The facility improvements listed in Mitigation Measure TR-10.C and TR-10.D, for the Project, would improve all operating conditions from unacceptable to acceptable levels, and impacts would be *less than significant*.

- *Grant Line Road from North Loop to Douglas Road* – Operations deteriorate from an acceptable LOS B to LOS F. Mitigation would improve operating conditions to LOS D.
- *Grant Line Road from Douglas Road to White Rock Road* – Operations deteriorate from an unacceptable LOS E to LOS F, with an increase in V/C ratio of greater than 0.05. Mitigation would improve operating conditions to LOS C.

CALTRANS FREEWAYS

MAINLINE

The Expanded Preserves Alternative causes significant impacts to five freeway segments, which are listed below. Further widening of these freeway segments would be required in order to reduce impacts, but Caltrans currently has no plans to expand the segments beyond the build-out capacities assumed in this analysis, nor are any funding mechanisms established to collect money to fund such improvements. No feasible mitigation exists to offset impacts to freeway segments; impacts are *significant and unavoidable*.

- *Eastbound US 50 from Watt Avenue to Bradshaw Road – LOS F in a.m. and p.m. peak hours.*
- *Eastbound US 50 from Rancho Cordova Parkway to Hazel Avenue – LOS F in a.m. and p.m. peak hours.*
- *Westbound US 50 from Hazel Avenue to Rancho Cordova Parkway – LOS F in the a.m. peak hour.*
- *Westbound US 50 from Bradshaw Road to Watt Avenue – LOS F in a.m. and p.m. peak hours.*
- *Westbound US 50 from Watt Avenue to Power Inn/Howe Avenue – LOS F in a.m. peak hour.*

RAMP JUNCTIONS

The Expanded Preserves Alternative causes significant impacts to three freeway ramps, which are listed below. Caltrans currently has no plans to expand the following ramp junctions beyond the build-out capacities assumed in this analysis, nor are any funding mechanisms established to collect monies to fund such improvements. No feasible mitigation exists to offset impacts to freeway ramps; impacts are *significant and unavoidable*.

- *Eastbound US 50 Slip Ramp Entrance from Watt Avenue – LOS F in a.m. and p.m. peak hours.*
- *Westbound US 50 Exit Ramp to Watt Avenue – LOS F in a.m. peak hour.*
- *Westbound US 50 Slip Ramp Entrance from Watt Avenue – LOS F in a.m. peak hour.*

BICYCLE AND PEDESTRIAN ANALYSIS

The impacts of the Alternative are nearly identical to those described for the Project. By the cumulative time horizon, improvements will have been installed on Grant Line Road

and Douglas Road as part of buildout within Rancho Cordova, and as part of other improvements to Grant Line Road consistent with the Sacramento County General Plan, the Sacramento County Bicycle Master Plan, and the City of Rancho Cordova General Plan. The Alternative will not eliminate or adversely affect bicycle or pedestrian facilities, result in unsafe conditions, or interfere with implementation of planned bicycle or pedestrian facilities; impacts are *less than significant*.

TRANSIT ANALYSIS

The impacts of the Alternative are nearly identical to those described for the Project. The Alternative assumes that an internal transit system will still be provided, and this system would be sufficient to serve the needs of residents. Development within the site will not conflict with the implementation of any adopted transit plan. Impacts are *less than significant*.

MITIGATION MEASURES:

ALT-4. The applicant shall be responsible for a fair share of the below mitigation measures. The fair share shall be calculated to the satisfaction of Sacramento County Department of Transportation, in consultation with the City of Rancho Cordova, and may be up to 100% of the cost of the improvements.

- A. *Sunrise Boulevard and Douglas Road* – Provide overlap phasing on the eastbound and westbound right turns.
- B. *Grant Line Road and Douglas Road* – Provide an eastbound free-right turn lane. Also a third southbound departure lane is needed for the eastbound free-right movement.
- C. *Grant Line Road and North Loop Road* – Provide a free-right turn lane on the westbound approach. Also a third northbound departure lane is needed for the westbound free-right movement.

Table ALT-14: Existing Plus Expanded Preserves Trip Generation

Land Use	Units	Vehicle Trip End Rates ¹			Daily Vehicle Trip Rates ^{1,2}			Vehicle Trips Ends			Vehicle Trips		
		AM	PM	Daily	AM	PM	Daily	AM	PM	Daily	AM	PM	Daily
Single Family DU	4,076	0.8	0.9	9.8	0.6	0.7	7.6	3,061	3,478	39,758	2,389	2,710	30,934
Multi Family DU	1,760	0.5	0.5	6.2	0.4	0.4	4.7	798	954	10,915	617	731	8,323
Retail Employee	584	1.0	1.7	17.2	0.7	1.2	12.2	564	964	10,035	415	680	7,131
Other Employee	866	0.3	0.3	3.5	0.2	0.3	2.9	218	269	3,002	178	220	2,494
K12 Students	5,209	0.4	0.2	1.8	0.3	0.1	1.3	1,966	865	9,147	1,476	639	6,722
<i>SubTotal</i>								<i>6,607</i>	<i>6,530</i>	<i>72,858</i>	<i>5,074</i>	<i>4,980</i>	<i>55,604</i>
University Students	6,000	0.1	0.2	1.8	0.1	0.1	1.6	765	1,006	10,975	685	900	9,772
<i>Total</i>								<i>7,372</i>	<i>7,536</i>	<i>83,833</i>	<i>5,758</i>	<i>5,880</i>	<i>65,376</i>
<i>External Trips³</i>											<i>4,144</i>	<i>4,224</i>	<i>46,919</i>
NOTES: 1. Rates in the table may not compute exactly due to rounding. 2. Vehicle trip rates reflect internalization reduction. For trips internal to the Cordova Hills Project, half the trip is attributed to the origin and half to the destination. 3. Approximate of vehicle trips traveling outside the Cordova Hills specific plan Vehicle trip summary based on modified version of the SACMET travel demand forecasting (TDF) model. Source: DKS Associates, 2011													

Table ALT-15: Cumulative Plus Expanded Preserves Trip Generation

Land Use	Units	Vehicle Trip End Rates ¹			Daily Vehicle Trip Rates ^{1, 2}			Vehicle Trips Ends			Vehicle Trips		
		AM	PM	Daily	AM	PM	Daily	AM	PM	Daily	AM	PM	Daily
Single Family DU	4,076	0.7	0.8	9.5	0.6	0.6	7.3	2,972	3,380	38,741	2,298	2,610	29,881
Multi Family DU	1,760	0.5	0.5	6.2	0.3	0.4	4.7	793	950	10,918	613	728	8,342
Retail Employee	584	1.0	1.7	18.0	0.8	1.3	13.2	597	1,010	10,540	453	734	7,721
Other Employee	866	0.3	0.3	3.6	0.2	0.3	3.2	236	279	3,119	202	241	2,733
K12 Students	5,209	0.4	0.2	1.8	0.3	0.1	1.3	1,990	879	9,337	1,500	652	6,911
<i>SubTotal</i>								6,588	6,498	72,656	5,067	4,965	55,588
University Students	6,000	0.1	0.2	1.8	0.1	0.1	1.6	769	1,010	11,020	690	905	9,841
<i>Total</i>								7,357	7,508	83,675	5,757	5,870	65,429
<i>External Trips³</i>											4,157	4,232	47,183
NOTES: 1. Rates in the table may not compute exactly due to rounding. 2. Vehicle trip rates reflect internalization reduction. For trips internal to the Cordova Hills Project, half the trip is attributed to the origin and half to the destination. 3. Approximate of vehicle trips traveling outside the Cordova Hills specific plan Vehicle trip summary based on modified version of the SACMET travel demand forecasting (TDF) model. Source: DKS Associates, 2011													

Table ALT-16: Existing Conditions Expanded Preserves Intersection Operating Conditions

Intersection			Level of Service Methodology		AM Peak Hour						PM Peak Hour					
					Existing			Existing Plus Expanded Preserves			Existing			Existing Plus Expanded Preserves		
ID #	North-South Street	East-West Street	Analysis Methodology	Policy	Meets Signal Warrant	V/C or Delay ¹	LOS	Meets Signal Warrant	V/C or Delay ¹	LOS	Meets Signal Warrant	V/C or Delay ¹	LOS	Meets Signal Warrant	V/C or Delay ¹	LOS
Sacramento County																
1	S Watt Ave	Jackson Rd(SR-16)	Circular 212 Planning	E	--	0.80	C	--	0.90	D	--	0.90	D	--	0.94	E
2	Bradshaw Rd	Jackson Rd(SR-16)	Circular 212 Planning	E	--	0.96	E	--	1.07	F	--	0.87	D	--	0.97	E
3	Mather Blvd	Douglas Rd	2000 HCM 4-Way Stop	E	No	47.5	E	Yes	82.2	F	No	12.9	B	Yes	16.5	C
4	Excelsior Rd	Jackson Rd(SR-16)	Circular 212 Planning	E	--	0.57	A	--	0.65	B	--	0.55	A	--	0.63	B
5	Eagles Nest Rd	Jackson Rd(SR-16)	2000 HCM Unsignalized	E	No	12.5	B	No	21.8	C	No	21.3	C	Yes	113.5	F
6	Grant Line Rd	Sunrise Blvd	Circular 212 Planning	E	--	0.81	D	--	1.07	F	--	0.93	E	--	0.85	D
7	Grant Line Rd	White Rock Rd	2000 HCM Unsignalized	E	No	17.5	C	No	200.8	F	Yes	80.8	F	Yes	274.3	F
8	Prairie City Rd	White Rock Rd	2000 HCM 4-Way Stop	D	Yes	35.3	E	Yes	91.1	F	Yes	71.2	F	Yes	122.9	F
9	Scott Rd (W)	White Rock Rd	2000 HCM Unsignalized	D	No	14.2	B	Yes	17.9	C	No	17.1	C	No	18.5	C
10	Scott Rd (E)	White Rock Rd	2000 HCM 4-Way Stop	D	Yes	13.2	B	Yes	15.0	B	Yes	20.4	C	Yes	19.7	C
34	Town Center Dr	North Loop Rd	Circular 212 Planning	E	--	--	--	--	--	--	--	--	--	--	--	--
35	Town Center Dr	Chrysanthy Blvd	Circular 212 Planning	E	--	--	--	--	--	--	--	--	--	--	--	--
36	Town Center Dr	University Blvd	Circular 212 Planning	E	--	--	--	--	0.36	A	--	--	--	--	0.52	A
37	Street "A"	North Loop Rd	FHWA Roundabout	E	--	--	--		--	--	--	--	--		--	--
38	Street "A"	University Blvd	FHWA Roundabout	E	--	--	--		6.3	A	--	--	--		8.5	A
39	Street "A"	Street "B"	Circular 212 Planning	E	--	--	--	--	0.24	A	--	--	--	--	0.31	A
40	Street "C"	University Blvd	FHWA Roundabout	E		--	--		5.4	A		--	--		5.1	A
41	Street "D"	North Loop Rd	Circular 212 Planning	E	--	--	--	--	0.67	B	--	--	--	--	0.60	B
42	Street "D"	University Blvd	FHWA Roundabout	E	--	--	--		6.2	A	--	--	--		6.7	A
43	Street "D"	Street "A"	FHWA Roundabout	E	--	--	--		3.3	A	--	--	--		3.3	A
44	School Access	North Loop Rd	Circular 212 Planning	E	--	--	--	--	0.81	D	--	--	--	--	0.36	A
45	Street "F"	North Loop Rd	Circular 212 Planning	E	--	--	--	--	0.23	A	--	--	--	--	0.14	A
City of Elk Grove																
11	Grant Line Rd	Calvine Rd	2000 HCM Operations	D	--	16.3	B	--	16.1	B	--	13.1	B	--	14.9	B
City of Rancho Cordova																
12	Zinfandel Dr	White Rock Rd	Circular 212 Planning	D	--	0.61	B	--	0.64	B	--	0.94	E	--	0.99	E
13	Sunrise Blvd	Folsom Blvd	Circular 212 Planning	D	--	0.76	C	--	0.82	D	--	0.64	B	--	0.65	B

Intersection			Level of Service Methodology		AM Peak Hour						PM Peak Hour					
					Existing			Existing Plus Expanded Preserves			Existing			Existing Plus Expanded Preserves		
ID #	North-South Street	East-West Street	Analysis Methodology	Policy	Meets Signal Warrant	V/C or Delay ¹	LOS	Meets Signal Warrant	V/C or Delay ¹	LOS	Meets Signal Warrant	V/C or Delay ¹	LOS	Meets Signal Warrant	V/C or Delay ¹	LOS
14	Sunrise Blvd	White Rock Rd	Circular 212 Planning	D	--	0.74	C	--	1.00	E	--	0.82	D	--	1.09	F
15	Sunrise Blvd	Douglas Rd	Circular 212 Planning	D	--	0.52	A	--	1.04	F	--	0.45	A	--	0.75	C
16	Sunrise Blvd	Jackson Rd(SR-16)	Circular 212 Planning	D	--	0.95	E	--	1.13	F	--	0.84	D	--	0.99	E
17	Grant Line Rd	Jackson Rd(SR-16)	Circular 212 Planning	D	--	1.04	F	--	1.60	F	--	1.13	F	--	1.47	F
18	Grant Line Rd	Kiefer Blvd	2000 HCM 4-Way Stop	D	Yes	13.6	B	Yes	224.6	F	No	14.4	B	Yes	173.0	F
19	Grant Line Rd	Douglas Rd	2000 HCM Unsignalized	D	No	21.6	C	Yes	[xxxxx]	F	No	12.0	B	Yes	[xxxxx]	F
30	Grant Line Rd	North Loop Rd	2000 HCM Unsignalized	D		--	--	Yes	[xxxxx]	F		--	--	Yes	[xxxxx]	F
31	Grant Line Rd	Chrysanthy Blvd	2000 HCM Unsignalized	D		--	--	--	--	--		--	--	--	--	--
32	Grant Line Rd	University Blvd	2000 HCM Unsignalized	D		--	--	Yes	[xxxxx]	F		--	--	Yes	[xxxxx]	F
Caltrans State Highways																
20	Mather Field Rd	US-50 WB Ramps	2000 HCM Operations	E	--	20.6	C	--	20.5	C	--	16.3	B	--	16.7	B
21	Mather Field Rd	US-50 EB Ramps	2000 HCM Operations	E	--	21.7	C	--	21.5	C	--	17.3	B	--	17.1	B
22	Zinfandel Dr	US-50 WB Ramps	2000 HCM Operations	E	--	17.3	B	--	17.6	B	--	14.3	B	--	14.2	B
23	Zinfandel Dr	US-50 EB Ramps	2000 HCM Operations	E	--	28.6	C	--	31.0	C	--	134.6	F	--	130.1	F
24	Sunrise Blvd	US-50 WB Ramps	2000 HCM Operations	E	--	14.2	B	--	13.4	B	--	13.0	B	--	12.6	B
25	Sunrise Blvd	US-50 EB Ramps	2000 HCM Operations	E	--	19.2	B	--	18.8	B	--	17.6	B	--	17.3	B
26	Prairie City Rd	US-50 WB Ramps	2000 HCM Operations	E	--	20.2	C	--	20.1	C	--	23.0	C	--	23.3	C
27	Prairie City Rd	US-50 EB Ramps	2000 HCM Operations	E	--	17.0	B	--	17.1	B	--	16.7	B	--	17.3	B
28	Scott Rd	US-50 WB Ramps	2000 HCM Operations	E	--	19.7	B	--	20.0	B	--	12.5	B	--	11.9	B
29	Scott Rd	US-50 EB Ramps	2000 HCM Operations	E	--	16.3	B	--	16.4	B	--	15.1	B	--	15.4	B
<p>NOTES:</p> <p>¹ V/C = Volume-to-Capacity ratio, [xxxxx] indicates that the delay exceeds 500 seconds</p> <p>Delay: At 4-Way Stop intersections (based on the 2000 HCM 4-Way Stop methodology) the reported delay is the average intersection delay.</p> <p>At unsignalized, 2-Way Stop intersections (based on the 2000 HCM Unsignalized methodology), the reported delay is for the worst approach.</p> <p>At signalized intersections (based on the 2000 HCM Operations), the reported delay is the intersection delay.</p> <p>Bold indicates deficiency. Shaded areas indicate impact.</p> <p>Source: DKS Associates, 2011</p>																

Table ALT-17: Cumulative Conditions Expanded Preserves Intersection Operating Conditions

Intersection			Level of Service Methodology		AM Peak Hour				PM Peak Hour			
					Cumulative		Cumulative Plus Expanded Preserves		Cumulative		Cumulative Plus Expanded Preserves	
ID #	North-South Street	East-West Street	Analysis Methodology	Policy	v/c or Delay ¹	LOS	v/c or Delay ¹	LOS	v/c or Delay ¹	LOS	v/c or Delay ¹	LOS
Sacramento County												
1	S Watt Ave	Jackson Rd(SR-16)	Circular 212 Planning	E	1.27	F	1.27	F	1.11	F	1.12	F
2	Bradshaw Rd	Jackson Rd(SR-16)	Circular 212 Planning	E	0.95	E	0.98	E	1.18	F	1.17	F
3	Zinfandel Dr ²	Mather Blvd ²	Circular 212 Planning	E	0.42	A	0.45	A	0.61	B	0.68	B
4	Excelsior Rd	Jackson Rd(SR-16)	Circular 212 Planning	E	0.72	C	0.76	C	1.14	F	1.15	F
5	Eagles Nest Rd	Jackson Rd(SR-16)	Circular 212 Planning	E	0.39	A	0.39	A	0.60	A	0.62	B
6	Grant Line Rd	Sunrise Blvd	Circular 212 Planning	E	0.89	D	0.93	E	1.11	F	1.10	F
7	Grant Line Rd	White Rock Rd	Circular 212 Planning	E	0.77	C	0.84	D	0.85	D	0.90	E
9	Scott Rd (W)	White Rock Rd	Circular 212 Planning	D	0.54	A	0.60	B	0.53	A	0.56	A
34	Town Center Dr	North Loop Rd	Circular 212 Planning	E	--	--	--	--	--	--	--	--
35	Town Center Dr	Chrysanthy Blvd	Circular 212 Planning	E	--	--	--	--	--	--	--	--
36	Town Center Dr	University Blvd	Circular 212 Planning	E	--	--	0.35	A	--	--	0.53	A
37	Street "A"	North Loop Rd	FHWA Roundabout	E	--	--	--	--	--	--	--	--
38	Street "A"	University Blvd	FHWA Roundabout	E	--	--	6.4	A	--	--	8.8	A
39	Street "A"	Street "B"	Circular 212 Planning	E	--	--	0.25	A	--	--	0.32	A
40	Street "C"	University Blvd	FHWA Roundabout	E	--	--	5.0	A	--	--	4.8	A
41	Street "D"	North Loop Rd	Circular 212 Planning	E	--	--	0.63	B	--	--	0.53	A
42	Street "D"	University Blvd	FHWA Roundabout	E	--	--	5.7	A	--	--	5.9	A
43	Street "D"	Street "A"	FHWA Roundabout	E	--	--	3.3	A	--	--	3.4	A
44	School Access	North Loop Rd	Circular 212 Planning	E	--	--	0.85	D	--	--	0.39	A
45	Street "F"	North Loop Rd	Circular 212 Planning	E	--	--	0.23	A	--	--	0.15	A
46	Vineyard Rd	Kiefer Blvd	Circular 212 Planning	E	0.90	D	0.94	E	0.90	D	0.93	E
47	Vineyard Rd	Jackson Rd(SR-16)	Circular 212 Planning	E	0.76	C	0.77	C	0.96	E	0.95	E
48	Excelsior Rd	Kiefer Blvd	Circular 212 Planning	E	0.71	C	0.76	C	0.59	A	0.55	A
50	Zinfandel Dr	Douglas Rd	Circular 212 Planning	E	0.53	A	0.57	A	0.72	C	0.76	C
51	Eagles Nest Rd	Kiefer Blvd	Circular 212 Planning	E	0.64	B	0.69	B	0.62	B	0.68	B
City of Folsom												
8	Prairie City Rd	White Rock Rd	2000 HCM Operations	C	16.9	B	18.8	B	19.4	B	20.6	C
10	Scott Rd (E)	White Rock Rd	2000 HCM Operations	C	33.2	C	34.3	C	15.5	B	15.4	B

Intersection			Level of Service Methodology		AM Peak Hour				PM Peak Hour			
					Cumulative		Cumulative Plus Expanded Preserves		Cumulative		Cumulative Plus Expanded Preserves	
ID #	North-South Street	East-West Street	Analysis Methodology	Policy	v/c or Delay ¹	LOS	v/c or Delay ¹	LOS	v/c or Delay ¹	LOS	v/c or Delay ¹	LOS
City of Elk Grove												
11	Grant Line Rd	Calvine Rd	2000 HCM Operations	D	11.5	B	11.5	B	8.5	A	8.9	A
City of Rancho Cordova												
12	Zinfandel Dr	White Rock Rd	Circular 212 Planning	D	0.80	D	0.80	C	1.28	F	1.27	F
13	Sunrise Blvd	Folsom Blvd	Circular 212 Planning	D	1.01	F	0.97	E	0.80	D	0.79	C
14	Sunrise Blvd	White Rock Rd	Circular 212 Planning	D	0.60	B	0.63	B	0.72	C	0.72	C
15	Sunrise Blvd	Douglas Rd	Circular 212 Planning	D	0.90	E	1.00	F	0.88	D	0.90	E
16	Sunrise Blvd	Jackson Rd(SR-16)	Circular 212 Planning	D	0.91	E	0.93	E	0.79	C	0.80	D
17	Grant Line Rd	Jackson Rd(SR-16)	Circular 212 Planning	D	0.63	B	0.69	B	0.63	B	0.63	B
18	Grant Line Rd	Kiefer Blvd	Circular 212 Planning	D	0.61	B	0.73	C	0.72	C	0.78	C
19	Grant Line Rd	Douglas Rd	Circular 212 Planning	D	0.58	A	0.88	D	0.56	A	1.00	E
30	Grant Line Rd	North Loop Rd	Circular 212 Planning	D	--	--	1.26	F	--	--	1.03	F
31	Grant Line Rd	Chrysanthy Blvd	Circular 212 Planning	D	0.48	A	0.60	B	0.39	A	0.69	B
32	Grant Line Rd	University Blvd	Circular 212 Planning	D	--	--	0.75	C	--	--	0.86	D
49	Zinfandel Dr	International Rd	Circular 212 Planning	D	0.90	E	0.92	E	1.23	F	1.24	F
52	Sunrise Blvd	International Dr	Circular 212 Planning	D	0.87	D	0.91	E	0.79	C	0.81	D
53	Sunrise Blvd	Chrysanthy Blvd	Circular 212 Planning	D	0.67	B	0.75	C	0.54	A	0.53	A
54	Sunrise Blvd	Kiefer Blvd	Circular 212 Planning	D	0.59	A	0.62	B	0.58	A	0.64	B
55	Rancho Cordova Pkwy	White Rock Rd	Circular 212 Planning	D	0.69	B	0.73	C	0.73	C	0.74	C
56	Rancho Cordova Pkwy	Douglas Rd	Circular 212 Planning	D	0.73	C	0.69	B	1.08	F	1.01	F
57	Rancho Cordova Pkwy	Chrysanthy Blvd	Circular 212 Planning	D	0.61	B	0.65	B	0.59	A	0.64	B
58	Rancho Cordova Pkwy	Kiefer Blvd	Circular 212 Planning	D	0.54	A	0.58	A	0.53	A	0.54	A
59	Rancho Cordova Pkwy	Grant Line Rd	Circular 212 Planning	D	0.46	A	0.54	A	0.45	A	0.49	A
60	International Dr	White Rock Rd	Circular 212 Planning	D	0.36	A	0.36	A	0.44	A	0.45	A
61	Americanos Blvd	Douglas Rd	Circular 212 Planning	D	0.45	A	0.49	A	0.68	B	0.73	C
62	Americanos Blvd	Chrysanthy Blvd	Circular 212 Planning	D	0.27	A	0.40	A	0.36	A	0.45	A
Caltrans State Highways												
20	Mather Field Rd	US-50 WB Ramps	2000 HCM Operations	E	23.7	C	22.8	C	22.5	C	22.3	C
21	Mather Field Rd	US-50 EB Ramps	2000 HCM Operations	E	36.5	D	35.3	D	19.7	B	19.7	B
22	Zinfandel Dr	US-50 WB Ramps	2000 HCM Operations	E	15.9	B	15.8	B	20.2	C	20.2	C
23	Zinfandel Dr	US-50 EB Ramps	2000 HCM Operations	E	57.4	E	58.1	E	122.4	F	121.4	F

Intersection			Level of Service Methodology		AM Peak Hour				PM Peak Hour			
					Cumulative		Cumulative Plus Expanded Preserves		Cumulative		Cumulative Plus Expanded Preserves	
ID #	North-South Street	East-West Street	Analysis Methodology	Policy	v/c or Delay ¹	LOS	v/c or Delay ¹	LOS	v/c or Delay ¹	LOS	v/c or Delay ¹	LOS
24	Sunrise Blvd	US-50 WB Ramps	2000 HCM Operations	E	23.4	C	23.8	C	31.1	C	30.0	C
25	Sunrise Blvd	US-50 EB Ramps	2000 HCM Operations	E	21.6	C	21.3	C	19.8	B	20.0	B
26	Prairie City Rd	US-50 WB Ramps	2000 HCM Operations	E	20.1	C	20.3	C	34.5	C	35.5	D
27	Prairie City Rd	US-50 EB Ramps	2000 HCM Operations	E	12.1	B	12.0	B	14.7	B	14.7	B
28	Scott Rd	US-50 WB Ramps	2000 HCM Operations	E	15.3	B	15.4	B	13.7	B	13.8	B
29	Scott Rd	US-50 EB Ramps	2000 HCM Operations	E	19.4	B	19.5	B	16.1	B	16.0	B
63	Rancho Cordova Pkwy	US-50 WB Ramps	2000 HCM Operations	E	20.2	C	20.3	C	25.1	C	25.6	C
64	Rancho Cordova Pkwy	US-50 EB Ramps	2000 HCM Operations	E	12.2	B	12.5	B	21.1	C	21.4	C
65	Oak Ave Pkwy	US-50 WB Ramps	2000 HCM Operations	E	14.1	B	14.4	B	9.0	A	8.9	A
66	Oak Ave Pkwy	US-50 EB Ramps	2000 HCM Operations	E	19.2	B	19.2	B	21.5	C	21.4	C
<p>NOTES:</p> <p>¹ V/C = Volume-to-Capacity ratio, Delay: At 4-Way Stop intersections (based on the 2000 HCM 4-Way Stop methodology) the reported delay is the average intersection delay.</p> <p>² The Zinfandel Drive extension project includes realigning Mather Boulevard to connect at Zinfandel Drive (see Figure 16)</p> <p>At unsignalized, 2-Way Stop intersections (based on the 2000 HCM Unsignalized methodology), the reported delay is for the worst approach.</p> <p>At signalized intersections (based on the 2000 HCM Operations), the reported delay is the intersection delay.</p> <p>Bold indicates deficiency. Shaded areas indicate impact.</p> <p>Source: DKS Associates, 2011</p>												

Table ALT-18: Existing and Existing Plus Expanded Preserves Roadway Operating Conditions

ID #	Roadway Segment	Facility	Lanes	Policy	Existing			Expanded Preserves		
					Volume	V/C	LOS	Volume	V/C	LOS
1	Grant Line Rd - Sheldon Rd to Calvine Rd	Rural S	2	D	12,800	0.64	E	14,000	0.70	E
2	Grant Line Rd - Calvine Rd to Sunrise Blvd	Rural S	2	E	14,200	0.71	E	16,300	0.82	E
3	Grant Line Rd - Sunrise Blvd to Jackson Rd (SR-16)	Rural S	2	E	7,900	0.40	D	12,400	0.62	E
4	Grant Line Rd - Jackson Rd (SR-16) to Kiefer Blvd	Rural S	2	D	7,800	0.39	D	20,100	1.01	F
5	Grant Line Rd - Kiefer Blvd to University Blvd	Rural S	2	D	6,500	0.33	C	19,800	0.99	E
6	Grant Line Rd - University Blvd to Chrysanthy Blvd	Rural S	2	D	6,500	0.33	C	12,700	0.64	E
7	Grant Line Rd - Chrysanthy Blvd to North Loop	Rural S	2	D	6,500	0.33	C	12,700	0.64	E
8	Grant Line Rd - North Loop to Douglas Rd	Rural S	2	D	6,500	0.33	C	32,600	1.63	F
9	Grant Line Rd - Douglas Rd to White Rock Rd	Rural NS	2	D	9,600	0.56	D	16,800	0.99	E
10	White Rock Rd - Kilgore Rd to Sunrise Blvd	Arterial M	6	E	27,000	0.50	A	35,200	0.65	B
11	White Rock Rd - Sunrise Blvd to Fitzgerald Rd	Arterial M	4	E	9,800	0.27	A	11,000	0.31	A
12	White Rock Rd - Fitzgerald Rd to Grant Line Rd	Rural NS	2	E	3,400	0.20	B	4,700	0.28	C
13	White Rock Rd - Grant Line Rd to Prairie City Rd	Rural NS	2	E	9,900	0.58	D	14,500	0.85	E
14	White Rock Rd - Prairie City Rd to Scott Rd (South)	Rural NS	2	D	7,000	0.41	D	8,500	0.50	D
15	White Rock Rd - Scott Rd (South) to Scott Rd (North)	Rural NS	2	D	7,000	0.41	D	8,400	0.49	D

ID #	Roadway Segment	Facility	Lanes	Policy	Existing			Expanded Preserves		
					Volume	V/C	LOS	Volume	V/C	LOS
16	White Rock Rd - Scott Rd (North) to County Line	Rural NS	2	D	7,500	0.44	D	7,800	0.46	D
17	Jackson Rd (SR-16) - Watt Ave to Bradshaw Rd	Arterial M	2	E	12,800	0.71	C	14,900	0.83	D
18	Jackson Rd (SR-16) - Bradshaw Rd to Excelsior Rd	Rural Hwy	2	E	10,800	0.47	D	14,500	0.63	E
19	Jackson Rd (SR-16) - Excelsior Rd to Eagles Nest Rd	Rural Hwy	2	E	9,200	0.40	D	14,300	0.62	E
20	Jackson Rd (SR-16) - Eagles Nest Rd to Sunrise Blvd	Rural Hwy	2	E	9,200	0.40	D	14,300	0.62	E
21	Jackson Rd (SR-16) - Sunrise Blvd to Grant Line Rd	Rural Hwy	2	D	13,000	0.57	D	19,100	0.83	E
22	Douglas Rd - Mather Blvd to Eagles Nest Rd	Arterial M	2	E	6,500	0.36	A	7,900	0.44	A
23	Douglas Rd - Eagles Nest Rd to Sunrise Blvd	Arterial M	2	D	6,300	0.35	A	7,700	0.43	A
24	Douglas Rd - Sunrise Blvd to Rancho Cordova Pkwy	Arterial M	2	D	4,400	0.24	A	20,800	1.16	F
25	Douglas Rd - Rancho Cordova Pkwy to Grant Line Rd	Arterial M	2	D	2,300	0.13	A	20,200	1.12	F
26	Kiefer Blvd - Grant Line Rd to Jackson Rd (SR-16)	Rural NS	2	D	2,900	0.17	B	4,000	0.24	C
27	Sunrise Blvd - US 50 to Folsom Blvd	Arterial M	6	D	54,500	1.01	F	57,100	1.06	F
28	Sunrise Blvd - Folsom Blvd to White Rock Rd	Arterial M	6	D	49,500	0.92	E	52,700	0.98	E
29	Sunrise Blvd - White Rock Rd to Douglas Rd	Arterial M	6	D	28,200	0.52	A	43,100	0.80	C
30	Sunrise Blvd - Jackson Rd (SR-16) to Florin Rd	Rural S	2	E	11,100	0.56	D	11,200	0.56	D
31	Mather Blvd - Douglas Rd to Femoyer St	Arterial M	2	D	6,500	0.36	A	8,100	0.45	A

ID #	Roadway Segment	Facility	Lanes	Policy	Existing			Expanded Preserves		
					Volume	V/C	LOS	Volume	V/C	LOS
32	Zinfandel Dr - US-50 to White Rock Rd	Arterial M	6	D	43,300	0.80	D	46,700	0.86	D
33	Prairie City Rd - US-50 to White Rock Rd	Rural NS	2	D	5,900	0.35	C	9,700	0.57	D
34	Scott Rd - US-50 to White Rock Rd	Rural NS	2	D	4,800	0.28	C	5,900	0.35	C
35	North Loop Rd - Grant Line Rd to Town Center Dr	Arterial M	4	E	--	--	--	25,200	0.70	C
36	North Loop Rd - Town Center Dr to Street A	Arterial M	4	E	--	--	--	25,200	0.70	C
37	North Loop Rd - Street A to Street D	Arterial M	4	E	--	--	--	24,100	0.67	B
38	North Loop Rd - Street D to Street F	Arterial L	4	E	--	--	--	8,000	0.27	A
39	North Loop Rd - Street F to University Blvd	Residential NF	2	E	--	--	--	3,100	0.31	A
40	Chrysanthy Blvd - Grant Line Rd to Town Center Dr	Arterial M	4	E	--	--	--	--	--	--
41	University Blvd - Grant Line Rd to Town Center Dr	Arterial M	4	E	--	--	--	21,700	0.60	B
42	University Blvd - Town Center Dr to Street A	Arterial M	4	E	--	--	--	13,300	0.37	A
43	University Blvd - Street A to Street C	Arterial M	2	E	--	--	--	8,200	0.46	A
44	University Blvd - Street C to Street D	Arterial M	2	E	--	--	--	9,200	0.51	A
45	University Blvd - Street D to Street E	Residential NF	2	E	--	--	--	7,300	0.73	C
46	University Blvd - Street E to North Loop Rd	Residential NF	2	E	--	--	--	4,100	0.41	A
47	Town Center Dr - North Loop Rd to Chrysanthy Blvd	Arterial L	2	E	--	--	--	--	--	--
48	Town Center Dr - Chrysanthy Blvd to University Blvd	Arterial L	2	E	--	--	--	--	--	--
49	Street A - North Loop Rd to University Blvd	Residential NF	2	E	--	--	--	1,900	0.19	A
50	Street A - University Blvd to Street B	Residential NF	2	E	--	--	--	8,600	0.86	D
51	Street A - Street B to Street D	Residential NF	2	E	--	--	--	5,900	0.59	A

ID #	Roadway Segment	Facility	Lanes	Policy	Existing			Expanded Preserves		
					Volume	V/C	LOS	Volume	V/C	LOS
52	Street D - North Loop Rd to University Blvd	Arterial L	2	E	--	--	--	11,800	0.79	C
53	Street D - University Blvd to Street A	Residential NF	2	E	--	--	--	7,600	0.76	C
54	Street E - University Blvd to Street A	Residential F	2	E	--	--	--	3,500	0.44	C
<p>NOTES:</p> <p>LOS = level of service; SR = State Route; U.S. 50 = U.S. Highway 50; V/C = volume-to-capacity; Arterial M = medium access control arterial; Arterial L = low access control arterial; Rural Hwy = rural highway; Rural NS = rural road with no shoulders; Rural NS = rural road with shoulders; Residential NF = residential collector without frontage; Residential F = residential collector with frontage.</p> <p>Bold indicates deficiency. Shaded areas indicate impact.</p> <p>Source: DKS Associates, 2011</p>										

Table ALT-19: Cumulative Plus Expanded Preserves Roadway Operating Conditions

ID #	Roadway Segment	Facility	Lanes	Policy	Cumulative			Cumulative Plus Expanded Preserves		
					Volume	V/C	LOS	Volume	V/C	LOS
1	Grant Line Rd - Sheldon Rd to Calvine Rd	Arterial M	4	D	25,700	0.71	C	26,700	0.74	C
2	Grant Line Rd - Calvine Rd to Sunrise Blvd	Arterial M	4	E	29,500	0.82	D	31,000	0.86	D
3	Grant Line Rd - Sunrise Blvd to Jackson Rd (SR-16)	Arterial M	4	E	21,400	0.59	A	23,000	0.64	B
4	Grant Line Rd - Jackson Rd (SR-16) to Rancho Cordova Pkwy	Arterial M	4	D	24,000	0.67	B	28,700	0.80	C
5	Grant Line Rd - Rancho Cordova Pkwy to Kiefer Blvd	Arterial M	4	D	25,900	0.72	C	32,100	0.89	D
6	Grant Line Rd - Kiefer Blvd to University Blvd	Arterial M	4	D	20,400	0.57	A	31,400	0.87	D
7	Grant Line Rd - University Blvd to Chrysanthy Blvd	Arterial M	4	D	20,400	0.57	A	29,400	0.82	D
8	Grant Line Rd - Chrysanthy Blvd to North Loop	Arterial M	4	D	24,600	0.68	B	30,900	0.86	D
9	Grant Line Rd - North Loop to Douglas Rd	Arterial M	4	D	24,600	0.68	B	43,200	1.20	F
10	Grant Line Rd - Douglas Rd to White Rock Rd	Arterial M	4	D	34,700	0.96	E	39,700	1.10	F
11	White Rock Rd - Kilgore Rd to Sunrise Blvd	Arterial M	6	E	24,200	0.45	A	24,500	0.45	A
12	White Rock Rd - Sunrise Blvd to Rancho Cordova Pkwy	Arterial M	6	E	16,600	0.31	A	16,800	0.31	A
13	White Rock Rd - Rancho Cordova Pkwy to Americanos Blvd	Arterial M	6	E	11,700	0.22	A	12,200	0.23	A
14	White Rock Rd - Americanos Blvd to Grant Line Rd	Arterial M	6	D	12,300	0.23	A	13,400	0.25	A
15	White Rock Rd - Grant Line Rd to Prairie City Rd	Arterial M	6	E	44,000	0.81	D	49,900	0.92	E

ID #	Roadway Segment	Facility	Lanes	Policy	Cumulative			Cumulative Plus Expanded Preserves		
					Volume	V/C	LOS	Volume	V/C	LOS
16	White Rock Rd - Prairie City Rd to Scott Rd (South)	Arterial M	6	D	31,400	0.58	A	34,300	0.64	B
17	White Rock Rd - Scott Rd (South) to Scott Rd (North)	Arterial M	6	D	31,700	0.59	A	34,200	0.63	B
18	White Rock Rd - Scott Rd (North) to County Line	Arterial M	4	D	21,200	0.59	A	22,400	0.62	B
19	Jackson Rd (SR-16) - Watt Ave to Bradshaw Rd	Arterial M	6	E	66,900	1.24	F	67,300	1.25	F
20	Jackson Rd (SR-16) - Bradshaw Rd to Vineyard Rd	Arterial M	6	E	55,300	1.02	F	56,300	1.04	F
21	Jackson Rd (SR-16) - Vineyard Rd to Excelsior Rd	Arterial M	6	E	35,200	0.65	B	37,000	0.69	B
22	Jackson Rd (SR-16) - Excelsior Rd to Eagles Nest Rd	Arterial M	4	E	22,500	0.63	B	24,400	0.68	B
23	Jackson Rd (SR-16) - Eagles Nest Rd to Sunrise Blvd	Arterial M	4	E	24,600	0.68	B	26,300	0.73	C
24	Jackson Rd (SR-16) - Sunrise Blvd to Grant Line Rd	Arterial M	4	D	29,100	0.81	D	31,300	0.87	D
25	Douglas Rd - Excelsior Rd to Eagles Nest Rd	Arterial M	4	E	19,800	0.55	A	17,600	0.49	A
26	Douglas Rd - Eagles Nest Rd to Sunrise Blvd	Arterial M	6	D	31,100	0.58	A	33,800	0.63	B
27	Douglas Rd - Sunrise Blvd to Rancho Cordova Pkwy	Arterial M	6	D	36,100	0.67	B	42,400	0.79	C
28	Douglas Rd - Rancho Cordova Pkwy to Americanos Blvd	Arterial M	6	D	17,100	0.32	A	28,000	0.52	A
29	Douglas Rd - Americanos Blvd to Grant Line Rd	Arterial M	6	D	10,300	0.19	A	22,900	0.42	A
30	Kiefer Blvd - Bradshaw Rd to Vineyard Rd	Arterial M	4	D	28,400	0.79	C	30,400	0.84	D

ID #	Roadway Segment	Facility	Lanes	Policy	Cumulative			Cumulative Plus Expanded Preserves		
					Volume	V/C	LOS	Volume	V/C	LOS
31	Kiefer Blvd - Vineyard Rd to Excelsior Rd	Arterial M	4	D	23,000	0.64	B	25,700	0.71	C
32	Kiefer Blvd - Excelsior Rd to Eagles Nest Rd	Arterial M	4	D	11,500	0.32	A	14,100	0.39	A
33	Kiefer Blvd - Eagles Nest Rd to Sunrise Blvd	Arterial M	4	D	16,300	0.45	A	18,500	0.51	A
34	Kiefer Blvd - Sunrise Blvd to Rancho Cordova Pkwy	Arterial M	4	D	18,400	0.51	A	20,800	0.58	A
35	Kiefer Blvd - Rancho Cordova Pkwy to Grant Line Rd	Arterial M	4	D	6,800	0.19	A	9,600	0.27	A
36	Kiefer Blvd - Grant Line Rd to Jackson Rd (SR-16)	Rural NS	2	D	7,000	0.41	D	7,400	0.44	D
37	Sunrise Blvd - US 50 to Folsom Blvd	Arterial M	6	D	62,300	1.15	F	62,900	1.16	F
38	Sunrise Blvd - Folsom Blvd to White Rock Rd	Arterial M	6	D	54,800	1.01	F	56,800	1.05	F
39	Sunrise Blvd - White Rock Rd to Douglas Rd	Arterial M	6	D	41,200	0.76	C	44,300	0.82	D
40	Sunrise Blvd - Jackson Rd (SR-16) to Florin Rd	Arterial M	4	E	22,400	0.62	B	23,100	0.64	B
41	Mather Blvd - Douglas Rd to Femoyer St	Arterial M	2	D	5,900	0.33	A	6,300	0.35	A
42	Zinfandel Dr - US-50 to White Rock Rd	Arterial M	6	D	80,600	1.49	F	81,300	1.51	F
43	Zinfandel Dr - White Rock Rd to International Dr	Arterial M	6	D	55,000	1.02	F	56,200	1.04	F
44	Zinfandel Dr - International Dr to Douglas Rd	Arterial M	6	D	30,600	0.57	A	33,900	0.63	B
45	Prairie City Rd - US-50 to Easton Valley Pkwy	Arterial M	6	D	27,600	0.51	A	28,800	0.53	A
46	Prairie City Rd - Easton Valley Pkwy to White Rock Rd	Arterial M	4	D	19,100	0.53	A	20,900	0.58	A
47	Scott Rd - US-50 to Easton Valley Pkwy	Arterial M	6	D	43,100	0.80	C	44,200	0.82	D
48	Scott Rd - Easton Valley Pkwy to White Rock	Arterial M	4	D	19,800	0.55	A	21,100	0.59	A

ID #	Roadway Segment	Facility	Lanes	Policy	Cumulative			Cumulative Plus Expanded Preserves		
					Volume	V/C	LOS	Volume	V/C	LOS
	Rd									
49	Chrysanthy Blvd - Sunrise Blvd to Rancho Cordova Pkwy	Arterial M	4	D	10,800	0.30	A	11,800	0.33	A
50	Chrysanthy Blvd - Rancho Cordova Pkwy to Americanos Blvd	Arterial M	4	D	19,400	0.54	A	20,600	0.57	A
51	Chrysanthy Blvd - Americanos Blvd to Grant Line Rd	Arterial M	4	D	6,100	0.17	A	14,200	0.39	A
52	Rancho Cordova Pkwy - White Rock Rd to Douglas Rd	Arterial M	6	D	33,600	0.62	B	35,200	0.65	B
53	Rancho Cordova Pkwy - Douglas Rd to Chrysanthy Blvd	Arterial M	6	D	29,400	0.54	A	29,700	0.55	A
54	Rancho Cordova Pkwy - Chrysanthy Blvd to Kiefer Blvd	Arterial M	4	D	20,300	0.56	A	19,900	0.55	A
55	Rancho Cordova Pkwy - Kiefer Blvd to Grant Line Rd	Arterial M	4	D	6,800	0.19	A	8,400	0.23	A
56	Americanos Blvd - White Rock Rd to Douglas Rd	Arterial M	4	D	12,200	0.34	A	14,500	0.40	A
57	Americanos Blvd - Douglas Rd to Chrysanthy Blvd	Arterial M	4	D	7,600	0.21	A	9,700	0.27	A
58	Americanos Blvd - Chrysanthy Blvd to Kiefer Blvd	Arterial M	4	D	9,600	0.27	A	9,800	0.27	A
59	Oak Ave - US-50 to Easton Valley Pkwy	Arterial M	4	D	17,900	0.50	A	18,700	0.52	A
60	Oak Ave - Easton Valley Pkwy to White Rock Rd	Arterial M	4	D	3,100	0.09	A	3,200	0.09	A
61	North Loop Rd - Grant Line Rd to Town Center Dr	Arterial M	4	E	--	--	--	23,200	0.64	B
62	North Loop Rd - Town Center Dr to Street A	Arterial M	4	E	--	--	--	23,200	0.64	B

ID #	Roadway Segment	Facility	Lanes	Policy	Cumulative			Cumulative Plus Expanded Preserves		
					Volume	V/C	LOS	Volume	V/C	LOS
63	North Loop Rd - Street A to Street D	Arterial M	4	E	--	--	--	22,200	0.62	B
64	North Loop Rd - Street D to Street F	Arterial L	4	E	--	--	--	9,300	0.31	A
65	North Loop Rd - Street F to University Blvd	Residential NF	2	E	--	--	--	2,900	0.29	A
66	Chrysanthy Blvd - Grant Line Rd to Town Center Dr	Arterial M	4	E	--	--	--			
67	University Blvd - Grant Line Rd to Town Center Dr	Arterial M	4	E	--	--	--	24,000	0.67	B
68	University Blvd - Town Center Dr to Street A	Arterial M	4	E	--	--	--	15,600	0.43	A
69	University Blvd - Street A to Street C	Arterial M	2	E	--	--	--	8,600	0.48	A
70	University Blvd - Street C to Street D	Arterial M	2	E	--	--	--	8,900	0.49	A
71	University Blvd - Street D to Street E	Residential NF	2	E	--	--	--	7,200	0.72	C
72	University Blvd - Street E to North Loop Rd	Residential NF	2	E	--	--	--	4,000	0.40	A
73	Town Center Dr - North Loop Rd to Chrysanthy Blvd	Arterial L	2	E	--	--	--			
74	Town Center Dr - Chrysanthy Blvd to University Blvd	Arterial L	2	E	--	--	--			
75	Street A - North Loop Rd to University Blvd	Residential NF	2	E	--	--	--	1,800	0.18	A
76	Street A - University Blvd to Street B	Residential NF	2	E	--	--	--	9,800	0.98	E
77	Street A - Street B to Street D	Residential NF	2	E	--	--	--	6,800	0.68	B
78	Street D - North Loop Rd to University Blvd	Arterial L	2	E	--	--	--	10,300	0.69	B

ID #	Roadway Segment	Facility	Lanes	Policy	Cumulative			Cumulative Plus Expanded Preserves		
					Volume	V/C	LOS	Volume	V/C	LOS
79	Street D - University Blvd to Street A	Residential NF	2	E	--	--	--	6,700	0.67	B
80	Street E - University Blvd to Street A	Residential F	2	E	--	--	--	3,300	0.41	C
<p>NOTES:</p> <p>LOS = level of service; SR = State Route; U.S. 50 = U.S. Highway 50; V/C = volume-to-capacity; Arterial M = medium access control arterial; Arterial L = low access control arterial; Rural Hwy = rural highway; Rural NS = rural road with no shoulders; Rural NS = rural road with shoulders; Residential NF = residential collector without frontage; Residential F = residential collector with frontage.</p> <p>Bold indicates deficiency. Shaded areas indicate impact.</p> <p>Source: DKS Associates, 2011</p>										

Table ALT-20: Expanded Preserves Freeway Segment Operating Conditions

Roadway Segment	Lanes ml/hov/aux	Existing			Existing Plus Expanded Preserves			Cumulative			Cumulative Plus Expanded Preserves		
		Total Volume	Density	LOS	Total Volume	Density	LOS	Total Volume	Density	LOS	Total Volume	Density	LOS
AM Peak Hour													
US-50 EB Power Inn/Howe Ave to Watt Ave	4/1/0	7,230	34	D	7,340	35	D	8,950	42	E	9,040	43	E
US-50 EB Watt Ave to Bradshaw Rd	4/1/0	7,720	38	E	7,810	39	E	9,340	49	F	9,460	51	F
US-50 EB Bradshaw Rd to Mather Field Rd	4/1/0	7,200	34	D	7,280	34	D	8,680	40	E	8,720	41	E
US-50 EB Mather Field Rd to Zinfandel Dr	4/1/1	6,420	24	C	6,510	25	C	8,300	31	D	8,380	31	D
US-50 EB Rancho Cordova Pkwy to Hazel Ave	3/1/1	4,750	27	D	4,980	28	D	7,470	47	F	7,670	51	F
US-50 WB Hazel Ave to Rancho Cordova Pkwy	3/1/1	7,100	56	F	7,170	59	F	8,960	67	F	9,050	71	F
US-50 WB Zinfandel Dr to Mather Field Rd	4/1/1	7,420	29	D	7,550	30	D	9,550	34	D	9,590	34	D
US-50 WB Mather Field Rd to Bradshaw Rd	4/1/0	7,290	35	D	7,480	36	E	9,030	43	E	9,140	45	E
US-50 WB Bradshaw Rd to Watt Ave	4/1/0	7,870	40	E	8,070	42	E	10,010	55	F	10,130	58	F
US-50 WB Watt Ave to Power Inn/Howe Ave	4/1/1	8,350	34	D	8,550	36	E	10,670	44	E	10,810	46	F
PM Peak Hour													
US-50 EB Power Inn/Howe Ave to Watt Ave	4/1/0	7,550	37	E	7,660	38	E	9,590	43	E	9,620	43	E
US-50 EB Watt Ave to Bradshaw Rd	4/1/0	7,630	38	E	7,770	39	E	9,780	48	F	9,870	49	F
US-50 EB Bradshaw Rd to Mather Field Rd	4/1/0	6,920	32	D	7,040	33	D	8,670	36	E	8,710	36	E
US-50 EB Mather Field Rd to Zinfandel Dr	4/1/1	7,190	28	D	7,270	28	D	9,450	35	E	9,480	36	E
US-50 EB Rancho Cordova Pkwy to Hazel Ave	3/1/1	7,060	52	F	7,170	55	F	8,940	90	F	8,970	92	F
US-50 WB Hazel Ave to Rancho Cordova Pkwy	3/1/1	4,480	24	C	4,670	25	C	6,070	27	D	6,190	28	D
US-50 WB Zinfandel Dr to Mather Field Rd	4/1/1	6,370	28	D	6,430	29	D	8,210	26	D	8,220	26	D
US-50 WB Mather Field Rd to Bradshaw Rd	4/1/0	6,770	31	D	6,830	31	D	8,220	33	D	8,250	33	D
US-50 WB Bradshaw Rd to Watt Ave	4/1/0	7,590	37	E	7,670	38	E	9,660	48	F	9,670	48	F
US-50 WB Watt Ave to Power Inn/Howe Ave	4/1/1	7,130	27	D	7,660	38	E	9,170	31	D	9,180	31	D
NOTES: ml = main line; hov = high occupancy vehicle; aux = auxiliary lane; LOS = level of service; U.S. 50 = U.S. Highway 50 flow calculation assumes: free flow speed=65 mph; capacity of 2350 pc/h/ln; peak hour factor=0.9; heavy vehicle factor=0.976; population factor=1.0; and excludes hov volume and capacity auxiliary lane capacity is based on the Highway Capacity Manual volume-ratio (VR) methodology Bold indicates deficiency. Shaded areas indicate impact. Source: DKS Associates, 2011													

Table ALT-21: Expanded Preserves Freeway Ramp Operating Conditions

Roadway Segment	Lanes	Existing			Existing Plus Expanded Preserves			Cumulative			Cumulative Plus Expanded Preserves		
		Total Volume	Density	LOS	Total Volume	Density	LOS	Total Volume	Density	LOS	Total Volume	Density	LOS
AM Peak Hour													
US-50 EB Watt Ave Double Off	2	1,186	10.6	B	1,207	11.0	B	1,463	14.7	B	1,438	14.6	B
US-50 EB Watt Ave Loop On	1	1,484	36.0	E	1,466	36.1	E	1,524	38.0	E	1,517	38.2	E
US-50 EB Watt Ave Slip-On	1	619	31.7	D	642	31.7	D	772	33.5	F	775	33.6	F
US-50 WB Watt Ave Double Off	2	1,598	14.4	B	1,600	15.0	B	1,628	16.6	F	1,692	17.2	F
US-50 WB Watt Ave Loop On	1	708	36.5	E	700	37.5	E	872	39.9	E	933	39.8	E
US-50 WB Watt Ave Slip-On to Auxiliary	1	1,484	0.8	E	1,492	0.8	E	1,782	1.0	F	1,805	1.0	F
PM Peak Hour													
US-50 EB Watt Ave Double Off	2	1,570	14.2	B	1,592	14.6	B	1,835	18.3	F	1,796	18.1	F
US-50 EB Watt Ave Loop On	1	1,041	35.4	E	1,047	35.6	E	1,124	37.9	E	1,124	38.2	E
US-50 EB Watt Ave Slip-On	1	475	29.9	D	517	30.1	D	761	32.0	F	773	32.3	F
US-50 WB Watt Ave Double Off	2	2,146	17.7	B	2,132	17.8	B	2,248	21.0	F	2,227	20.8	F
US-50 WB Watt Ave Loop On	1	566	32.4	D	560	32.8	D	723	36.8	E	709	36.8	E
US-50 WB Watt Ave Slip-On to Auxiliary	1	1,041	0.6	C	1,051	0.6	C	1,261	0.7	D	1,249	0.7	D
NOTES: U.S. Highway 50; aux = auxiliary lane; LOS = level of service; Bold indicates deficiency. Shaded areas indicate impact. Source: DKS Associates, 2011													

EXPANDED FOOTPRINT

The Expanded Footprint Alternative reduces the number of access locations on Grant Line Road from three locations to two locations, and the inclusion of larger preserves also eliminates several internal roadways. The northern access location has been moved to align with Douglas Road. Other than these internal site changes, the vehicle network studied for this Alternative is the same as the network studied for the Project. Assumptions for non-automotive networks are also the same as the Project. Note that all tables referenced are found at the conclusion of the discussion.

EXISTING PLUS EXPANDED FOOTPRINT CONDITIONS

Table ALT-22 describes the trip generation assumptions for the Alternative in the existing condition. Existing conditions and existing plus Expanded Footprint conditions for all studied facilities are included in Table ALT-24, Table ALT-26, Table ALT-28, and Table ALT-29.

INTERSECTION ANALYSIS

SACRAMENTO COUNTY

The Expanded Footprint Alternative causes significant impacts to six intersections, which are listed below. The list includes both the facility impact, as well as the operating conditions that would result after the implementation of mitigation (for more detailed data on mitigation, refer to Table 22 of Appendix TR-1). The facility improvements listed in Mitigation Measure ALT-5 would improve all operating conditions from unacceptable to acceptable levels, and impacts would be *less than significant*.

- *Mather Boulevard and Douglas Road* – Operating conditions deteriorate from an acceptable LOS E to LOS F in the a.m. peak hour. This intersection meets peak hour traffic signal warrants with the addition of Expanded Footprint traffic. Mitigation would improve operating conditions to LOS E.
- *Eagles Nest Road and Jackson Road* – Operating conditions deteriorate from an acceptable LOS C to LOS F in the p.m. peak hour. This intersection meets peak hour traffic signal warrants with the addition of Expanded Footprint traffic. Mitigation would improve operating conditions to LOS B.
- *Grant Line Road and Sunrise Boulevard* – Operating conditions deteriorate from an acceptable LOS D to LOS F in the a.m. peak hour. Mitigation would improve operating conditions to LOS D.
- *Grant Line Road and White Rock Road* – Operating conditions deteriorate from an acceptable LOS C to LOS F in the a.m. peak hour. Operating conditions remain at LOS F in the p.m. peak hour, with an increase in delay of more than five seconds. This intersection meets peak hour signal warrants without and with

the addition of Expanded Footprint traffic. Mitigation would improve operating conditions to LOS B.

- *Prairie City Road and White Rock Road* – Operations conditions already at an unacceptable LOS E degrade to LOS F in the a.m. peak hour, with an increase in delay of more than five seconds. Operating conditions remain at LOS F in the p.m. peak hour, with an increase in delay of more than five seconds. This intersection meets peak hour signal warrants without and with the addition of Expanded Footprint traffic. Mitigation would improve operating conditions to LOS D.
- *Street D and North Loop Road* – This new intersection operates at LOS F during the a.m. peak hour. Mitigation would improve operating conditions to LOS E.

CITY OF ELK GROVE

The intersection of Grant Line Road and Calvine Road will operate at an acceptable LOS B in the a.m. and p.m. peak hours with the Expanded Footprint traffic. Impacts are *less than significant*.

CITY OF RANCHO CORDOVA

The Expanded Preserves Alternative causes significant impacts to eight intersections, which are listed below. The list includes both the facility impact, as well as the operating conditions that would result after the implementation of mitigation (for more detailed data on mitigation, refer to Table 22 of Appendix TR-1). The facility improvements necessary for this Alternative differ in many ways from those needed for the Project, and thus a new measure (Mitigation Measure ALT-6) is included, which would improve all but two operating conditions (see below) from unacceptable to acceptable levels. Though operating conditions would remain unacceptable at two facilities, the mitigation would offset the Alternative's contribution to that unacceptable condition. Sacramento County does not have the land use authority to ensure that facilities outside of its jurisdiction are constructed, and thus despite mitigation it must be assumed that impacts are potentially *significant and unavoidable*.

- Zinfandel Drive and White Rock Road - Operations conditions remain at an unacceptable LOS E in the p.m. peak hour, with an increase in V/C ratio of more than 0.05. After mitigation operating conditions would remain LOS E, but Alternative traffic would result in a change in v/c ratio of less than 0.05.
- Sunrise Boulevard and White Rock Road - Operating conditions deteriorate from an acceptable LOS C to LOS F in the a.m. peak hour. Operating conditions deteriorate from an acceptable LOS D to LOS F in the p.m. peak hour. Mitigation would improve operating conditions to LOS D.

- Sunrise Boulevard and Douglas Road - Operating conditions deteriorate from an acceptable LOS A to LOS F in the a.m. peak hour. Mitigation would improve operating conditions to LOS D.
- Sunrise Boulevard and Jackson Road - Operating conditions deteriorate from an unacceptable LOS E to LOS F in the a.m. peak hour, with an increase in V/C ratio of more than 0.05. Operating conditions deteriorate from an acceptable LOS D to LOS E in the p.m. peak hour. Mitigation would improve operating conditions to LOS D.
- Grant Line Road and Jackson Road - During the a.m. and p.m. peak hours, operating conditions remain at an unacceptable LOS F, with an increase in V/C ratio of more than 0.05. After mitigation operating conditions would remain LOS F, but Alternative traffic would result in a change in v/c ratio of less than 0.05.
- Grant Line Road and Kiefer Boulevard - During the a.m. and p.m. peak hours, operation conditions deteriorate from an acceptable LOS B to LOS F. This intersection meets peak hour signal warrants without and with the addition of alternative 2 traffic. Mitigation would improve operating conditions to LOS B.
- Grant Line Road and Douglas Road - Operating conditions deteriorate from an acceptable LOS C to LOS F in the a.m. peak hour. Operating conditions deteriorate from an acceptable LOS B to LOS F in the p.m. peak hour. This intersection meets peak hour signal warrants with the addition of alternative 2 traffic. Mitigation would improve operating conditions to LOS B.
- Grant Line Road and University Boulevard - This new intersection operates at LOS F during the a.m. and p.m. peak hours. This intersection meets peak hour signal warrants with the addition of alternative 2 traffic. Mitigation would improve operating conditions to LOS D.

CALTRANS

None of the Caltrans State Highway intersection impacts exceed the significance criteria. Impacts are *less than significant*.

ROADWAY SEGMENT ANALYSIS

SACRAMENTO COUNTY ROADWAY SEGMENTS

The Expanded Footprint Alternative would degrade operating conditions on the segment of Prairie City Road from US 50 to White Rock Road from an acceptable LOS C to an unacceptable LOS E. Mitigation included in measure TR-3.A, for the Project, would improve operating conditions to LOS D; with mitigation impacts are *less than significant*.

CITY OF ELK GROVE ROADWAY SEGMENT

The segment of Grant Line Road from Sheldon Road to Calvin Road operates at an unacceptable LOS E, and the Expanded Footprint Alternative will result in a change of v/c ratio of more than 0.05. Mitigation Measure TR-4 would improve operating conditions to LOS A; with mitigation, impacts are *less than significant*.

CITY OF RANCHO CORDOVA ROADWAY SEGMENTS

The Expanded Footprint Alternative causes significant impacts to eight roadway segments, which are listed below. The list includes both the facility impact, as well as the operating conditions that would result after the implementation of mitigation (for more detailed data on mitigation, refer to Table 23 of Appendix TR-1). The facility improvements listed in Mitigation Measure TR-5 (excluding items C – E), for the Project, would improve all but two operating conditions from unacceptable to acceptable levels.

- *Grant Line Road from Jackson Road to Kiefer Boulevard* – Operations deteriorate from an acceptable LOS D to LOS F. Mitigation improves operating conditions to LOS B.
- *Grant Line Road from Kiefer Boulevard to University Boulevard* – Operations deteriorate from an acceptable LOS C to LOS F. Mitigation improves operating conditions to LOS B.
- *Grant Line Road from Douglas Road to White Rock Road* – Operations deteriorate from an acceptable LOS D to LOS F. Mitigation improves operating conditions to LOS A.
- *Jackson Road from Sunrise Boulevard to Grant Line Road* – Operations deteriorate from an acceptable LOS D to LOS E. Mitigation improves operating conditions to LOS A.
- *Douglas Road from Sunrise Boulevard to Rancho Cordova Parkway* – Operations deteriorate from an acceptable LOS A to LOS F. Mitigation improves operating conditions to LOS B.
- *Douglas Road from Rancho Cordova Parkway to Grant Line Road* – Operations deteriorate from an acceptable LOS A to LOS F. Mitigation improves operating conditions to LOS B.
- *Sunrise Boulevard from US 50 to Folsom Boulevard* – Operations remain at an unacceptable LOS F, with an increase in V/C ratio of more than 0.05. No mitigation is available (see below discussion).
- *Sunrise Boulevard from Folsom Boulevard to White Rock Road* – Operations remain at an unacceptable LOS E, with an increase in V/C ratio of more than 0.05. No mitigation is available (see below discussion).

Sacramento County does not have the land use authority to ensure that facilities outside of its jurisdiction are constructed, and thus despite mitigation impacts must be considered potentially *significant and unavoidable*. Furthermore, the only mitigation available for Sunrise Boulevard would be to widen the roadway, but this roadway is at full build-out according to the City of Rancho Cordova General Plan. Widening would require a General Plan Amendment, as well as significant acquisition of right-of-way which would involve property losses and the loss of improvements on what is currently private property. This being the case, the mitigation is considered infeasible, and impacts to these two facilities are *significant and unavoidable*.

CALTRANS FREEWAYS

MAINLINE

The Expanded Footprint Alternative causes significant impacts to two freeway segments, which are listed below. The list includes both the facility impact, as well as the operating conditions that would result after the implementation of mitigation. The facility improvements listed in Mitigation Measure TR-6 would improve all operating conditions from unacceptable to acceptable levels. Sacramento County does not have the land use authority to ensure that facilities outside of its jurisdiction are constructed, and thus despite mitigation impacts must be considered potentially *significant and unavoidable*.

- *Westbound US 50 from Hazel Avenue to Sunrise Boulevard* – There is an increase in traffic volume on this freeway segment already operating at LOS F in the a.m. peak hour. Mitigation would improve operating conditions to LOS E.
- *Eastbound US 50 from Sunrise Boulevard to Hazel Avenue* – There is an increase in traffic volume on this freeway segment already operating at LOS F. Mitigation would improve operating conditions to LOS D.

RAMP JUNCTIONS

Expanded Footprint Alternative traffic does not cause a level of service standard to be exceeded, nor does it significantly contribute to an existing unacceptable operating condition; impacts are *less than significant*.

BICYCLE AND PEDESTRIAN ANALYSIS

The impacts of the Alternative are nearly identical to those described for the Project. Though involving somewhat less traffic, the Alternative nonetheless contributes substantial additional volume to Grant Line Road and Douglas Road, which are deficient for bicycle and pedestrian facilities. The same mitigation included for the Project (Mitigation Measure TR-7) would apply to this Alternative; mitigation will reduce impacts to *less than significant* levels.

TRANSIT ANALYSIS

The impacts of the Alternative are nearly identical to those described for the Project. The Alternative assumes that an internal transit system will still be provided, and this system would be sufficient to serve the needs of residents. Development within the site will not conflict with the implementation of any adopted transit plan. Impacts are *less than significant*.

MITIGATION MEASURES:

ALT-5. The applicant shall comply with Mitigation Measure TR-1 items B through F, and shall construct the below improvement.

- A. *Street D and North Loop Road* – Provide a separate through lane and a separate right turn lane on the northbound approach.

ALT-6. The applicant shall fund the implementation of the mitigation measures below by means of a phasing and financing plan, to the satisfaction of the Sacramento County Department of Transportation and in consultation with the City of Rancho Cordova. The phasing and financing plan shall ensure construction of traffic improvements prior to degradation of LOS below standards. This mitigation recognizes that should any of the measures below benefit other projects, a reimbursement agreement may be considered.

- A. *Zinfandel Drive and White Rock Road* – Provide separate dual right turns on the westbound approach so the westbound approach has two left turn lanes, two through lanes and two right turn lanes.
- B. *Sunrise Boulevard and White Rock Road* – Provide overlap phasing on the eastbound approaches.
- C. *Sunrise Boulevard and Douglas Road* – Provide overlap phasing on the westbound approach.
- D. *Sunrise Boulevard and Jackson Road* – Provide dual through lanes on the eastbound and westbound approaches.
- E. *Grant Line Road and Jackson Road* – Provide a left turn lane and a through-right shared turn lane on the eastbound westbound, and northbound approaches. Provide a separate left turn lane, a through lane and a separate right turn lane on the southbound approach.
- F. *Grant Line Road and Kiefer Boulevard* – Construct a new traffic signal. Provide a left turn lane and a through-right shared lane on the northbound approach; and dual left turn lanes and a through-right shared lane on the southbound approach. Provide a left turn lane, dual through lanes, and a separate right turn lane on the eastbound approach; and a left turn lane, dual through lanes, and a separate free-right turn lane on the westbound

approach. Also an extra northbound departure lane is needed for the westbound free-right movement.

- G. *Grant Line Road and Douglas Road* – Construct a new traffic signal. Provide dual left turn lanes and a separate through lane on the northbound and dual left turn lanes and a through-right shared lane on the southbound approach. Provide a left turn lane, dual through lanes, and a separate right turn lane on the eastbound approach; and a left turn lane, dual through lanes, and a separate free-right turn lane on the westbound approach. Also an extra northbound departure lane is needed for the westbound free-right movement.
- H. *Grant Line Road and University Boulevard* – Construct a new traffic signal. Provide a through lane and a separate free-right turn lane on the northbound approach, dual left turn lanes and one through lanes on the southbound approach, and dual left turn lanes and a right turn lane on the westbound approach. Also an extra eastbound departure lane is needed for the northbound free-right movement.

CUMULATIVE PLUS EXPANDED FOOTPRINT CONDITIONS

Cumulative condition trip generation for the Expanded Footprint Alternative is provided in Table ALT-23. Cumulative conditions and cumulative plus Expanded Footprint conditions for all studied facilities are included in Table ALT-25, Table ALT-27, Table ALT-28, and Table ALT-29.

INTERSECTION ANALYSIS

SACRAMENTO COUNTY

The Expanded Footprint Alternative intersection at Street D and North Loop Road would operate at LOS F during the a.m. peak hour. Mitigation Measure ALT-7 would improve operating conditions to LOS E; impacts would be *less than significant*.

CITY OF FOLSOM

The Expanded Footprint Alternative does not cause a level of service standard to be exceeded, nor does it contribute substantially to any existing deficiency; impacts are *less than significant*.

CITY OF ELK GROVE

The Expanded Footprint Alternative does not cause a level of service standard to be exceeded, nor does it contribute substantially to any existing deficiency; impacts are *less than significant*.

CITY OF RANCHO CORDOVA

The Expanded Footprint Alternative causes significant impacts to four intersections, which are listed below. The list includes both the facility impact, as well as the operating conditions that would result after the implementation of mitigation (for more detailed data on mitigation, refer to Table 31 of Appendix TR-1). The facility improvements listed for the Project are different from those needed for this Alternative, so a list of measures specific to this Alternative is included in Mitigation Measure ALT-8. These measures would improve all but one operating condition from unacceptable to acceptable levels.

- *Sunrise Boulevard and Douglas Road* – Operating conditions deteriorate from an unacceptable LOS E to LOS F in the a.m. peak hour, with an increase in V/C ratio of greater than 0.05. Mitigation would improve operating conditions to LOS E, which remains unacceptable, but the Alternative would no longer result in a change of v/c ratio of more than 0.05.
- *Grant Line Road and Douglas Road* – Operating conditions deteriorate from an acceptable LOS A to LOS F in the a.m. peak hour. Mitigation would improve operating conditions to LOS D.
- *Grant Line Road and University Boulevard* – This new intersection operates at an unacceptable LOS E during the a.m. peak hour and LOS F during the p.m. peak hour. Mitigation would improve operating conditions to LOS C.
- *Sunrise Boulevard and International Drive* – Operating conditions deteriorate from an acceptable LOS D to LOS E in the a.m. peak hour. No feasible mitigation exists (see below).

Sacramento County does not have the land use authority to ensure that facilities outside of its jurisdiction are constructed, and thus despite mitigation impacts must be considered potentially *significant and unavoidable*. Furthermore, Sunrise Boulevard and International Drive was already modeled at maximum capacity, and a General Plan Amendment would be required to further increase capacity. Since neither right-of-way nor funding for this further expansion have been identified or acquired, the mitigation is considered infeasible. Impacts to the Sunrise Boulevard and International Drive intersection would remain *significant and unavoidable*.

CALTRANS

The Expanded Footprint Alternative does not cause a level of service standard to be exceeded, nor does it contribute substantially to any existing deficiency; impacts are *less than significant*.

ROADWAY SEGMENT ANALYSIS

SACRAMENTO COUNTY

The Expanded Footprint Alternative internal roadway Street A (from University Boulevard to Street B) would operate at LOS F. Mitigation Measure ALT-9 would improve conditions to LOS A; impacts are *less than significant*.

CITY OF ELK GROVE

The Elk Grove Roadway Segment does not exceed the impact significance criteria. Impacts are less than significant.

CITY OF RANCHO CORDOVA

The Expanded Preserves Alternative causes significant impacts to three roadway segments, which are listed below. The list includes both the facility impact, as well as the operating conditions that would result after the implementation of mitigation (for more detailed data on mitigation, refer to Table 32 of Appendix TR-1). The facility improvements listed in Mitigation Measure TR-10 (excluding item C), for the Project, would improve all operating conditions from unacceptable to acceptable levels. Sacramento County does not have the land use authority to ensure that facilities outside of its jurisdiction are constructed, and thus despite mitigation impacts must be considered potentially *significant and unavoidable*.

- *Grant Line Road from Rancho Cordova Parkway to Kiefer Boulevard* – Operations deteriorate from an acceptable LOS C to LOS E. Mitigation would improve operating conditions to LOS B.
- *Grant Line Road from Kiefer Boulevard to University Boulevard* – Operations deteriorate from an acceptable LOS A to LOS E. Mitigation would improve operating conditions to LOS B.
- *Grant Line Road from Douglas Road to White Rock Road* – Operations deteriorate from an unacceptable LOS E to LOS F, with an increase in V/C ratio of greater than 0.05. Mitigation would improve operating conditions to LOS C.

CALTRANS FREEWAYS

MAINLINE

The Expanded Footprint Alternative causes significant impacts to six freeway segments, which are listed below. Further widening of these freeway segments would be required in order to reduce impacts, but Caltrans currently has no plans to expand the segments beyond the build-out capacities assumed in this analysis, nor are any funding mechanisms established to collect money to fund such improvements. No feasible

mitigation exists to offset impacts to freeway segments; impacts are *significant and unavoidable*.

- *Eastbound US 50 from Watt Avenue to Bradshaw Road* – LOS F in a.m. and p.m. peak hours.
- *Eastbound US 50 from Rancho Cordova Parkway to Hazel Avenue* – LOS F in a.m. and p.m. peak hours.
- *Westbound US 50 from Hazel Avenue to Rancho Cordova Parkway* – LOS F in the a.m. peak hour.
- *Westbound US 50 from Mather Field Road to Bradshaw Road* – LOS F in a.m. peak hour.
- *Westbound US 50 from Bradshaw Road to Watt Avenue* – LOS F in a.m. and p.m. peak hours.
- *Westbound US 50 from Watt Avenue to Power Inn/Howe Avenue* – LOS F in a.m. peak hour.

RAMP JUNCTIONS

The Expanded Footprint Alternative causes significant impacts to four freeway ramps, which are listed below. Caltrans currently has no plans to expand the following ramp junctions beyond the build-out capacities assumed in this analysis, nor are any funding mechanisms established to collect monies to fund such improvements. No feasible mitigation exists to offset impacts to freeway ramps; impacts are *significant and unavoidable*.

- *Eastbound US 50 Exit Ramp to Watt Avenue* – LOS F in p.m. peak hour.
- *Eastbound US 50 Slip Ramp Entrance from Watt Avenue* – LOS F in a.m. and p.m. peak hours.
- *Westbound US 50 Exit Ramp to Watt Avenue* – LOS F in a.m. and p.m. peak hours.
- *Westbound US 50 Slip Ramp Entrance from Watt Avenue* – LOS F in a.m. peak hour.

BICYCLE AND PEDESTRIAN ANALYSIS

The impacts of the Alternative are nearly identical to those described for the Project. By the cumulative time horizon, improvements will have been installed on Grant Line Road and Douglas Road as part of buildout within Rancho Cordova, and as part of other improvements to Grant Line Road consistent with the Sacramento County General

Plan, the Sacramento County Bicycle Master Plan, and the City of Rancho Cordova General Plan. The Alternative will not eliminate or adversely affect bicycle or pedestrian facilities, result in unsafe conditions, or interfere with implementation of planned bicycle or pedestrian facilities; impacts are *less than significant*.

TRANSIT ANALYSIS

The impacts of the Alternative are nearly identical to those described for the Project. The Alternative assumes that an internal transit system will still be provided, and this system would be sufficient to serve the needs of residents. Development within the site will not conflict with the implementation of any adopted transit plan. Impacts are *less than significant*.

MITIGATION MEASURES:

ALT-7. The applicant shall be responsible for a fair share of the below mitigation measures. The fair share shall be calculated to the satisfaction of Sacramento County Department of Transportation and may be up to 100% of the cost of the improvements.

- A. *Street D and North Loop Road* – Provide dual left turn lanes on the eastbound approach.

ALT-8. The applicant shall be responsible for a fair share of the below mitigation measures. The fair share shall be calculated to the satisfaction of Sacramento County Department of Transportation, in consultation with the City of Rancho Cordova, and may be up to 100% of the cost of the improvements.

- A. *Sunrise Boulevard and Douglas Road* – Provide overlap phasing on the westbound right turns.
- B. *Grant Line Road and Douglas Road* – Provide three through lanes on the northbound approach and three through lanes on the westbound approach.
- C. *Grant Line Road and University Boulevard* – Provide a free-right turn lane on the northbound approach. Also an extra eastbound departure lane is needed for the northbound free-right movement.

ALT-9. The applicant shall be responsible for a fair share of the below mitigation measures. The fair share shall be calculated to the satisfaction of Sacramento County Department of Transportation and may be up to 100% of the cost of the improvements.

- A. *Street A from University Boulevard to Street B* – Increase roadway capacity by widening this segment to 4 lanes and upgrading the capacity class to an arterial with low access control.

Table ALT-22: Existing Plus Expanded Footprint Trip Generation

Land Use	Units	Vehicle Trip End Rates ¹			Daily Vehicle Trip Rates ^{1,2}			Vehicle Trips Ends			Vehicle Trips		
		AM	PM	Daily	AM	PM	Daily	AM	PM	Daily	AM	PM	Daily
Single Family DU	4,797	0.7	0.8	9.6	0.6	0.6	7.2	3,532	4,029	46,020	2,670	3,006	34,390
Multi Family DU	2,239	0.5	0.6	6.3	0.4	0.4	4.7	1,039	1,234	14,145	784	909	10,436
Retail Employee	1,470	1.0	1.6	17.0	0.7	1.1	11.9	1,410	2,393	25,026	1,021	1,656	17,483
Other Employee	1,719	0.3	0.3	3.7	0.2	0.3	2.9	485	574	6,331	381	446	4,979
K12 Students	6,280	0.4	0.2	1.8	0.3	0.1	1.3	2,380	1,049	11,110	1,776	765	8,073
<i>SubTotal</i>								<i>8,846</i>	<i>9,279</i>	<i>102,632</i>	<i>6,633</i>	<i>6,782</i>	<i>75,362</i>
University Students	6,000	0.1	0.2	1.8	0.1	0.1	1.5	762	987	10,863	656	837	9,199
<i>Total</i>								<i>9,608</i>	<i>10,266</i>	<i>113,495</i>	<i>7,289</i>	<i>7,620</i>	<i>84,561</i>
<i>External Trips³</i>											<i>4,970</i>	<i>4,974</i>	<i>55,627</i>
NOTES: 1. Rates in the table may not compute exactly due to rounding. 2. Vehicle trip rates reflect internalization reduction. For trips internal to the Cordova Hills Project, half the trip is attributed to the origin and half to the destination. 3. Approximate of vehicle trips traveling outside the Cordova Hills specific plan Vehicle trip summary based on modified version of the SACMET travel demand forecasting (TDF) model. Source: DKS Associates, 2011													

Table ALT-23: Cumulative Plus Expanded Footprint Trip Generation

Land Use	Units	Vehicle Trip End Rates ¹			Daily Vehicle Trip Rates ^{1,2}			Vehicle Trips Ends			Vehicle Trips		
		AM	PM	Daily	AM	PM	Daily	AM	PM	Daily	AM	PM	Daily
Single Family DU	4,797	0.7	0.8	9.3	0.5	0.6	6.9	3,427	3,899	44,719	2,568	2,881	33,141
Multi Family DU	2,239	0.5	0.5	6.2	0.3	0.4	4.6	1,020	1,210	13,922	769	891	10,288
Retail Employee	1,470	1.0	1.7	17.7	0.7	1.2	12.6	1,471	2,485	25,994	1,089	1,759	18,579
Other Employee	1,719	0.3	0.4	3.9	0.2	0.3	3.1	517	604	6,658	418	479	5,350
K12 Students	6,280	0.4	0.2	1.8	0.3	0.1	1.3	2,386	1,053	11,189	1,784	769	8,161
<i>SubTotal</i>								8,820	9,250	102,481	6,627	6,779	75,519
University Students	6,000	0.1	0.2	1.8	0.1	0.1	1.6	763	986	10,853	660	841	9,240
<i>Total</i>								9,583	10,236	113,335	7,287	7,620	84,759
<i>External Trips³</i>											4,991	5,004	56,183
NOTES: 1. Rates in the table may not compute exactly due to rounding. 2. Vehicle trip rates reflect internalization reduction. For trips internal to the Cordova Hills Project, half the trip is attributed to the origin and half to the destination. 3. Approximate of vehicle trips traveling outside the Cordova Hills specific plan Vehicle trip summary based on modified version of the SACMET travel demand forecasting (TDF) model. Source: DKS Associates, 2011													

Table ALT-24: Existing Conditions Expanded Footprint Intersection Operating Conditions

Intersection			Level of Service Methodology		AM Peak Hour						PM Peak Hour					
					Existing			Existing Plus Expanded Footprint			Existing			Existing Plus Expanded Footprint		
ID #	North-South Street	East-West Street	Analysis Methodology	Policy	Meets Signal Warrant	v/c or Delay ¹	LOS	Meets Signal Warrant	v/c or Delay ¹	LOS	Meets Signal Warrant	v/c or Delay ¹	LOS	Meets Signal Warrant	v/c or Delay ¹	LOS
Sacramento County																
1	S Watt Ave	Jackson Rd(SR-16)	Circular 212 Planning	E	--	0.80	C	--	0.90	D	--	0.90	D	--	0.94	E
2	Bradshaw Rd	Jackson Rd(SR-16)	Circular 212 Planning	E	--	0.96	E	--	0.99	E	--	0.87	D	--	0.96	E
3	Mather Blvd	Douglas Rd	2000 HCM 4-Way Stop	E	No	47.5	E	Yes	88.9	F	No	12.9	B	Yes	17.8	C
4	Excelsior Rd	Jackson Rd(SR-16)	Circular 212 Planning	E	--	0.57	A	--	0.65	B	--	0.55	A	--	0.62	B
5	Eagles Nest Rd	Jackson Rd(SR-16)	2000 HCM Unsignalized	E	No	12.5	B	No	20.7	C	No	21.3	C	Yes	95.4	F
6	Grant Line Rd	Sunrise Blvd	Circular 212 Planning	E	--	0.81	D	--	1.08	F	--	0.93	E	--	0.86	D
7	Grant Line Rd	White Rock Rd	2000 HCM Unsignalized	E	No	17.5	C	No	[xxxxx]	F	Yes	80.8	F	Yes	516.1	F
8	Prairie City Rd	White Rock Rd	2000 HCM 4-Way Stop	D	Yes	35.3	E	Yes	115.7	F	Yes	71.2	F	Yes	138.2	F
9	Scott Rd (W)	White Rock Rd	2000 HCM Unsignalized	D	No	14.2	B	Yes	17.9	C	No	17.1	C	No	18.7	C
10	Scott Rd (E)	White Rock Rd	2000 HCM 4-Way Stop	D	Yes	13.2	B	Yes	15.4	C	Yes	20.4	C	Yes	23.9	C
34	Town Center Dr	North Loop Rd	Circular 212 Planning	E	--	--	--	--	--	--	--	--	--	--	--	--
35	Town Center Dr	Chrysanthy Blvd	Circular 212 Planning	E	--	--	--	--	--	--	--	--	--	--	--	--
36	Town Center Dr	University Blvd	Circular 212 Planning	E	--	--	--	--	0.43	A	--	--	--	--	0.56	A
37	Street "A"	North Loop Rd	FHWA Roundabout	E	--	--	--	--	--	--	--	--	--	--	--	--
38	Street "A"	University Blvd	FHWA Roundabout	E	--	--	--	--	14.4	B	--	--	--	--	21.0	C
39	Street "A"	Street "B"	Circular 212 Planning	E	--	--	--	--	0.22	A	--	--	--	--	0.35	A
40	Street "C"	University Blvd	FHWA Roundabout	E	--	--	--	--	6.7	A	--	--	--	--	6.8	A
41	Street "D"	North Loop Rd	Circular 212 Planning	E	--	--	--	--	1.03	F	--	--	--	--	0.93	E
42	Street "D"	University Blvd	FHWA Roundabout	E	--	--	--	--	7.2	A	--	--	--	--	8.0	A
43	Street "D"	Street "A"	FHWA Roundabout	E	--	--	--	--	3.1	A	--	--	--	--	3.1	A
44	School Access	North Loop Rd	Circular 212 Planning	E	--	--	--	--	0.95	E	--	--	--	--	0.40	A
45	Street "F"	North Loop Rd	Circular 212 Planning	E	--	--	--	--	0.35	A	--	--	--	--	0.26	A
City of Elk Grove																
11	Grant Line Rd	Calvine Rd	2000 HCM Operations	D	--	16.3	B	--	16.5	B	--	13.1	B	--	15.3	B
City of Rancho Cordova																
12	Zinfandel Dr	White Rock Rd	Circular 212 Planning	D	--	0.61	B	--	0.68	B	--	0.94	E	--	1.00	E

Intersection			Level of Service Methodology		AM Peak Hour						PM Peak Hour					
					Existing			Existing Plus Expanded Footprint			Existing			Existing Plus Expanded Footprint		
ID #	North-South Street	East-West Street	Analysis Methodology	Policy	Meets Signal Warrant	v/c or Delay ¹	LOS	Meets Signal Warrant	v/c or Delay ¹	LOS	Meets Signal Warrant	v/c or Delay ¹	LOS	Meets Signal Warrant	v/c or Delay ¹	LOS
13	Sunrise Blvd	Folsom Blvd	Circular 212 Planning	D	--	0.76	C	--	0.82	D	--	0.64	B	--	0.66	B
14	Sunrise Blvd	White Rock Rd	Circular 212 Planning	D	--	0.74	C	--	1.05	F	--	0.82	D	--	1.09	F
15	Sunrise Blvd	Douglas Rd	Circular 212 Planning	D	--	0.52	A	--	1.10	F	--	0.45	A	--	0.74	C
16	Sunrise Blvd	Jackson Rd(SR-16)	Circular 212 Planning	D	--	0.95	E	--	1.13	F	--	0.84	D	--	0.99	E
17	Grant Line Rd	Jackson Rd(SR-16)	Circular 212 Planning	D	--	1.04	F	--	1.67	F	--	1.13	F	--	1.54	F
18	Grant Line Rd	Kiefer Blvd	2000 HCM 4-Way Stop	D	Yes	13.6	B	Yes	276.6	F	No	14.4	B	Yes	217.8	F
19	Grant Line Rd	Douglas Rd	2000 HCM Unsignalized	D	No	21.6	C	Yes	[xxxxx]	F	No	12.0	B	Yes	[xxxxx]	F
30	Grant Line Rd	North Loop Rd	2000 HCM Unsignalized	D		--	--	--	--	--		--	--	--	--	--
31	Grant Line Rd	Chrysanthy Blvd	2000 HCM Unsignalized	D		--	--	--	--	--		--	--	--	--	--
32	Grant Line Rd	University Blvd	2000 HCM Unsignalized	D		--	--	Yes	[xxxxx]	F		--	--	Yes	[xxxxx]	F
Caltrans State Highways																
20	Mather Field Rd	US-50 WB Ramps	2000 HCM Operations	E	--	20.6	C	--	20.4	C	--	16.3	B	--	16.7	B
21	Mather Field Rd	US-50 EB Ramps	2000 HCM Operations	E	--	21.7	C	--	21.4	C	--	17.3	B	--	17.3	B
22	Zinfandel Dr	US-50 WB Ramps	2000 HCM Operations	E	--	17.3	B	--	18.0	B	--	14.3	B	--	14.3	B
23	Zinfandel Dr	US-50 EB Ramps	2000 HCM Operations	E	--	28.6	C	--	32.3	C	--	134.6	F	--	132.9	F
24	Sunrise Blvd	US-50 WB Ramps	2000 HCM Operations	E	--	14.2	B	--	13.4	B	--	13.0	B	--	12.7	B
25	Sunrise Blvd	US-50 EB Ramps	2000 HCM Operations	E	--	19.2	B	--	18.7	B	--	17.6	B	--	17.1	B
26	Prairie City Rd	US-50 WB Ramps	2000 HCM Operations	E	--	20.2	C	--	20.2	C	--	23.0	C	--	23.2	C
27	Prairie City Rd	US-50 EB Ramps	2000 HCM Operations	E	--	17.0	B	--	17.1	B	--	16.7	B	--	17.4	B
28	Scott Rd	US-50 WB Ramps	2000 HCM Operations	E	--	19.7	B	--	20.0	B	--	12.5	B	--	11.8	B
29	Scott Rd	US-50 EB Ramps	2000 HCM Operations	E	--	16.3	B	--	16.5	B	--	15.1	B	--	15.2	B
<p>NOTES:</p> <p>¹ v/c = Volume-to-Capacity ratio, [xxxxx] indicates that the delay exceeds 500 seconds.</p> <p>Delay: At 4-Way Stop intersections (based on the 2000 HCM 4-Way Stop methodology) the reported delay is the average intersection delay.</p> <p>At unsignalized, 2-Way Stop intersections (based on the 2000 HCM Unsignalized methodology), the reported delay is for the worst approach.</p> <p>At signalized intersections (based on the 2000 HCM Operations), the reported delay is the intersection delay.</p> <p>Bold indicates deficiency. Shaded areas indicate impact.</p> <p>Source: DKS Associates, 2011</p>																

Table ALT-25: Cumulative Conditions Expanded Footprint Intersection Operating Conditions

Intersection			Level of Service Methodology		AM Peak Hour				PM Peak Hour			
					Cumulative		Cumulative Plus Expanded Footprint		Cumulative		Cumulative Plus Expanded Footprint	
ID #	North-South Street	East-West Street	Analysis Methodology	Policy	v/c or Delay ¹	LOS	v/c or Delay ¹	LOS	v/c or Delay ¹	LOS	v/c or Delay ¹	LOS
Sacramento County												
1	S Watt Ave	Jackson Rd(SR-16)	Circular 212 Planning	E	1.27	F	1.27	F	1.11	F	1.13	F
2	Bradshaw Rd	Jackson Rd(SR-16)	Circular 212 Planning	E	0.95	E	0.99	E	1.18	F	1.14	F
3	Zinfandel Dr ²	Mather Blvd ²	Circular 212 Planning	E	0.42	A	0.46	A	0.61	B	0.71	C
4	Excelsior Rd	Jackson Rd(SR-16)	Circular 212 Planning	E	0.72	C	0.76	C	1.14	F	1.14	F
5	Eagles Nest Rd	Jackson Rd(SR-16)	Circular 212 Planning	E	0.39	A	0.39	A	0.60	A	0.62	B
6	Grant Line Rd	Sunrise Blvd	Circular 212 Planning	E	0.89	D	0.93	E	1.11	F	1.11	F
7	Grant Line Rd	White Rock Rd	Circular 212 Planning	E	0.77	C	0.83	D	0.85	D	0.93	E
9	Scott Rd (W)	White Rock Rd	Circular 212 Planning	D	0.54	A	0.60	B	0.53	A	0.57	A
34	Town Center Dr	North Loop Rd	Circular 212 Planning	E	--	--	--	--	--	--	--	--
35	Town Center Dr	Chrysanthy Blvd	Circular 212 Planning	E	--	--	--	--	--	--	--	--
36	Town Center Dr	University Blvd	Circular 212 Planning	E	--	--	0.46	A	--	--	0.54	A
37	Street "A"	North Loop Rd	FHWA Roundabout	E	--	--	--	--	--	--	--	--
38	Street "A"	University Blvd	FHWA Roundabout	E	--	--	12.4	B	--	--	16.2	C
39	Street "A"	Street "B"	Circular 212 Planning	E	--	--	0.24	A	--	--	0.34	A
40	Street "C"	University Blvd	FHWA Roundabout	E	--	--	5.8	A	--	--	5.7	A
41	Street "D"	North Loop Rd	Circular 212 Planning	E	--	--	1.07	F	--	--	0.96	E
42	Street "D"	University Blvd	FHWA Roundabout	E	--	--	6.5	A	--	--	7.3	A
43	Street "D"	Street "A"	FHWA Roundabout	E	--	--	3.2	A	--	--	3.0	A
44	School Access	North Loop Rd	Circular 212 Planning	E	--	--	0.97	E	--	--	0.42	A
45	Street "F"	North Loop Rd	Circular 212 Planning	E	--	--	0.35	A	--	--	0.25	A
46	Vineyard Rd	Kiefer Blvd	Circular 212 Planning	E	0.90	D	0.96	E	0.90	D	0.94	E
47	Vineyard Rd	Jackson Rd(SR-16)	Circular 212 Planning	E	0.76	C	0.77	C	0.96	E	0.95	E
48	Excelsior Rd	Kiefer Blvd	Circular 212 Planning	E	0.71	C	0.76	C	0.59	A	0.58	A
50	Zinfandel Dr	Douglas Rd	Circular 212 Planning	E	0.53	A	0.57	A	0.72	C	0.80	C
51	Eagles Nest Rd	Kiefer Blvd	Circular 212 Planning	E	0.64	B	0.67	B	0.62	B	0.67	B
City of Folsom												
8	Prairie City Rd	White Rock Rd	2000 HCM Operations	C	16.9	B	19.6	B	19.4	B	20.8	C
10	Scott Rd (E)	White Rock Rd	2000 HCM Operations	C	33.2	C	34.7	C	15.5	B	15.5	B

Intersection			Level of Service Methodology		AM Peak Hour				PM Peak Hour			
					Cumulative		Cumulative Plus Expanded Footprint		Cumulative		Cumulative Plus Expanded Footprint	
ID #	North-South Street	East-West Street	Analysis Methodology	Policy	v/c or Delay ¹	LOS	v/c or Delay ¹	LOS	v/c or Delay ¹	LOS	v/c or Delay ¹	LOS
City of Elk Grove												
11	Grant Line Rd	Calvine Rd	2000 HCM Operations	D	11.5	B	11.7	B	8.5	A	9.0	A
City of Rancho Cordova												
12	Zinfandel Dr	White Rock Rd	Circular 212 Planning	D	0.80	D	0.81	D	1.28	F	1.28	F
13	Sunrise Blvd	Folsom Blvd	Circular 212 Planning	D	1.01	F	0.97	E	0.80	D	0.79	C
14	Sunrise Blvd	White Rock Rd	Circular 212 Planning	D	0.60	B	0.62	B	0.72	C	0.72	C
15	Sunrise Blvd	Douglas Rd	Circular 212 Planning	D	0.90	E	1.03	F	0.88	D	0.87	D
16	Sunrise Blvd	Jackson Rd(SR-16)	Circular 212 Planning	D	0.91	E	0.92	E	0.79	C	0.81	D
17	Grant Line Rd	Jackson Rd(SR-16)	Circular 212 Planning	D	0.63	B	0.72	C	0.63	B	0.63	B
18	Grant Line Rd	Kiefer Blvd	Circular 212 Planning	D	0.61	B	0.75	C	0.72	C	0.78	C
19	Grant Line Rd	Douglas Rd	Circular 212 Planning	D	0.58	A	1.02	F	0.56	A	0.80	D
30	Grant Line Rd	North Loop Rd	Circular 212 Planning	D	--	--	--	--	--	--	--	--
31	Grant Line Rd	Chrysanthy Blvd	Circular 212 Planning	D	0.48	A	0.57	A	0.39	A	0.61	B
32	Grant Line Rd	University Blvd	Circular 212 Planning	D	--	--	0.92	E	--	--	1.01	F
49	Zinfandel Dr	International Rd	Circular 212 Planning	D	0.90	E	0.92	E	1.23	F	1.27	F
52	Sunrise Blvd	International Dr	Circular 212 Planning	D	0.87	D	0.92	E	0.79	C	0.82	D
53	Sunrise Blvd	Chrysanthy Blvd	Circular 212 Planning	D	0.67	B	0.74	C	0.54	A	0.51	A
54	Sunrise Blvd	Kiefer Blvd	Circular 212 Planning	D	0.59	A	0.61	B	0.58	A	0.63	B
55	Rancho Cordova Pkwy	White Rock Rd	Circular 212 Planning	D	0.69	B	0.74	C	0.73	C	0.74	C
56	Rancho Cordova Pkwy	Douglas Rd	Circular 212 Planning	D	0.73	C	0.72	C	1.08	F	0.97	E
57	Rancho Cordova Pkwy	Chrysanthy Blvd	Circular 212 Planning	D	0.61	B	0.61	B	0.59	A	0.57	A
58	Rancho Cordova Pkwy	Kiefer Blvd	Circular 212 Planning	D	0.54	A	0.58	A	0.53	A	0.54	A
59	Rancho Cordova Pkwy	Grant Line Rd	Circular 212 Planning	D	0.46	A	0.57	A	0.45	A	0.51	A
60	International Dr	White Rock Rd	Circular 212 Planning	D	0.36	A	0.35	A	0.44	A	0.45	A
61	Americanos Blvd	Douglas Rd	Circular 212 Planning	D	0.45	A	0.50	A	0.68	B	0.62	B
62	Americanos Blvd	Chrysanthy Blvd	Circular 212 Planning	D	0.27	A	0.32	A	0.36	A	0.36	A
Caltrans State Highways												
20	Mather Field Rd	US-50 WB Ramps	2000 HCM Operations	E	23.7	C	23.0	C	22.5	C	22.4	C
21	Mather Field Rd	US-50 EB Ramps	2000 HCM Operations	E	36.5	D	36.9	D	19.7	B	20.9	C
22	Zinfandel Dr	US-50 WB Ramps	2000 HCM Operations	E	15.9	B	15.4	B	20.2	C	20.1	C
23	Zinfandel Dr	US-50 EB Ramps	2000 HCM Operations	E	57.4	E	56.6	E	122.4	F	119.2	F

Intersection			Level of Service Methodology		AM Peak Hour				PM Peak Hour			
					Cumulative		Cumulative Plus Expanded Footprint		Cumulative		Cumulative Plus Expanded Footprint	
ID #	North-South Street	East-West Street	Analysis Methodology	Policy	v/c or Delay ¹	LOS	v/c or Delay ¹	LOS	v/c or Delay ¹	LOS	v/c or Delay ¹	LOS
24	Sunrise Blvd	US-50 WB Ramps	2000 HCM Operations	E	23.4	C	23.1	C	31.1	C	31.4	C
25	Sunrise Blvd	US-50 EB Ramps	2000 HCM Operations	E	21.6	C	21.5	C	19.8	B	20.0	C
26	Prairie City Rd	US-50 WB Ramps	2000 HCM Operations	E	20.1	C	20.1	C	34.5	C	34.9	C
27	Prairie City Rd	US-50 EB Ramps	2000 HCM Operations	E	12.1	B	11.8	B	14.7	B	14.3	B
28	Scott Rd	US-50 WB Ramps	2000 HCM Operations	E	15.3	B	15.4	B	13.7	B	14.0	B
29	Scott Rd	US-50 EB Ramps	2000 HCM Operations	E	19.4	B	19.4	B	16.1	B	16.1	B
63	Rancho Cordova Pkwy	US-50 WB Ramps	2000 HCM Operations	E	20.2	C	20.4	C	25.1	C	25.7	C
64	Rancho Cordova Pkwy	US-50 EB Ramps	2000 HCM Operations	E	12.2	B	13.1	B	21.1	C	21.2	C
65	Oak Ave Pkwy	US-50 WB Ramps	2000 HCM Operations	E	14.1	B	14.2	B	9.0	A	8.5	A
66	Oak Ave Pkwy	US-50 EB Ramps	2000 HCM Operations	E	19.2	B	19.1	B	21.5	C	21.5	C
<p>NOTES:</p> <p>¹ v/c = Volume-to-Capacity ratio, Delay: At 4-Way Stop intersections (based on the 2000 HCM 4-Way Stop methodology) the reported delay is the average intersection delay.</p> <p>² The Zinfandel Drive extension project includes realigning Mather Boulevard to connect at Zinfandel Drive (see Figure 16)</p> <p>At unsignalized, 2-Way Stop intersections (based on the 2000 HCM Unsignalized methodology), the reported delay is for the worst approach.</p> <p>At signalized intersections (based on the 2000 HCM Operations), the reported delay is the intersection delay.</p> <p>Bold indicates deficiency. Shaded areas indicate impact.</p> <p>Source: DKS Associates, 2011</p>												

Table ALT-26: Existing and Existing Plus Expanded Footprint Roadway Operating Conditions

ID #	Roadway Segment	Facility	Lanes	Policy	Existing			Cumulative Plus Expanded Footprint		
					Volume	V/C	LOS	Volume	V/C	LOS
1	Grant Line Rd - Sheldon Rd to Calvin Rd	Rural S	2	D	12,800	0.64	E	14,300	0.72	E
2	Grant Line Rd - Calvin Rd to Sunrise Blvd	Rural S	2	E	14,200	0.71	E	17,000	0.85	E
3	Grant Line Rd - Sunrise Blvd to Jackson Rd (SR-16)	Rural S	2	E	7,900	0.40	D	13,500	0.68	E
4	Grant Line Rd - Jackson Rd (SR-16) to Kiefer Blvd	Rural S	2	D	7,800	0.39	D	21,900	1.10	F
5	Grant Line Rd - Kiefer Blvd to University Blvd	Rural S	2	D	6,500	0.33	C	22,000	1.10	F
6	Grant Line Rd - University Blvd to Chrysanthus Blvd	Rural S	2	D	6,500	0.33	C	11,500	0.58	D
7	Grant Line Rd - Chrysanthus Blvd to North Loop	Rural S	2	D	6,500	0.33	C	11,500	0.58	D
8	Grant Line Rd - North Loop to Douglas Rd	Rural S	2	D	6,500	0.33	C	11,500	0.58	D
9	Grant Line Rd - Douglas Rd to White Rock Rd	Rural NS	2	D	9,600	0.56	D	19,500	1.15	F
10	White Rock Rd - Kilgore Rd to Sunrise Blvd	Arterial M	6	E	27,000	0.50	A	36,400	0.67	B
11	White Rock Rd - Sunrise Blvd to Fitzgerald Rd	Arterial M	4	E	9,800	0.27	A	11,800	0.33	A
12	White Rock Rd - Fitzgerald Rd to Grant Line Rd	Rural NS	2	E	3,400	0.20	B	5,500	0.32	C
13	White Rock Rd - Grant Line Rd to Prairie City Rd	Rural NS	2	E	9,900	0.58	D	16,000	0.94	E
14	White Rock Rd - Prairie City Rd to Scott Rd (South)	Rural NS	2	D	7,000	0.41	D	8,900	0.52	D

ID #	Roadway Segment	Facility	Lanes	Policy	Existing			Cumulative Plus Expanded Footprint		
					Volume	V/C	LOS	Volume	V/C	LOS
15	White Rock Rd - Scott Rd (South) to Scott Rd (North)	Rural NS	2	D	7,000	0.41	D	8,900	0.52	D
16	White Rock Rd - Scott Rd (North) to County Line	Rural NS	2	D	7,500	0.44	D	8,000	0.47	D
17	Jackson Rd (SR-16) - Watt Ave to Bradshaw Rd	Arterial M	2	E	12,800	0.71	C	14,800	0.82	D
18	Jackson Rd (SR-16) - Bradshaw Rd to Excelsior Rd	Rural Hwy	2	E	10,800	0.47	D	14,500	0.63	E
19	Jackson Rd (SR-16) - Excelsior Rd to Eagles Nest Rd	Rural Hwy	2	E	9,200	0.40	D	14,500	0.63	E
20	Jackson Rd (SR-16) - Eagles Nest Rd to Sunrise Blvd	Rural Hwy	2	E	9,200	0.40	D	14,500	0.63	E
21	Jackson Rd (SR-16) - Sunrise Blvd to Grant Line Rd	Rural Hwy	2	D	13,000	0.57	D	19,500	0.85	E
22	Douglas Rd - Mather Blvd to Eagles Nest Rd	Arterial M	2	E	6,500	0.36	A	8,400	0.47	A
23	Douglas Rd - Eagles Nest Rd to Sunrise Blvd	Arterial M	2	D	6,300	0.35	A	8,200	0.46	A
24	Douglas Rd - Sunrise Blvd to Rancho Cordova Pkwy	Arterial M	2	D	4,400	0.24	A	22,500	1.25	F
25	Douglas Rd - Rancho Cordova Pkwy to Grant Line Rd	Arterial M	2	D	2,300	0.13	A	22,900	1.27	F
26	Kiefer Blvd - Grant Line Rd to Jackson Rd (SR-16)	Rural NS	2	D	2,900	0.17	B	4,400	0.26	C
27	Sunrise Blvd - US 50 to Folsom Blvd	Arterial M	6	D	54,500	1.01	F	57,600	1.07	F
28	Sunrise Blvd - Folsom Blvd to White Rock Rd	Arterial M	6	D	49,500	0.92	E	53,700	0.99	E
29	Sunrise Blvd - White Rock Rd to Douglas Rd	Arterial M	6	D	28,200	0.52	A	44,700	0.83	D

ID #	Roadway Segment	Facility	Lanes	Policy	Existing			Cumulative Plus Expanded Footprint		
					Volume	V/C	LOS	Volume	V/C	LOS
30	Sunrise Blvd - Jackson Rd (SR-16) to Florin Rd	Rural S	2	E	11,100	0.56	D	11,100	0.56	D
31	Mather Blvd - Douglas Rd to Femoyer St	Arterial M	2	D	6,500	0.36	A	8,500	0.47	A
32	Zinfandel Dr - US-50 to White Rock Rd	Arterial M	6	D	43,300	0.80	D	47,500	0.88	D
33	Prairie City Rd - US-50 to White Rock Rd	Rural NS	2	D	5,900	0.35	C	10,600	0.62	E
34	Scott Rd - US-50 to White Rock Rd	Rural NS	2	D	4,800	0.28	C	6,600	0.39	D
35	North Loop Rd - Grant Line Rd to Town Center Dr	Arterial M	4	E	--	--	--	29,800	0.83	D
36	North Loop Rd - Town Center Dr to Street A	Arterial M	4	E	--	--	--	29,800	0.83	D
37	North Loop Rd - Street A to Street D	Arterial M	4	E	--	--	--	11,100	0.31	A
38	North Loop Rd - Street D to Street F	Arterial L	4	E	--	--	--	6,000	0.20	A
39	North Loop Rd - Street F to University Blvd	Residential NF	2	E	--	--	--	3,700	0.37	A
40	Chrysanthy Blvd - Grant Line Rd to Town Center Dr	Arterial M	4	E	--	--	--			
41	University Blvd - Grant Line Rd to Town Center Dr	Arterial M	4	E	--	--	--	25,800	0.72	C
42	University Blvd - Town Center Dr to Street A	Arterial M	4	E	--	--	--	18,600	0.52	A
43	University Blvd - Street A to Street C	Arterial M	2	E	--	--	--	11,800	0.66	B
44	University Blvd - Street C to Street D	Arterial M	2	E	--	--	--	11,300	0.63	B
45	University Blvd - Street D to Street E	Residential NF	2	E	--	--	--	6,900	0.69	B
46	University Blvd - Street E to North Loop Rd	Residential NF	2	E	--	--	--	3,600	0.36	A
47	Town Center Dr - North Loop Rd to Chrysanthy Blvd	Arterial L	2	E	--	--	--			
48	Town Center Dr - Chrysanthy Blvd to University Blvd	Arterial L	2	E	--	--	--			

ID #	Roadway Segment	Facility	Lanes	Policy	Existing			Cumulative Plus Expanded Footprint		
					Volume	V/C	LOS	Volume	V/C	LOS
49	Street A - North Loop Rd to University Blvd	Residential NF	2	E	--	--	--	1,700	0.17	A
50	Street A - University Blvd to Street B	Residential NF	2	E	--	--	--	9,600	0.96	E
51	Street A - Street B to Street D	Residential NF	2	E	--	--	--	5,100	0.51	A
52	Street D - North Loop Rd to University Blvd	Arterial L	2	E	--	--	--	13,200	0.88	D
53	Street D - University Blvd to Street A	Residential NF	2	E	--	--	--	8,800	0.88	D
54	Street E - University Blvd to Street A	Residential F	2	E	--	--	--	3,700	0.46	C
<p>NOTES:</p> <p>LOS = level of service; SR = State Route; U.S. 50 = U.S. Highway 50; V/C = volume-to-capacity; Arterial M = medium access control arterial; Arterial L = low access control arterial; Rural Hwy = rural highway; Rural NS = rural road with no shoulders; Rural NS = rural road with shoulders; Residential NF = residential collector without frontage; Residential F = residential collector with frontage.</p> <p>Bold indicates deficiency. Shaded areas indicate impact.</p> <p>Source: DKS Associates, 2011</p>										

Table ALT-27: Cumulative and Cumulative Plus Expanded Footprint Roadway Operating Conditions

ID #	Roadway Segment	Facility	Lanes	Policy	Cumulative			Cumulative Plus Expanded Footprint		
					Volume	V/C	LOS	Volume	V/C	LOS
1	Grant Line Rd - Sheldon Rd to Calvine Rd	Arterial M	4	D	25,700	0.71	C	26,900	0.75	C
2	Grant Line Rd - Calvine Rd to Sunrise Blvd	Arterial M	4	E	29,500	0.82	D	31,400	0.87	D
3	Grant Line Rd - Sunrise Blvd to Jackson Rd (SR-16)	Arterial M	4	E	21,400	0.59	A	23,500	0.65	B
4	Grant Line Rd - Jackson Rd (SR-16) to Rancho Cordova Pkwy	Arterial M	4	D	24,000	0.67	B	29,800	0.83	D
5	Grant Line Rd - Rancho Cordova Pkwy to Kiefer Blvd	Arterial M	4	D	25,900	0.72	C	33,600	0.93	E
6	Grant Line Rd - Kiefer Blvd to University Blvd	Arterial M	4	D	20,400	0.57	A	33,900	0.94	E
7	Grant Line Rd - University Blvd to Chrysanthy Blvd	Arterial M	4	D	20,400	0.57	A	29,000	0.81	D
8	Grant Line Rd - Chrysanthy Blvd to North Loop	Arterial M	4	D	24,600	0.68	B	28,300	0.79	C
9	Grant Line Rd - North Loop to Douglas Rd	Arterial M	4	D	24,600	0.68	B	28,300	0.79	C
10	Grant Line Rd - Douglas Rd to White Rock Rd	Arterial M	4	D	34,700	0.96	E	41,200	1.14	F
11	White Rock Rd - Kilgore Rd to Sunrise Blvd	Arterial M	6	E	24,200	0.45	A	24,400	0.45	A
12	White Rock Rd - Sunrise Blvd to Rancho Cordova Pkwy	Arterial M	6	E	16,600	0.31	A	16,600	0.31	A
13	White Rock Rd - Rancho Cordova Pkwy to Americanos Blvd	Arterial M	6	E	11,700	0.22	A	12,100	0.22	A
14	White Rock Rd - Americanos Blvd to Grant Line Rd	Arterial M	6	D	12,300	0.23	A	13,300	0.25	A
15	White Rock Rd - Grant Line Rd to Prairie City Rd	Arterial M	6	E	44,000	0.81	D	51,300	0.95	E

ID #	Roadway Segment	Facility	Lanes	Policy	Cumulative			Cumulative Plus Expanded Footprint		
					Volume	V/C	LOS	Volume	V/C	LOS
16	White Rock Rd - Prairie City Rd to Scott Rd (South)	Arterial M	6	D	31,400	0.58	A	35,000	0.65	B
17	White Rock Rd - Scott Rd (South) to Scott Rd (North)	Arterial M	6	D	31,700	0.59	A	35,000	0.65	B
18	White Rock Rd - Scott Rd (North) to County Line	Arterial M	4	D	21,200	0.59	A	22,700	0.63	B
19	Jackson Rd (SR-16) - Watt Ave to Bradshaw Rd	Arterial M	6	E	66,900	1.24	F	67,200	1.24	F
20	Jackson Rd (SR-16) - Bradshaw Rd to Vineyard Rd	Arterial M	6	E	55,300	1.02	F	56,000	1.04	F
21	Jackson Rd (SR-16) - Vineyard Rd to Excelsior Rd	Arterial M	6	E	35,200	0.65	B	36,700	0.68	B
22	Jackson Rd (SR-16) - Excelsior Rd to Eagles Nest Rd	Arterial M	4	E	22,500	0.63	B	24,500	0.68	B
23	Jackson Rd (SR-16) - Eagles Nest Rd to Sunrise Blvd	Arterial M	4	E	24,600	0.68	B	26,200	0.73	C
24	Jackson Rd (SR-16) - Sunrise Blvd to Grant Line Rd	Arterial M	4	D	29,100	0.81	D	31,600	0.88	D
25	Douglas Rd - Excelsior Rd to Eagles Nest Rd	Arterial M	4	E	19,800	0.55	A	17,700	0.49	A
26	Douglas Rd - Eagles Nest Rd to Sunrise Blvd	Arterial M	6	D	31,100	0.58	A	35,300	0.65	B
27	Douglas Rd - Sunrise Blvd to Rancho Cordova Pkwy	Arterial M	6	D	36,100	0.67	B	44,500	0.82	D
28	Douglas Rd - Rancho Cordova Pkwy to Americanos Blvd	Arterial M	6	D	17,100	0.32	A	31,300	0.58	A
29	Douglas Rd - Americanos Blvd to Grant Line Rd	Arterial M	6	D	10,300	0.19	A	29,900	0.55	A
30	Kiefer Blvd - Bradshaw Rd to Vineyard Rd	Arterial M	4	D	28,400	0.79	C	30,500	0.85	D

ID #	Roadway Segment	Facility	Lanes	Policy	Cumulative			Cumulative Plus Expanded Footprint		
					Volume	V/C	LOS	Volume	V/C	LOS
31	Kiefer Blvd - Vineyard Rd to Excelsior Rd	Arterial M	4	D	23,000	0.64	B	25,700	0.71	C
32	Kiefer Blvd - Excelsior Rd to Eagles Nest Rd	Arterial M	4	D	11,500	0.32	A	13,800	0.38	A
33	Kiefer Blvd - Eagles Nest Rd to Sunrise Blvd	Arterial M	4	D	16,300	0.45	A	18,200	0.51	A
34	Kiefer Blvd - Sunrise Blvd to Rancho Cordova Pkwy	Arterial M	4	D	18,400	0.51	A	20,400	0.57	A
35	Kiefer Blvd - Rancho Cordova Pkwy to Grant Line Rd	Arterial M	4	D	6,800	0.19	A	9,300	0.26	A
36	Kiefer Blvd - Grant Line Rd to Jackson Rd (SR-16)	Rural NS	2	D	7,000	0.41	D	7,700	0.45	D
37	Sunrise Blvd - US 50 to Folsom Blvd	Arterial M	6	D	62,300	1.15	F	63,300	1.17	F
38	Sunrise Blvd - Folsom Blvd to White Rock Rd	Arterial M	6	D	54,800	1.01	F	56,900	1.05	F
39	Sunrise Blvd - White Rock Rd to Douglas Rd	Arterial M	6	D	41,200	0.76	C	44,700	0.83	D
40	Sunrise Blvd - Jackson Rd (SR-16) to Florin Rd	Arterial M	4	E	22,400	0.62	B	23,300	0.65	B
41	Mather Blvd - Douglas Rd to Femoyer St	Arterial M	2	D	5,900	0.33	A	6,400	0.36	A
42	Zinfandel Dr - US-50 to White Rock Rd	Arterial M	6	D	80,600	1.49	F	81,900	1.52	F
43	Zinfandel Dr - White Rock Rd to International Dr	Arterial M	6	D	55,000	1.02	F	56,800	1.05	F
44	Zinfandel Dr - International Dr to Douglas Rd	Arterial M	6	D	30,600	0.57	A	34,900	0.65	B
45	Prairie City Rd - US-50 to Easton Valley Pkwy	Arterial M	6	D	27,600	0.51	A	29,100	0.54	A
46	Prairie City Rd - Easton Valley Pkwy to White Rock Rd	Arterial M	4	D	19,100	0.53	A	21,200	0.59	A
47	Scott Rd - US-50 to Easton Valley Pkwy	Arterial M	6	D	43,100	0.80	C	44,500	0.82	D

ID #	Roadway Segment	Facility	Lanes	Policy	Cumulative			Cumulative Plus Expanded Footprint		
					Volume	V/C	LOS	Volume	V/C	LOS
48	Scott Rd - Easton Valley Pkwy to White Rock Rd	Arterial M	4	D	19,800	0.55	A	21,500	0.60	A
49	Chrysanthy Blvd - Sunrise Blvd to Rancho Cordova Pkwy	Arterial M	4	D	10,800	0.30	A	11,500	0.32	A
50	Chrysanthy Blvd - Rancho Cordova Pkwy to Americanos Blvd	Arterial M	4	D	19,400	0.54	A	20,100	0.56	A
51	Chrysanthy Blvd - Americanos Blvd to Grant Line Rd	Arterial M	4	D	6,100	0.17	A	11,800	0.33	A
52	Rancho Cordova Pkwy - White Rock Rd to Douglas Rd	Arterial M	6	D	33,600	0.62	B	35,300	0.65	B
53	Rancho Cordova Pkwy - Douglas Rd to Chrysanthy Blvd	Arterial M	6	D	29,400	0.54	A	28,800	0.53	A
54	Rancho Cordova Pkwy - Chrysanthy Blvd to Kiefer Blvd	Arterial M	4	D	20,300	0.56	A	19,600	0.54	A
55	Rancho Cordova Pkwy - Kiefer Blvd to Grant Line Rd	Arterial M	4	D	6,800	0.19	A	8,700	0.24	A
56	Americanos Blvd - White Rock Rd to Douglas Rd	Arterial M	4	D	12,200	0.34	A	15,000	0.42	A
57	Americanos Blvd - Douglas Rd to Chrysanthy Blvd	Arterial M	4	D	7,600	0.21	A	7,600	0.21	A
58	Americanos Blvd - Chrysanthy Blvd to Kiefer Blvd	Arterial M	4	D	9,600	0.27	A	9,400	0.26	A
59	Oak Ave - US-50 to Easton Valley Pkwy	Arterial M	4	D	17,900	0.50	A	18,700	0.52	A
60	Oak Ave - Easton Valley Pkwy to White Rock Rd	Arterial M	4	D	3,100	0.09	A	3,200	0.09	A
61	North Loop Rd - Grant Line Rd to Town Center Dr	Arterial M	4	E	--	--	--	28,300	0.79	C

ID #	Roadway Segment	Facility	Lanes	Policy	Cumulative			Cumulative Plus Expanded Footprint		
					Volume	V/C	LOS	Volume	V/C	LOS
62	North Loop Rd - Town Center Dr to Street A	Arterial M	4	E	--	--	--	28,300	0.79	C
63	North Loop Rd - Street A to Street D	Arterial M	4	E	--	--	--	10,800	0.30	A
64	North Loop Rd - Street D to Street F	Arterial L	4	E	--	--	--	6,900	0.23	A
65	North Loop Rd - Street F to University Blvd	Residential NF	2	E	--	--	--	3,500	0.35	A
66	Chrysanthy Blvd - Grant Line Rd to Town Center Dr	Arterial M	4	E	--	--	--			
67	University Blvd - Grant Line Rd to Town Center Dr	Arterial M	4	E	--	--	--	27,900	0.78	C
68	University Blvd - Town Center Dr to Street A	Arterial M	4	E	--	--	--	20,600	0.57	A
69	University Blvd - Street A to Street C	Arterial M	2	E	--	--	--	11,500	0.64	B
70	University Blvd - Street C to Street D	Arterial M	2	E	--	--	--	10,700	0.59	A
71	University Blvd - Street D to Street E	Residential NF	2	E	--	--	--	6,700	0.67	B
72	University Blvd - Street E to North Loop Rd	Residential NF	2	E	--	--	--	3,500	0.35	A
73	Town Center Dr - North Loop Rd to Chrysanthy Blvd	Arterial L	2	E	--	--	--			
74	Town Center Dr - Chrysanthy Blvd to University Blvd	Arterial L	2	E	--	--	--			
75	Street A - North Loop Rd to University Blvd	Residential NF	2	E	--	--	--	2,100	0.21	A
76	Street A - University Blvd to Street B	Residential NF	2	E	--	--	--	10,100	1.01	F
77	Street A - Street B to Street D	Residential NF	2	E	--	--	--	5,500	0.55	A

ID #	Roadway Segment	Facility	Lanes	Policy	Cumulative			Cumulative Plus Expanded Footprint		
					Volume	V/C	LOS	Volume	V/C	LOS
78	Street D - North Loop Rd to University Blvd	Arterial L	2	E	--	--	--	13,000	0.87	D
79	Street D - University Blvd to Street A	Residential NF	2	E	--	--	--	8,400	0.84	D
80	Street E - University Blvd to Street A	Residential F	2	E	--	--	--	3,500	0.44	C
<p>NOTES:</p> <p>LOS = level of service; SR = State Route; U.S. 50 = U.S. Highway 50; V/C = volume-to-capacity; Arterial M = medium access control arterial; Arterial L = low access control arterial; Rural Hwy = rural highway; Rural NS = rural road with no shoulders; Rural NS = rural road with shoulders; Residential NF = residential collector without frontage; Residential F = residential collector with frontage.</p> <p>Bold indicates deficiency. Shaded areas indicate impact.</p> <p>Source: DKS Associates, 2011</p>										

Table ALT-28: Expanded Footprint Freeway Segment Operating Conditions

Roadway Segment	Lanes ml/hov/aux	Existing			Existing Plus Expanded Footprint			Cumulative			Cumulative Plus Expanded Footprint		
		Total Volume	Density	LOS	Total Volume	Density	LOS	Total Volume	Density	LOS	Total Volume	Density	LOS
AM Peak Hour													
US-50 EB Power Inn/Howe Ave to Watt Ave	4/1/0	7,230	34	D	7,350	35	E	8,950	42	E	9,060	43	E
US-50 EB Watt Ave to Bradshaw Rd	4/1/0	7,720	38	E	7,810	39	E	9,340	49	F	9,480	52	F
US-50 EB Bradshaw Rd to Mather Field Rd	4/1/0	7,200	34	D	7,270	34	D	8,680	40	E	8,770	41	E
US-50 EB Mather Field Rd to Zinfandel Dr	4/1/1	6,420	24	C	6,510	25	C	8,300	31	D	8,410	31	D
US-50 EB Rancho Cordova Pkwy to Hazel Ave	3/1/1	4,750	27	D	5,000	28	D	7,470	47	F	7,650	51	F
US-50 WB Hazel Ave to Rancho Cordova Pkwy	3/1/1	7,100	56	F	7,220	60	F	8,960	67	F	9,040	71	F
US-50 WB Zinfandel Dr to Mather Field Rd	4/1/1	7,420	29	D	7,550	30	D	9,550	34	D	9,700	35	D
US-50 WB Mather Field Rd to Bradshaw Rd	4/1/0	7,290	35	D	7,460	36	E	9,030	43	E	9,180	45	F
US-50 WB Bradshaw Rd to Watt Ave	4/1/0	7,870	40	E	8,070	42	E	10,010	55	F	10,210	60	F
US-50 WB Watt Ave to Power Inn/Howe Ave	4/1/1	8,350	34	D	8,560	36	E	10,670	44	E	10,870	47	F
PM Peak Hour													
US-50 EB Power Inn/Howe Ave to Watt Ave	4/1/0	7,550	37	E	7,690	38	E	9,590	43	E	9,710	44	E
US-50 EB Watt Ave to Bradshaw Rd	4/1/0	7,630	38	E	7,780	39	E	9,780	48	F	9,870	49	F
US-50 EB Bradshaw Rd to Mather Field Rd	4/1/0	6,920	32	D	7,030	33	D	8,670	36	E	8,730	36	E
US-50 EB Mather Field Rd to Zinfandel Dr	4/1/1	7,190	28	D	7,280	28	D	9,450	35	E	9,410	35	E
US-50 EB Rancho Cordova Pkwy to Hazel Ave	3/1/1	7,060	52	F	7,220	57	F	8,940	90	F	8,990	94	F
US-50 WB Hazel Ave to Rancho Cordova Pkwy	3/1/1	4,480	24	C	4,710	26	C	6,070	27	D	6,180	28	D
US-50 WB Zinfandel Dr to Mather Field Rd	4/1/1	6,370	28	D	6,450	29	D	8,210	26	D	8,220	26	D
US-50 WB Mather Field Rd to Bradshaw Rd	4/1/0	6,770	31	D	6,830	31	D	8,220	33	D	8,250	33	D
US-50 WB Bradshaw Rd to Watt Ave	4/1/0	7,590	37	E	7,680	38	E	9,660	48	F	9,680	48	F
US-50 WB Watt Ave to Power Inn/Howe Ave	4/1/1	7,130	27	D	7,240	28	D	9,170	31	D	9,180	31	D
NOTES: ml = main line; hov = high occupancy vehicle; aux = auxiliary lane; LOS = level of service; U.S. 50 = U.S. Highway 50 flow calculation assumes: free flow speed=65 mph; capacity of 2350 pc/h/ln; peak hour factor=0.9; heavy vehicle factor=0.976; population factor=1.0; and excludes hov volume and capacity auxiliary lane capacity is based on the Highway Capacity Manual volume-ratio (VR) methodology Bold indicates deficiency. Shaded areas indicate impact. Source: DKS Associates, 2011													

Table ALT-29: Expanded Footprint Freeway Ramp Operating Conditions

Roadway Segment	Lanes	Existing			Existing Plus Expanded Footprint			Cumulative			Cumulative Plus Expanded Footprint		
		Total Volume	Density	LOS	Total Volume	Density	LOS	Total Volume	Density	LOS	Total Volume	Density	LOS
AM Peak Hour													
US-50 EB Watt Ave Double Off	2	1,186	10.6	B	1,232	11.2	B	1,463	14.7	B	1,454	14.8	B
US-50 EB Watt Ave Loop On	1	1,484	36.0	E	1,488	36.2	E	1,524	38.0	E	1,521	38.2	E
US-50 EB Watt Ave Slip-On	1	619	31.7	D	643	31.9	D	772	33.5	F	779	33.7	F
US-50 WB Watt Ave Double Off	2	1,598	14.4	B	1,604	15.0	B	1,628	16.6	F	1,666	17.2	F
US-50 WB Watt Ave Loop On	1	708	36.5	E	716	37.4	E	872	39.9	E	893	40.2	E
US-50 WB Watt Ave Slip-On to Auxiliary	1	1,484	0.8	E	1,485	0.8	E	1,782	1.0	F	1,794	1.0	F
PM Peak Hour													
US-50 EB Watt Ave Double Off	2	1,570	14.2	B	1,598	14.8	B	1,835	18.3	F	1,884	18.8	F
US-50 EB Watt Ave Loop On	1	1,041	35.4	E	1,037	35.8	E	1,124	37.9	E	1,157	37.9	E
US-50 EB Watt Ave Slip-On	1	475	29.9	D	515	30.3	D	761	32.0	F	754	32.2	F
US-50 WB Watt Ave Double Off	2	2,146	17.7	B	2,137	18.0	B	2,248	21.0	F	2,257	21.1	F
US-50 WB Watt Ave Loop On	1	566	32.4	D	566	33.1	D	723	36.8	E	729	36.8	E
US-50 WB Watt Ave Slip-On to Auxiliary	1	1,041	0.6	C	1,046	0.6	C	1,261	0.7	D	1,255	0.7	D
NOTES: U.S. Highway 50; aux = auxiliary lane; LOS = level of service; Bold indicates deficiency. Shaded areas indicate impact. Source: DKS Associates, 2011													

ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The No Project Alternative is environmentally superior to the Project and other Alternatives, as the No Project Alternative will result in less than significant impacts to all impact categories. CEQA Guidelines Section 15126.6(e)(2) states that if the No Project Alternative is the environmentally superior Alternative, then a superior Alternative shall be identified from among the other Alternatives. Table ALT-30 and Table ALT-31 provide comparisons between the Project and the Alternatives. Table ALT-30 includes many of the quantifiable differences between the Project and Alternatives as it relates to impacts and utility demands. The table does not include impacts such as noise or transportation, because these impacts span multiple facilities and cannot be summarized in a single number. Table ALT-31 includes a list of the impact topics and notes whether the Project and Alternatives resulted in less than significant, significant but mitigable, or significant and unavoidable impacts.

Examining the comparison of significance conclusions included in Table ALT-31, the significance conclusions for the Expanded Preserves and the Expanded Footprint Alternatives are identical except for aesthetics, in which the conclusion for the Expanded Footprint Alternative was less than significant. This was due to the fact that the off-site homes north of the site would no longer be present, and thus would not be affected by the change in views. Though the Expanded Footprint Alternative results in one fewer significant impact, examining Table ALT-30 clearly shows that the Expanded Preserves Alternative results in the least amount of land being urbanized, of pollutants such as ozone precursors and ROG, of wetlands and other habitat loss, of greenhouse gas emissions, and of utility demand. For these reasons, the Expanded Preserves Alternative is considered the environmentally superior alternative.

Table ALT-30: Summary Comparison Of Quantified Impacts

Impact Topic	Project	No Project	Expanded Preserves	Expanded Footprint
Total Area	2,669 acres	2,669 acres	2,669 acres	3,531 acres
Total Urban Area	2,120 acres	10 acres	1,490 acres	1,979 acres
Total Avoided Area¹	549 acres (18%)	2,659 acres (96%)	1,179 acres (43%)	1,552 acres (57%)
Air Quality NO_x and ROG (lbs/day)	415.22 and 857.40	Not calculated	319.72 and 660.20	373.70 and 771.66
Biological Resources				
Wetland Loss	46% or 41 acres	0% or 0 acres	19% or 17 acres	19% or 21 acres
Grassland Loss	79% or 2,120 acres	<1% or 10 acres	56% or 1,490 acres	56% or 1,979 acres
Swainson's Hawk Habitat ¹ Loss	84% or 2,231 acres	<1% or 10 acres	65% or 1,736 acres	63% or 2,225 acres
Climate Change				
Greenhouse gas emissions per capita	5.80 MT	9.51 MT	5.57 MT	5.61 MT
Total greenhouse gas emissions	147,386 MT	258 MT	82,706 MT	96,993 MT
Water Demand	6,550 AFY	No public water	5,484 AFY	6,344 AFY
Sewage Disposal	16,094 ESD	No public sewer	12,484 ESD	15,346 ESD
Electricity Demand	122,903,000 kWh	Not calculated	72,003,000 kWh	104,002,000 kWh
Natural Gas Demand	4,201,494 therms	Not calculated	2,988,810 therms	3,704,664 therms

1. This total includes some areas designated Agriculture, which are to be placed in a conservation easement.

2. For landscape-level raptors, the central linear preserve is, conservatively, not considered viable foraging habitat.

Table ALT-31: Summary Comparison Of Alternatives and Project Conclusions

Impact Topic	Significance Conclusion		
	Less Than Significant	Less Than Significant With Mitigation	Significant and Unavoidable
Aesthetics	NP, Alt 2		Project, Alt 1 ^a
Agricultural	NP, Alt 1 & 2		
Air Quality			
Construction NO _x	NP	Project, Alt 1 & 2	
Operation NO _x	NP		Project, Alt 1 & 2
Construction PM	NP		Project, Alt 1 & 2
Air Quality Plans	NP		Project, Alt 1 & 2
Operational CO	NP, Project, Alt 1 & 2		
Toxic Air Contaminants	NP	Project, Alt 1 & 2	
Odors	NP	Project, Alt 1 & 2	
Biological Resources			
Wetland Loss	NP	Alt 1 & 2	Project
Bird Species	NP	Project, Alt 1 & 2	
Amphibian Species	NP	Project, Alt 1 & 2	
Invertebrate Species	NP	Alt 1 & 2	Project
Plant Species	NP	Project, Alt 1 & 2	
Climate Change	NP		Project, Alt 1 & 2
Cultural Resources	NP	Project, Alt 1 & 2	
Geology and Soils	NP, Project, Alt 1 & 2		
Hazardous Materials	NP, Project, Alt 1 & 2		
Hydrology and Water Quality	NP, Project, Alt 1 & 2		
Land Use	NP		Project, Alt 1 & 2
Noise	NP		Project, Alt 1 & 2
Public Services	NP, Project, Alt 1 & 2		
Public Utilities	NP		Project, Alt 1 & 2
Traffic and Circulation	NP		Project, Alt 1 & 2
NOTES; NP – No Project, Alt 1 – Expanded Preserves, Alt 2 – Expanded Footprint a. Only one viewer group so affected; all others are less than significant.			

3 AESTHETICS

INTRODUCTION

The quality of the visual experience associated with a project is not only dependent on the character of the project site, but also the individual perspective and values of the viewer. Typically, residents and recreational viewer groups are especially concerned about the appearance of their visual environment because their viewing experience is more than merely transitory. Perceived adverse visual impacts associated with a project can be the source of concerned opposition, even to projects that may otherwise be well-received.

It should be emphasized that when a viewer group perceives a negative change in the viewshed, this is not necessarily because the new development is unattractive. If a viewer had never seen pre-project conditions, their perception of the visual quality of a given project might be quite high. Thus, the impact typically occurs not because of the quality of the project in question, but rather because of the substantial change in the nature of the view. Many viewers value undisturbed open space views much more highly than views of urbanized or developed property, however well-designed and visually balanced the development may be.

Aesthetic impacts are subjective, and therefore are often treated as an impact topic where thorough objective analysis is not possible. Although visual impacts are subjective and may be viewed differently by various individuals, it is also true that residents of the United States agree on the high visual quality of many landscapes. These areas are often designated as national parks and scenic spots. These agreed-upon factors and concepts of natural beauty can be used to assess the visual impacts of a project.

This chapter addresses aesthetics and visual quality issues related to the development of the proposed Project and its alternatives. Existing aesthetic and visual resources of the Project area are documented. Standards to judge visual sensitivity are presented and relevant scenic resource issues are addressed.

EXISTING SETTING

VISUAL CHARACTER OF REGION

Sacramento County lies near the center of California's Central Valley, at the southern end of the Sacramento Valley. Open space views within the valley region are generally characterized by broad sweeping panoramas of flat agricultural lands and open space

dotted with trees, divided by numerous rivers and creeks. To the east, the Sierra Nevada and their foothills form a background, and the Coast Range provides a backdrop on the western horizon.

VISUAL CHARACTER OF PROJECT AREA

From the perspective of travelers on Grant Line Road, the Project site appears to have the flat topography typical of Sacramento County. This flat area is actually a plateau, after which the site elevations drop sharply into the first of three large intermittent drainages present on the site. All of the property to the east of the plateau – the bulk of the property – exhibits highly variable topography with many small rises and lower valleys. The eastern edge of the property is at a significantly higher elevation than the lands to the east of the site, providing expansive off-site views of rolling and oak-studded terrain, as well as views of the more-distant Sierra Nevada. The Project site is dominated by grassland and wetland areas. Property to the north is similar in character, while the property to the south is visually dominated by the presence of the Kiefer landfill. Land to the west is typical of Sacramento County – flat open fields, and some residential and commercial development within the City of Rancho Cordova, currently about one mile to the west.

SCENIC VIEWS AND RESOURCES

Visual resources are classified in two categories: scenic views and scenic resources. Scenic resources are described in the CEQA Environmental Checklist as specific features of a viewing area (or viewshed) such as trees, rock outcroppings, and historic buildings. They are specific features that act as the focal point of a viewshed and are usually foreground elements. Scenic views are elements of the broader viewshed such as mountain ranges, valleys, and ridgelines. They are usually middle ground or background elements of a viewshed that can be seen from a range of viewpoints, often along a roadway or other corridor. The Sierra Nevada mountain range, which is visible from various viewing locations (though haze can block views), is an important scenic view in the area. Scott Road and Latrobe Road, which lie to the east and south of the site, are designated by the Sacramento County General Plan Scenic Highways Element as “scenic corridors”.

LIGHT AND GLARE SOURCES

The unincorporated urban areas of the County include existing sources of daytime glare and nighttime lighting and illumination. Sources of daytime glare include direct beam sunlight and reflections from windows, architectural coatings, glass and other shiny reflective surfaces. Such glare usually only impacts the immediate environment, except in cases where buildings are high-rise and can be seen from greater distances. Nighttime light illumination and associated glare can be divided into stationary and mobile sources. Stationary sources of nighttime light include structure illumination, decorative landscape lighting, and lighted parking lots. Mobile sources are the vehicles traveling on roadways. The unincorporated rural and agricultural areas of the County,

which includes the site, are sparsely developed and used for agriculture. These rural land uses typically do not generate substantial amounts of glare, lighting, or illumination, and the ambient nighttime lighting and illumination levels are very low.

REGULATORY SETTING

TITLE 24 OUTDOOR LIGHTING

The 2008 Building Efficiency Standards of Title 24 include regulations for outdoor lighting characteristics such as maximum power and brightness, shielding, and sensor controls to turn lighting on and off. Different lighting standards are set by classifying areas by lighting zone, which are zones LZ1 through LZ4. The ambient illumination for LZ1 is “dark”, for LZ2 is “low”, for LZ3 is “medium”, and for LZ4 is “high” (see Table 10-114-A of the Building Efficiency Standards). Lighting regulations for areas of lower ambient lighting are more strict – providing lower wattage allowances – in order to protect those areas from new sources of light pollution and light trespass. The Project is within zone LZ2.

2030 SACRAMENTO COUNTY GENERAL PLAN

The General Plan policies applicable to the Project are:

- CI-53. Roadway improvements along established scenic corridors shall be designed and constructed so as to minimize impacts to the scenic qualities of the corridor.
- CI-58. Continue 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.
- CI-61. Study additional roads which would appropriately be designated as County Scenic Corridors. Roads to be considered are Jackson Highway in the foothills, Stonehouse Road, approach roads to the City of Folsom, the balance of Twin Cities Road, Lone Road, Meiss Road, and all roads running through the Permanent Agricultural lands.
- CO-117. Public roads, parking, and associated fill slopes shall be located outside of the stream corridor, except at stream crossings and for purposes of extending or setting back levees. The construction of public roads and parking should utilize structural materials to facilitate permeability. Crossings shall be minimized and be aesthetically compatible with naturalistic values of the stream channel.
- LU-18. Encourage development that complements the aesthetic style and character of existing development nearby to help build a cohesive identity for the area.

LU-31. Strive to achieve a natural nighttime environment and an uncompromised public view of the night sky by reducing light pollution.

In addition to the policies from the Land Use Element above, the Conservation element states its primary goal as: “Natural resources managed and protected for the use and **enjoyment** of present and future generations while maintaining the long-term ecological health and balance of the environment.” [emphasis added] The concept of enjoyment includes appreciation of scenic resources and visual beauty.

SACRAMENTO COUNTY ZONING CODE

Title 1 (General Provisions) of the Zoning Code contains standards requiring that illumination of buildings, landscaping, signs, and parking and loading areas be shielded and directed so that no light trespasses onto adjacent properties. Title III (Use Regulations and Development Standards) requires that lighting shall be directed away from residential areas and public streets so that glare is not produced that could impact the general safety of vehicular traffic and the privacy and well-being of residents.

SIGNIFICANCE CRITERIA

The degree of impact of a project, either negative or beneficial, to the visual character of the area is largely subjective. Few objective or quantitative standards are available to analyze visual quality, and individual viewers respond differently to changes in the physical environment. Based on the CEQA Guidelines Appendix G, a project would have a significant impact on aesthetics if it would:

1. Have a substantial adverse effect on a scenic vista;
2. Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway;
3. Substantially degrade the existing visual character or quality of the site and its surroundings; and/or
4. Create a new substantial source of light and glare, which would adversely affect day or nighttime views in the area.

METHODOLOGY

The United States Department of Transportation, Federal Highway Administration (FHWA) developed a manual to aid in the preparation of visual assessments for highway projects. Although the proposed Project is not for a highway or other roadway, the key concepts established by FHWA apply to all visual settings and were used to

help evaluate the visual character and quality of the region and the Project site. Many of these same key concepts are used to evaluate aesthetics in many contexts, including artistic compositions, architecture, and residential landscaping design. For the purposes of landscapes, the concepts of vividness, intactness, and unity define visual quality. Definitions of key terms and the Project impacts to visual quality and character are described below.

- *Vividness* is a measure of the visual impression that remains in the memory of the viewer (e.g. Niagra Falls). Vivid visual experiences are striking and distinctive.
- *Intactness* is the visual integrity of the natural and built landscape. Intact landscapes are unobstructed visual experiences.
- *Unity* is the coherent inter-compatibility of connected landscape elements. A high degree of unity creates a harmonious visual pattern.

Visual character is derived from visual pattern elements and their dominance, scale (apparent size relationship), diversity, and/or continuity (uninterrupted flow of patterns). Visual pattern elements include form (visual mass or shape), line (silhouette), color, and texture (apparent coarseness). Although visual character and quality can be described objectively, there is no established official process that will identify all areas of high visual quality. Therefore in part visual quality is often defined by viewer sensitivity. Viewer sensitivity is defined using the following criteria:

- Visibility of resources in the landscape
- Proximity of viewers to the visual resource
- Elevation of viewers relative to the visual resource
- Frequency and duration of views
- Number of viewers
- Types and expectations of individuals and viewer groups

Plate AE-1 and Plate AE-2, below, are examples of high and low visual quality in Sacramento County. In the first image there are no encroachments (highly intact), the site is unified, and the clouds and landscape combine to provide diversity in the view. In the second image, the view is diverse, but the entire view is taken up by encroachments and the site contains multiple elements that are not cohesive.

Plate AE-1: Example of High Visual Quality



Deer Creek Hills Preserve, photo from the Sacramento Valley Open Space Conservancy

Plate AE-2: Example of Low Visual Quality



VIEWER GROUPS

The visual experience is a combination of visual resources and viewer response. Different viewer groups respond differently to visual environments. The opinions or preferences of different groups depend on viewer activity and awareness, local values and the cultural significance of the visual resources. Viewer activity affects the viewers' ability to perceive the landscape. Depending on the activity, a viewer may be attracted or distracted from the landscape. For example, a person reclining in a backyard or sitting on a bench will be encouraged to view the landscape, whereas a person driving along a road on an errand will be distracted from the landscape and concentrate more on the road itself.

Viewer awareness also affects the viewer's receptivity to the landscape. Viewer awareness is affected by position, preconceptions, and recent visual experience. If viewer sensitivity is very high, any visible change in the area may be discouraged. The following groups are likely to have views of the Project: people passing by on Douglas Road and/or living in Rancho Cordova near Douglas Road, people passing by on Grant Line Road, people passing by on Kiefer Road, people in the vicinity of Latrobe Road, and existing residents to the north. To aid in the analysis, the firm Post, Buckley, Schuh, & Jernigan, Inc (hereinafter called PBS&J, though the company is now called Atkins) conducted a site visit and took photographs from different vantage points in and around the community. Representative photos have been included in this document, as have photosimulations of the Project. Views from Scott Road were not considered because after examining the views it was determined that the presence of trees and hills in between the site and the roadway would largely prevent the site from being viewed.

The visual character and availability of site views varies considerably depending on the viewing location. For this reason, the analyses to follow are separated by viewing location/viewer group. Photo exhibits accompany each of the viewing location/group discussions: a photograph of the existing viewing condition and a photosimulation of the Project from that viewing location. An exhibit of these photo locations and the viewing direction is included as Plate AE-3.

IMPACT QUANTIFICATION METHODOLOGY

The FHWA guidance manual contains a numeric formula to quantify the change in visual quality. Each of the three primary characteristics (vividness, intactness, and unity) is given a numeric rating between 1 and 7 (from very low to very high). The following formula is then applied: $(\text{Vividness} + \text{Intactness} + \text{Unity})/3$. The numeric difference between the existing visual quality and the proposed visual quality is a representation of the impact to the Project site. Table VA-1 provides a basic explanation of some (not all) factors to take into account when applying the scale.

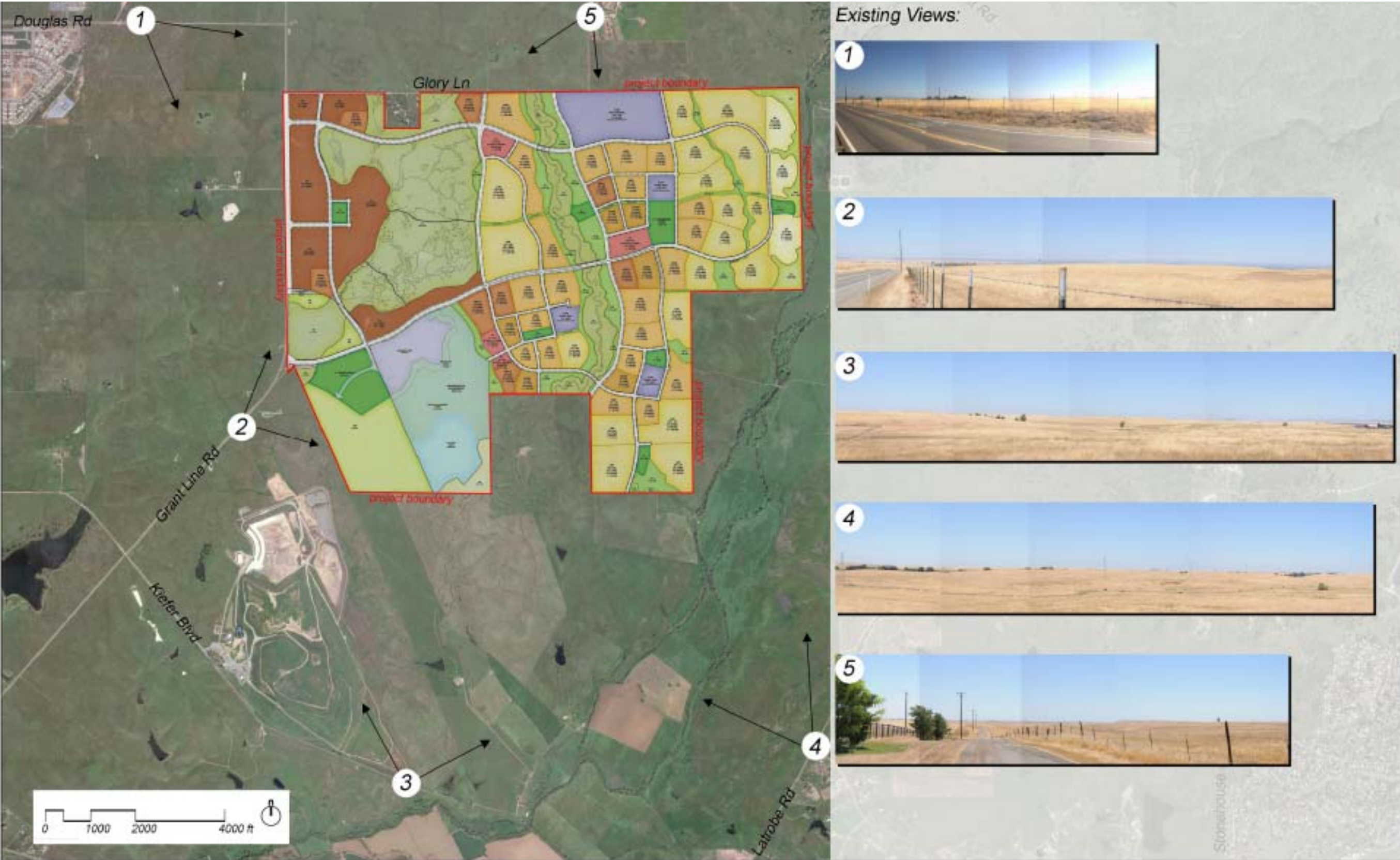
The perceived impact to the quality of a view is not a strict linear function. If a project resulted in a decrease of 2 points of visual quality, the degree to which viewers would be affected by that decrease would depend on the initial quality of the site. When a site

is considered of high visual quality, even small decreases in the quality are much more noticeable and remarked on. However, when a site is only of moderate or low visual quality, observers do not tend to be as affected by the change. The significance of a decrease in visual quality will also depend on how often and for how long the site will be viewed.

Table AE-1: Evaluation Scale

Scale	Vividness	Human-made development	Encroachments or Eyesores	Unity/Intactness
7	Very High	None	None	Very High
6	High	Little	Few	High
5	Moderately High	Some	Some	Moderately High
4	Average	Average	Average	Average
3	Moderately Low	Moderately High	Several	Moderately Low
2	Low	High	Many	Low
1	Very Low	Very High	Very Many	Very Low

Plate AE-3: Viewpoint Map



IMPACTS AND ANALYSIS

IMPACT: DEGRADATION OF EXISTING VIEWS AND VISUAL QUALITY

DOUGLAS ROAD/RANCHO CORDOVA VIEWER GROUP (VIEWPOINT 1)

In the existing condition, the views from Douglas Road include the relatively flat grassland plateau of the site against the backdrop of the distant Sierra Nevada mountains (refer to Plate AE-4). There is a series of radio transmission towers on property north of the site, but these do not dominate the viewshed because though they are tall and striped with red, they are also quite thin. The towers are visible in Plate AE-4 rising above the trees.

The primary visual break in this view is a grouping of trees at the northern end of the Project site. Most of these trees are part of an olive orchard that surrounds a home and other appurtenant structures that are just off-site (none of the structures are apparent). This collection of trees is particularly dominant in the landscape during the late summer, because while the majority of the viewshed is taken up by smooth-textured, low-profile, and wheat-colored grasslands, the trees are tall, dark green, and rough-textured. During the winter the contrast is not as high, and thus the trees are not as dominant. The grasses and trees are both green as the winter rains begin, and then in the spring there are areas of various colors (including white, yellow, and purple) where flowers are blooming. In late spring and early summer, the site becomes two-toned, as upland grasses begin to dry to shades of brown but the wetland areas remain green.

The grouping of trees actually detracts from the visual quality of the view, because they are so unique and dominant in the landscape that they are not unified with the rest of the view. The trees draw the eye of the viewer somewhat away from the whole. Nonetheless, the overall impression is still one of openness and continuity; the views are highly intact – meaning that there are few unattractive or negative encroachments in the view. The only encroachments are the line of telephone poles, some fencing, and the road itself. Though the terrain off-site to the east of the Project actually drops off and the landscape alters significantly to become rolling and tree studded, this is not perceptible from Douglas Road. The grasslands appear to continue unbroken all the way up to the foot of the Sierra Nevada visible in the distance. Though unified and intact, the uniformity of the view means that it is not particularly vivid. One cannot distinguish the Project site from the surrounding grasslands – there is nothing particularly memorable or striking. Existing condition vividness is rated 2 (low), while unity and intactness is rated 6 (high), for an average rating of 5 (moderately high).

Plate AE-4: View from Douglas Road



Viewpoint 1 – Before Project Implementation (Existing Conditions)



Viewpoint 1 – After Project Implementation

As shown on Plate AE-4, the Project will remove the illusion of continuity – that is, the illusion that the grasslands continue unbroken up to the foothills – both due to the introduction of the structures themselves, and because of the substantial changes in the color and texture of the viewshed. The Project will introduce hard, angled shapes into an area that previously appeared smooth, and will introduce a wider array of color into an area that was previously quite uniform. Though this will increase the diversity of the view, the loss of continuity and the partial obstruction of views of the Sierra Nevada has the potential to significantly and negatively impact the quality of the views. Project condition vividness is rated 5, intactness is rated 1 (very low), and unity is rated 2 (low), for an average rating of 3 (moderately low). Reducing visual quality from moderately high to moderately low is a *significant* impact.

GRANT LINE ROAD VIEWER GROUP (VIEWPOINT 2)

The views from Grant Line Road are very similar to those from Douglas Road, except that viewers passing along the road will see the Project from multiple perspectives as they approach and then pass the site. The example photograph and photosimulation are shown from the perspective of a northbound driver to the south of the site (Plate AE-5). The grouping of trees that is so dominant in the Douglas Road views is either absent or more distant in the majority of views from Grant Line Road. Because of this, there is little to distract from the flat line and smooth texture of the grasslands that stretch away from the road. The visual “end” of the site is the Sierra Nevada mountain range in the distance – provided that regional haze does not obscure it. As with the view from Douglas Road, the unity and intactness of the views is high, but the vividness is low. Existing condition vividness is rated 2 (low), while unity and intactness is rated 6 (high), for an average rating of 5 (moderately high).

As shown on Plate AE-5 and very much like impacts to the Douglas Road Viewer Group, the Project will remove the illusion of continuity, both due to the introduction of the structures themselves, and because of the substantial changes in the color and texture of the viewshed. The Project will introduce hard, angled shapes into an area that previously appeared smooth, and will introduce a wider array of color into an area that was previously quite uniform. Viewers at the south end of Grant Line Road will be at a high enough elevation to see beyond the Project in some areas, so that portions of the backdrop Sierra Nevada will still be visible. Though this will increase the diversity of the view, the loss of continuity has the potential to significantly and negatively impact the quality of the views. Project condition vividness is rated 5, intactness is rated 1 (very low), and unity is rated 2 (low), for an average rating of 3 (moderately low). Reducing visual quality from moderately high to moderately low is a *significant* impact.

Plate AE-5: View from Grant Line Road



Viewpoint 2 –Before Project Implementation (Existing Conditions)



Viewpoint 2 – After Project Implementation

KIEFER ROAD VIEWER GROUPS (VIEWPOINT 3)

From some perspectives along Kiefer Road the site is not visible, because it is blocked from view by Kiefer Landfill. Where the site is visible the color and the continuity of the views are similar to those previously described (see Plate AE-6). Viewers see a sweep of grassland backed by the Sierra Nevada. The primary difference is that the topographical changes on the east side of the site are visible, as well as some of the tree-lined drainages located off of the site. Viewers on Kiefer Road can also see the rolling and tree-dotted terrain to the east of the site, as well as a few rural agricultural residences and buildings (note the far right of Plate AE-6).

The differences noted above increase the diversity of site views by introducing additional colors, varying the lines and angles of the horizon, and introducing multiple textures (smooth grass, rough trees). Though the diversity of the view is increased, these elements remain visually unified; the transition from one visual element to another is smooth. This is unlike the grouping of trees in the viewshed of Douglas Road, which is so unique in the view that it stands out as a distinct object rather than as a unified part of the whole. Though the vividness of this view is higher than from either Douglas or Grant Line Road, it is still moderate-to-low; the view is not highly distinctive or memorable.

From most perspectives there are few negative encroachments in the view. This is not the case for people viewing the site from the actual Kiefer Landfill, in which case the view includes a significant amount of negative visual encroachments as part of the foreground of the view. Viewers from the landfill are expected to have low sensitivity to any change in the view, as it is not typical to expect an attractive view when depositing trash at a landfill. Employees may have more appreciation for the existing views, but nonetheless are engaged in their work and in many cases may not even be able to see the site for large parts of the day. From the actual landfill area, vividness is rated 2 (low), intactness 1 (very low), and unity 1, for an average of 1. From other areas along the road vividness is rated 2, intactness is rated 6 (high), and unity is rated 6, for an average of 5 (moderately high).

The Project will have very little impact on the views from Kiefer Road. Kiefer Road is much lower in elevation than the areas of the Project site that will be developed, and the development on the eastern part of the site is planned to be both low density and set back from the edge of the plateau. The result is that only the very tops of some of the structures and landscape trees may be visible edging over the horizon. Project condition views from non-landfill areas of Kiefer Road are essentially unchanged, and retain their existing condition ratings. Impacts to visual quality from this viewpoint are *less than significant*.

Plate AE-6: View From Kiefer Road



Viewpoint 3 – Before Project Implementation (Existing Conditions)



Viewpoint 3 – After Project Implementation

LATROBE ROAD VIEWER GROUP (VIEWPOINT 4)

One large difference between the views from Latrobe Road and all other viewpoints is that the viewer of the Project will have their back to the Sierra Nevada – the Sierra Nevada are not part of the viewshed. Also, from this perspective viewers cannot see beyond the Project site. The Latrobe Road viewshed contains a major encroachment in the form of a line of transmission towers. Otherwise, the form, line and color are very similar to the view from Kiefer Road and receive the same ratings (average of 5, or moderately high).

The Project will be more visible from Latrobe Road than from Kiefer Road, because the relative elevations and topography between the site and Latrobe Road allow viewers to see up onto the site plateau. Though visible, the large distance between the viewer and the development on the site will mute many of the details of the development, and thus will not appreciably increase vividness. Observers passing by along the road may perceive the Project mainly as a rough, multi-hued edge to the horizon, which means that unity will not appreciably decrease. People who stop to observe may take more notice of the individual buildings and other Project components, but will still be at too great a distance to make out clear details. Intactness will decrease slightly, since it will be recognizable that the new feature in the landscape is of human construction. Since viewers could not see beyond the Project site in pre-Project conditions, the Project will alter but not block existing views. Project condition ratings for vividness and unity will remain the same as existing condition ratings, but intactness will decrease to 5 (moderately high), for an average rating of 4 (average). Though the Project will decrease visual quality from moderately high to average, this is not a large drop in quality. Furthermore, views from this area are largely transitory and are thus not as sensitive to change. For the foregoing reasons, visual impacts to this viewing location are *less than significant*.

Plate AE-7: View from Latrobe Road



Viewpoint 4 –Before Project Implementation (Existing Conditions)



Viewpoint 4 – After Project Implementation

NORTHERN RESIDENTS VIEWER GROUP (VIEWPOINT 5)

Viewers to the north of the site have the most unique view, because the land to the north is at a higher elevation than most of the site. While all other viewpoints can only see portions of the site, the northern viewer group can see the entire Project area as well as the land to the east of the site where the terrain becomes more wooded. The views from the north are therefore the most expansive and the most diverse when compared with the other viewpoints. Plate AE-8 is an example of this view, though the camera lens is aimed south-southwest so the foothills and the Sierra Nevada are not visible in this photograph.

Depending on the location of the viewer, there are some encroachments in the view, such as fencelines or telephone poles, but the view is largely intact. The view also has high unity, consisting mainly of grasslands that are ultimately backed by a more wooded landscape in the distance. The diversity of the view is influenced by these two vegetation cover types, but also by the topography. From the north, the changes in topography are visible to the viewer; the site begins on a plateau, then drops steeply off into more rolling terrain, and ultimately drops off again down to Carson Creek. Vividness is rated as 3 (moderately low), and unity and intactness are rated 6 (high), for an average existing condition rating of 5 (moderately high).

The viewing locations are high enough in elevation that viewers will be able to see beyond the Project after it is completed. Nonetheless, the Project will remove the illusion of continuity, both due to the introduction of the structures themselves, and because of the substantial changes in the color and texture of the viewshed. The Project will introduce hard, angled shapes into an area that previously appeared smooth, and will introduce a wider array of color into an area that was previously quite uniform. Though this will increase the diversity of the view, the loss of continuity and the introduction of major encroachments will substantially reduce the quality of the current views. Project condition vividness is rated 5, and intactness and unity is rated 2 (low), for an average rating of 3 (moderately low). Reducing visual quality from moderately high to moderately low is a *significant* impact.

This viewer group will be most sensitive to any changes the Project will make to the viewshed. There are three reasons for this sensitivity: in the existing condition the entire site is visible, the viewers are relatively close to the site, and the viewpoints are from residences. Residents usually consider the surrounding views to be part of their property, and are thus more protective of existing scenic views. Residents also observe views for much longer periods of time, and during times of relaxation and enjoyment when scenic resources are typically more appreciated.

Plate AE-8: View from North of Glory Lane



Viewpoint 5 –Before Project Implementation (Existing Conditions)



Viewpoint 5 – After Project Implementation

SUMMARY OF VIEWSHED IMPACTS

Views from Kiefer Road and Latrobe Road will not be significantly impacted. From Kiefer Road only the very tops of some of the structures and landscape trees may be visible edging over the horizon. Project condition views from non-landfill areas of Kiefer Road are essentially unchanged, and retain their existing condition ratings. The Project will be more visible from Latrobe Road than from Kiefer Road, because the relative elevations and topography between the site and Latrobe Road allow viewers to see up onto the site plateau. Though visible, the large distance between the viewer and the development on the site will mute many of the details of the development.

Project impacts to the views from Douglas Road/Rancho Cordova, Grant Line Road, and residents to the north will be *significant*. The Project will remove the illusion of continuity – that is, the illusion that the grasslands continue unbroken up to the foothills – both due to the introduction of the structures themselves, and because of the substantial changes in the color and texture of the viewshed. The Project will introduce hard, angled shapes into an area that previously appeared smooth, and will introduce a wider array of color into an area that was previously quite uniform. Though this will increase the diversity of the view, the loss of continuity and the partial obstruction of views of the Sierra Nevada significantly and negatively impacts the quality of the views. These impacts are due to the placement of a large urban development in an area currently dominated by open space; the impact is not due to any particular feature or features that could be changed. The Project will substantially degrade the existing visual character and quality of the site; impacts are *significant and unavoidable*.

MITIGATION MEASURES:

No mitigation is available.

IMPACT: NEW SOURCES OF LIGHT OR GLARE

The Project does not involve any elements with particularly reflective surfaces, and thus will not introduce a significant new source of glare. The Project will, on the other hand, involve a substantial amount of new residential and commercial development that will include lighting sources such as street lights and security lights. Nighttime lighting has been associated with negative human health impacts and ecological impacts. Birds may collide with lighted transmission towers at night¹ and animals that rely on the darkness to hide them will be visible to predators and prey. In humans, the primary effect is sleep disruption. Nighttime lighting is necessary for safety, for work productivity, and for recreation, but Title 24 and County Ordinances were instituted in recognition that excess lighting should be avoided.

¹ Poot, H., B. J. Ens, H. de Vries, M. A. H. Donners, M. R. Wernand, and J. M. Marquenie. [Green light for nocturnally migrating birds](#). *Ecology and Society* 13(2): 47, 2008.

The Project site is within a rural area that has minimal lighting, and is designated as an LZ2 zone (low levels of ambient nighttime light). The nearby Kiefer landfill includes nighttime lighting sources, but the distance of the landfill from the Project site ensures that its impact is diffused and insignificant. Because the Project is in an LZ2 zone, the lighting restrictions will be more robust than if the Project were in a more urban environment. For instance, Table 147-B of the 2008 Building Efficiency standards indicates that building entrances in an LZ2 zone are limited to 75 watts, while in an LZ4 (urbanized) zone the allowance is 120 watts. The SPA also includes narrative requirements for exterior Project lighting, beginning in Section 4.15.5.

Most of the Project will result in standard urban lighting systems with average light output, such as porch lights, parking lot lights, and similar. The exceptions are the sports fields at the University/College Campus Center and the sports park. Both areas will include facilities for organized sporting events such as baseball, soccer, and football, and this will require stadium lighting for after-sunset games. Stadium lighting has a much higher light output than other lighting sources, and is generated from a greater height than the average lighting source. This allows the light output to be spilled over a larger area, and for the lights to be directly visible even from large distances. Moreover, lighting for athletic fields is exempt from the lighting limitations of the 2008 Building Efficiency Standards.

Both stadium lighting areas are located adjacent to commercial uses, university buildings, or open space. The nearest existing residential areas to the proposed athletic fields are more than a mile away. The nearest Project residential areas will be approximately 2,000 feet from the athletic fields. These distances are sufficient to ensure that nighttime sleep will not be disrupted by the light source.

Though there are existing restrictions that will help to minimize the impacts of new lighting sources on existing nighttime conditions, the Project will still result in a substantial new source of light. This will not result in substantial nighttime sleep disruption for existing residential areas, because those areas are more than a mile from the site. There will be some disruption for wildlife which use the habitats surrounding the site because sky glow will increase ambient lighting conditions in the area, and direct light spill will impact areas directly adjacent to the Project. Many wildlife species in the area can adapt to these conditions, as they have to other urbanizing areas. There are no special status species in the area known to be particularly susceptible to disruption resulting from nighttime lighting.

Though the Project lighting will not result in sleep disruption or significant wildlife impacts, the significance question asked is whether the Project introduces a substantial new source of light that adversely impacts views; it does. There are existing regulations which will minimize lighting impacts, but the Project will nonetheless result in a *significant* impact related to new lighting sources. This impact is not due to any individual feature or features, but due to the result of introducing a large urban development within a rural landscape. Though the impact cannot be made less than significant, there are means available to further reduce the level of light pollution produced by the Project.

The International Dark-Sky Association (IDA) is a world-recognized authority on nighttime lighting and light pollution. IDA operates a program which reviews and rates outdoor lighting fixtures, giving IDA-approved status to fixtures that minimize glare and light trespass. The IDA maintains a list of fixtures that have been approved; mitigation recommends that the SPA section on outdoor lighting be revised to include a requirement to use IDA-approved fixtures. Though feasible mitigation is applied, the Project will generate a substantial new source of light; impacts are *significant and unavoidable*.

MITIGATION MEASURES:

AE-1. The SPA shall be amended to require all lighting applications subject to the 2008 Building Efficiency Standards Section 147 to use fixtures approved by the International Dark Sky Association.

4 AGRICULTURAL RESOURCES

INTRODUCTION

This chapter describes the existing agricultural resources within the Project area and analyzes possible impacts to agricultural uses and agricultural lands from implementation of the Project. The chapter focuses on the impact of converting the designated farmland on the site to non-agricultural uses, and on impacts related to the Williamson Act contract on the site.

ENVIRONMENTAL SETTING

The Project site is located in the eastern portion of Sacramento County, within the Cosumnes community, on approximately 2,669 acres. The Project is bounded by the City of Rancho Cordova to the west, Carson Creek to the east, and Glory Lane to the north. The Keifer Landfill is located south of the Project site. Most of the Project is within the Urban Services Boundary (USB); however, none of the Project site is within the Urban Policy Area (UPA).

The Project site is designated by the Sacramento County General Plan as General Agriculture (80 acres) and is zoned for AG-80 agricultural uses (Plate AR-1). The site is also predominantly grassland which is used for cattle grazing; there are no structures on the site. There was a small eucalyptus grove in the southwest quadrant of the site, which had not been used for agricultural purposes for many years and was cut down by the property owner several years ago. The land underlying the historic grove is designated Unique Farmland due to the historic potential use of the eucalyptus as a crop. There are no intensive agricultural uses on the site (Plate AR-2 and Plate AR-3).

Properties to the north, east, and south of the site are zoned for agriculture uses (AG-80 and AG-20). To the north the landscape is similar to that of the site – predominantly grassland suitable for grazing. The lands east of the site lie across Carson Creek, and are also grazed, though the grassland begins to transition into oak woodland. South of the site is the Kiefer landfill and southeast there are areas within the Deer Creek floodplain that are used for row crops.

There are approximately 480 acres in the southeastern quadrant of the site that are under a Williamson Act contract. The contract is in non-renewal and is expected to expire in 2016 (Plate AR-4). There are two off-site active contracts adjacent to this contract on the east and south. These contracts encompass approximately 1,100 acres.

Plate AR-1: Existing Zoning

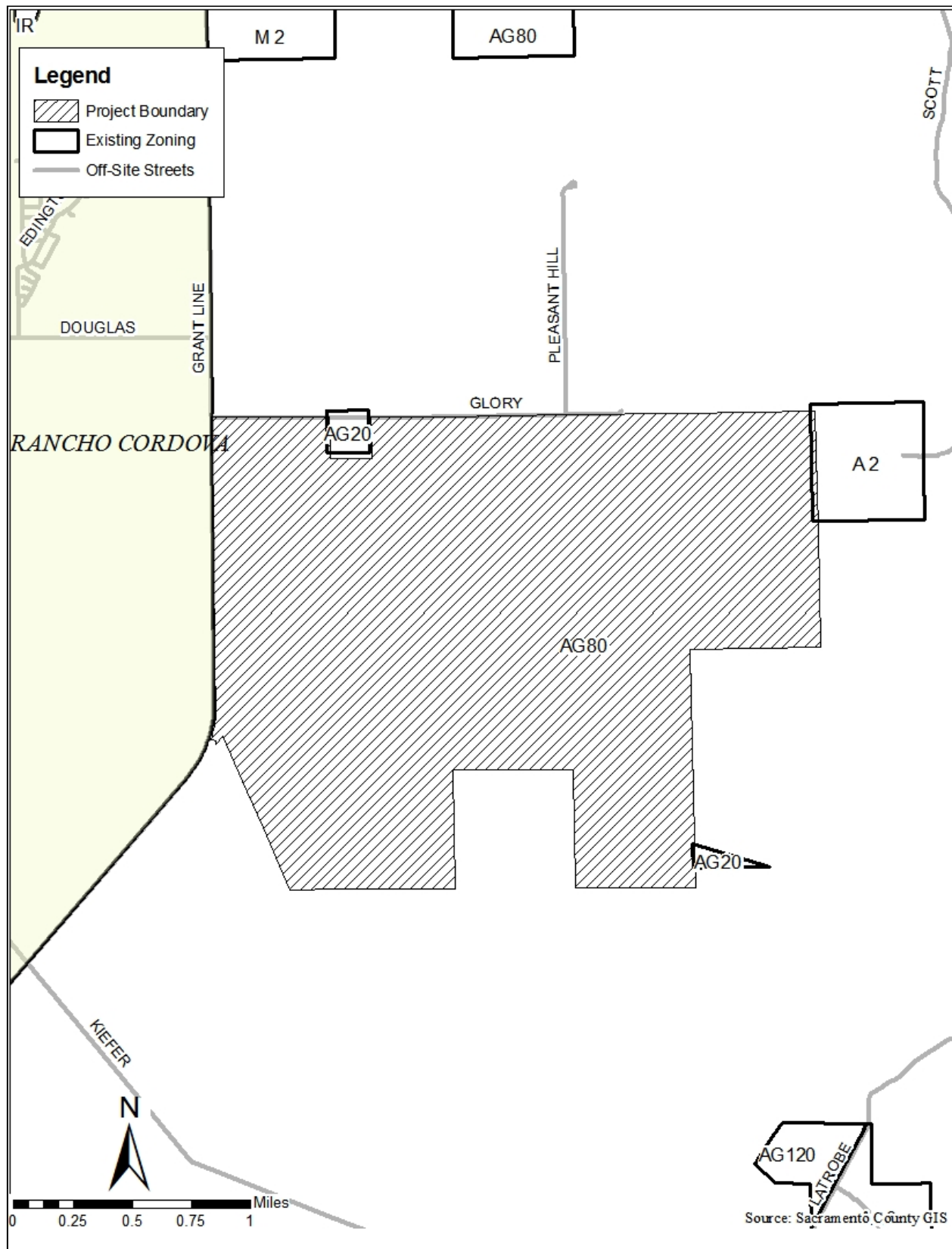


Plate AR-2: Farmland Classifications

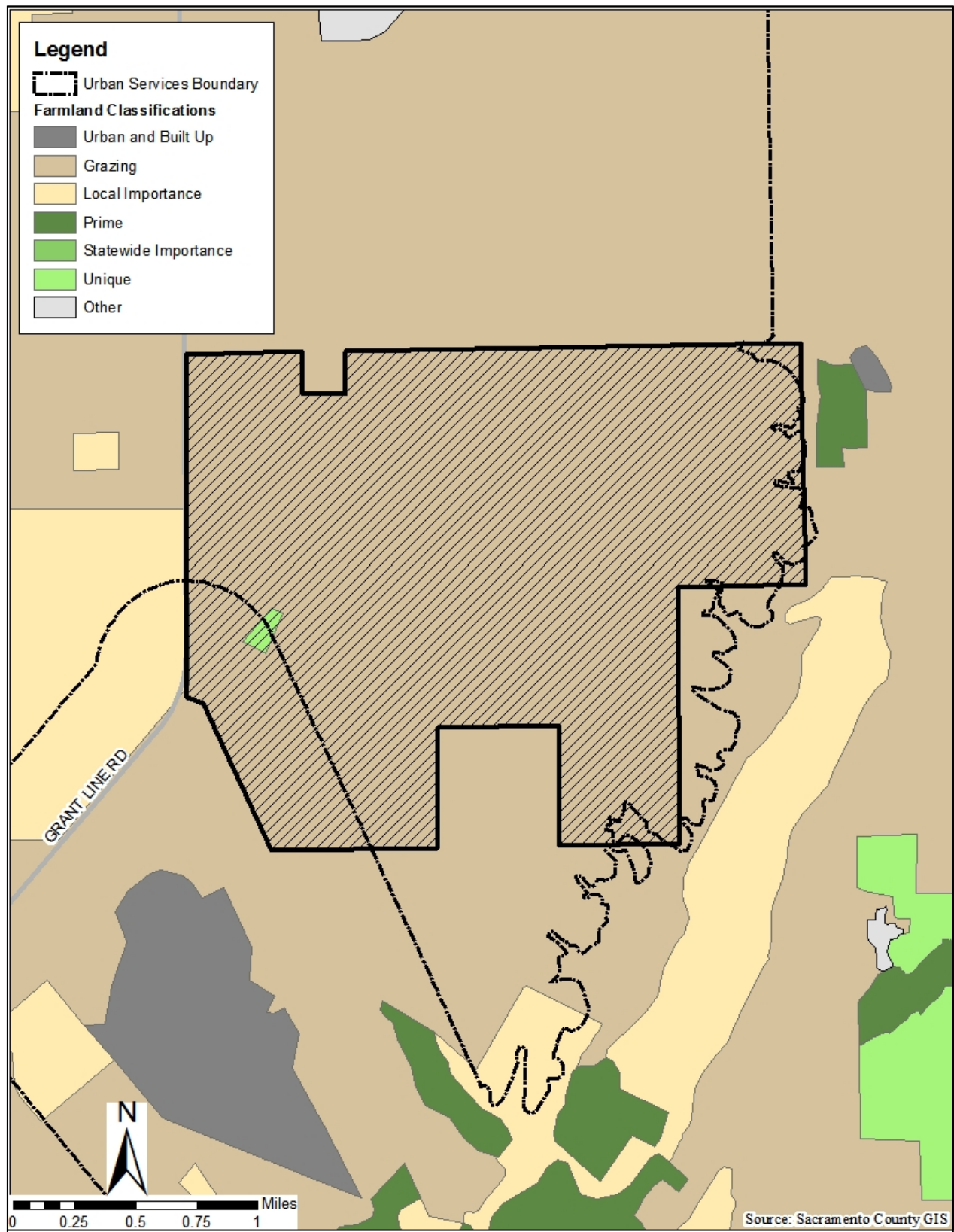


Plate AR-3: Unique Farmland and Proposed Land Uses

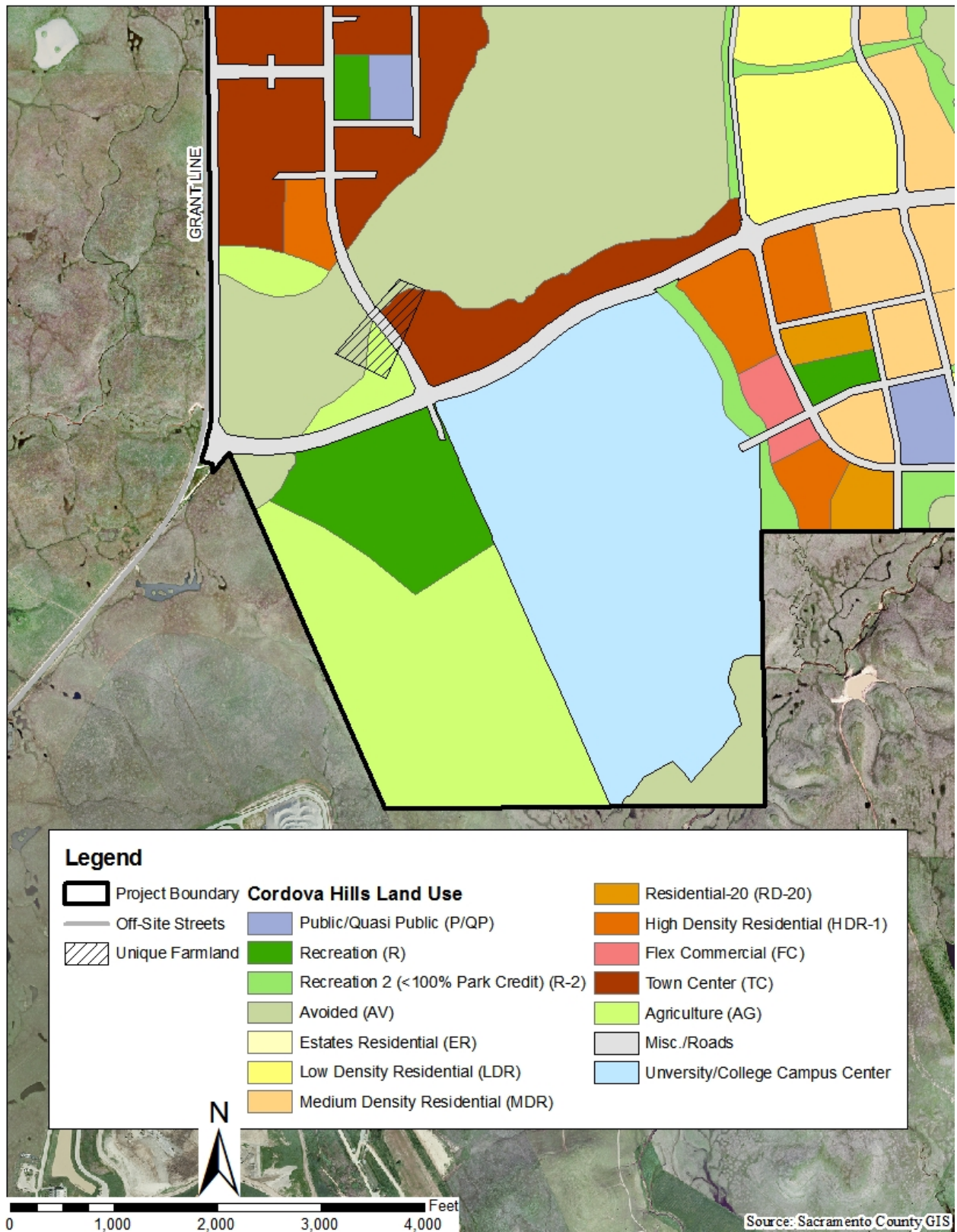
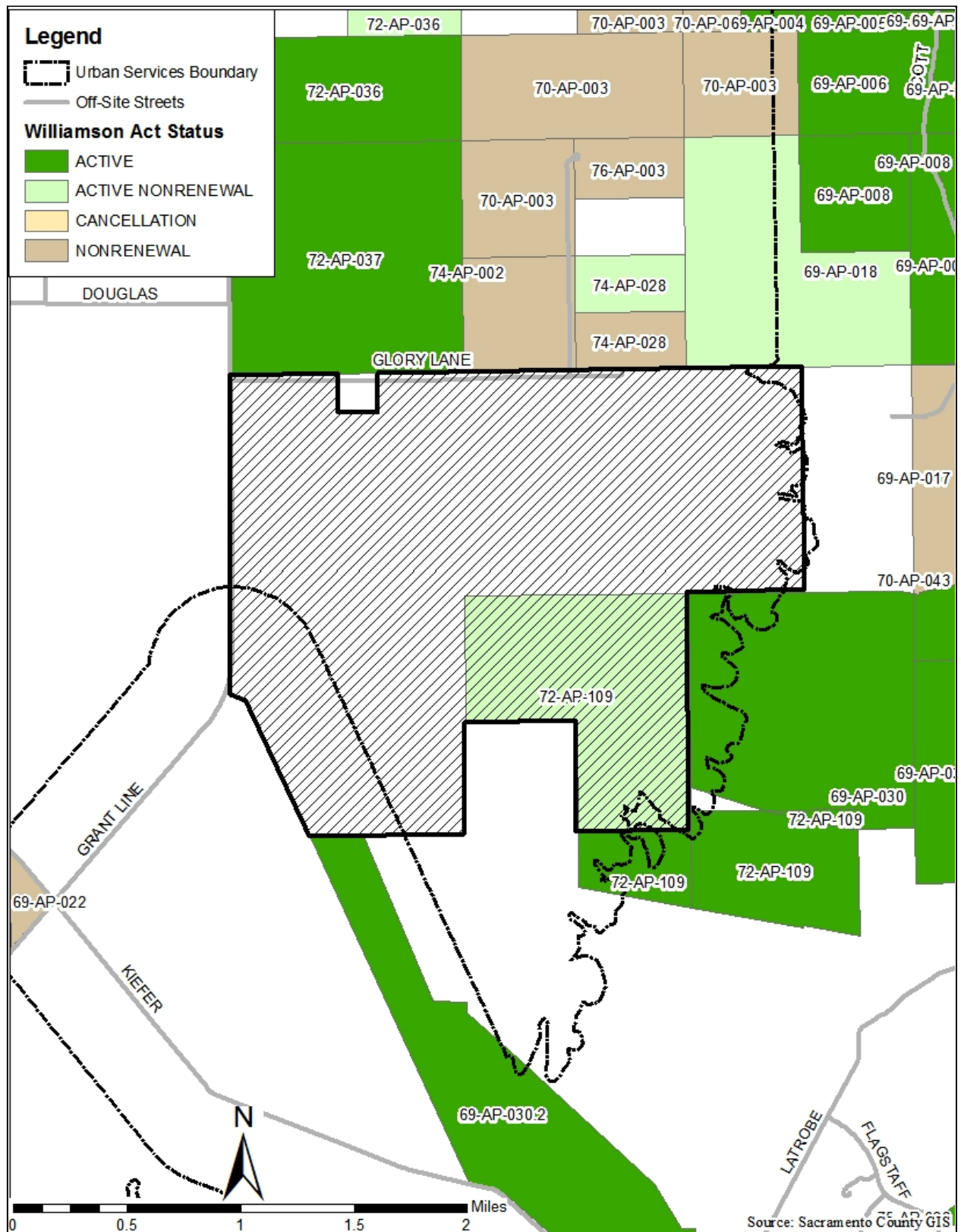


Plate AR-4: Williamson Act Contracts in Vicinity



REGULATORY SETTING

FARMLAND MAPPING AND MONITORING PROGRAM

The California Department of Conservation's Farmland Mapping and Monitoring Program (FMMP) was established in 1984 to document the location, quality, and quantity of agricultural lands and conversion of those lands over time. The program provides impartial analysis of agricultural land use changes throughout California.

The FMMP is tasked with mapping and monitoring important farmlands for most of the State's agricultural areas. The maps are prepared on the basis of soil survey information and land inventory and monitoring criteria developed by the US Department of Agriculture (USDA), Natural Resources Conservation Service. The minimum mapping unit used for all agricultural land categories except grazing land is 10 acres. The minimum unit for grazing land is 40 acres. Though the FMMP typically updates its farmland maps every two years based on information from local agencies and recent aerial photography, the most recent Sacramento County Important Farmland Map is dated 2008. For inventory purposes, the following categories were developed to describe the qualities of land in terms of its suitability for agricultural production.

- *Prime Farmland* is defined by the state as "land with the best combination of physical and chemical features able to sustain long-term production of agricultural crops." Prime Farmland has the soil, quality, growing season, and moisture supply needed to produce sustained high yields. To be designated as Prime Farmland, the land must have been used for production of irrigated crops at some time during the four years prior to the mapping date.
- *Farmland of Statewide Importance* is defined by the state as "land similar to Prime Farmland that has a good combination of physical and chemical characteristics for the production of agricultural crops." This land has less ability to store moisture than Prime Farmland. In order for land to be designated as Farmland of Statewide Importance, it must have been used for production of irrigated crops at some time during the four years prior to the mapping date.
- *Unique Farmland* consists of lower-quality soils but is nonetheless used for production of the state's leading agricultural crops. Unique Farmland is usually irrigated, but may include nonirrigated orchards or vineyards in some climatic zones in California. To qualify for this designation, land must have been used for crops at some time during the four years prior to the mapping date.
- *Farmland of Local Importance* is determined by each county's board of supervisors and a local advisory committee. For Sacramento County, this classification refers to lands which do not qualify as Prime, Statewide, or Unique designation but are currently irrigated crops or pasture or nonirrigated crops; lands that would be Prime or Statewide designation and have been improved for

irrigation but are now idle; and lands which currently support confined livestock, poultry operations, and aquaculture.

- *Grazing Land* is land which is suitable for grazing of livestock. The minimum mapping unit for this category is 40 acres.

WILLIAMSON ACT

The Williamson Act, also known as the California Land Conservation Act of 1965, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space uses. When the County enters into a contract with the landowners under the Williamson Act, the landowner agrees to limit the use of the land to agriculture and compatible uses for a period of at least ten years and the County agrees to tax the land at a rate based on the agricultural production of the land, rather than its real estate market value. The County has designated areas as agricultural preserves within which the County will enter into contracts for the preservation of the land in agriculture.

2030 SACRAMENTO COUNTY GENERAL PLAN

The following policies of the 2030 General Plan are applicable to the Project:

- AG-1. The County shall protect prime, statewide importance, unique, and local importance farmlands located outside of the USB from urban encroachment.
- AG-2. The County shall not accept applications for General Plan amendments outside the Urban Services Boundary (USB) redesignating prime, statewide importance, unique and local importance farmlands or lands with intensive agricultural investments to agricultural/residential or urban use (i.e., residential, commercial, industrial) unless the applicant demonstrates that the request is consistent with the General Plan Agriculture-Residential expansion policies (please refer to Land Use Element Policies regarding Agriculture-Residential uses).
- AG-3. The County shall permit agricultural uses on buffers, provided such uses are conducted in a manner compatible with urban uses. Buffers shall be used to separate farming practices incompatible with adjacent urban uses. Any homeowners' association or similar entity within the development shall assist in determining compatible use. Buffers shall not adversely conflict with agricultural uses on adjoining property.
- AG-4. Prospective buyers of property adjacent to agricultural land shall be notified through the title report that they could be subject to inconvenience or discomfort resulting from accepted farming activities as per provisions of the County's right-to-farm ordinance.
- AG-5. Projects resulting in the conversion of more than fifty (50) acres of farmland shall be mitigated within Sacramento County, except as specified in the paragraph

below, based on a 1:1 ratio, for the loss of the following farmland categories through the specific planning process or individual project entitlement requests to provide in-kind or similar resource value protection (such as easements for agricultural purposes):

- prime, statewide importance, unique, local importance, and grazing farmlands located outside the USB;
- prime, statewide importance, unique, and local importance farmlands located inside the USB.

The Board of Supervisors retains the authority to override impacts to Unique, Local, and Grazing farmlands, but not with respect to Prime and Statewide farmlands. However, if that land is also required to provide mitigation pursuant to a Sacramento County endorsed or approved Habitat Conservation Plan (HCP), then the Board of Supervisors may consider the mitigation land provided in accordance with the HCP as meeting the requirements of this section including land outside of Sacramento County.

Note: This policy is not tied to any maps contained in the Agricultural Element. Instead, the most current Important Farmland map from the Department of Conservation should be used to calculate mitigation.

AG-6. If a property owner is required to mitigate for the loss of farmland under Policy AG-5, and the approved master plan or community plan includes land permanently set aside for an urban farm, a 1:1 farmland credit will be given to projects that incorporate urban farming within the project that permanently preserves farmland. Urban farms may qualify for credit for the proposed master plan or community plan and will be considered as part of the master plan or community plan process subject to the following criteria:

- The required minimum urban farm size to qualify for the credit shall be at least 5 acres.
- Only land that is fully available for farming shall count towards the credit. Ancillary facilities such as education buildings, farmer's markets, and parking areas shall not be included in the acreage calculation.
- Community gardens shall not count toward the credit.
- The zoning shall be a permanent agricultural zone, or similar zone, that ensures the permanency of the agricultural use.
- An appropriate source of water shall be identified and provided.

- A permanent agricultural easement shall be recorded over the site. The agricultural easement shall be dedicated to the County of Sacramento or an organization approved by the County to preserve the farmland.
- If there is a separate farm management entity, a recorded farming management agreement shall be required between the landowner and the farm manager.

Any reversion to a non-farming use on an urban farm site that received farmland credit shall trigger farmland mitigation regardless of the size. The mitigation shall be equivalent to the mitigation required at the time of the original project approval. In addition, the mitigation shall be based on the farmland category at the time of original project approval; however, in the event the farmland category has been upgraded to a higher category as shown on the latest Important Farmland Map from the Department of Conservation, that farmland category shall be used as the basis in determining equivalent mitigation.

AG-9. 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.

CO-51. Direct development away from prime or statewide importance farmlands or otherwise provide for mitigation as required by AG-5 slowing the loss of additional farmland conversion to other uses.

CO-52. Recreational uses shall not be constructed on prime, statewide importance, unique or local farmland outside of the Urban Services Boundary where the use would impede agricultural practices.

SACRAMENTO COUNTY ZONING CODE

The Agricultural Land Use Zone is designed to promote and protect the public health, safety, and general welfare within Sacramento County. As stated in the General Plan:

Farmland is the fundamental agricultural resource. Urban development, wildlife preserves, and outdoor recreation facilities are encroaching upon farmlands. With rare exceptions, conversions of farmland to nonfarm uses are irreversible. Farmland conversions affect agricultural productivity directly by reducing the farmland base, and indirectly by increasing production costs or reducing yields on neighboring farmlands. Farmland losses reduce the ability of the county to supply food to local and export markets. The cumulative effects of individual farmland conversions include urban growth inducement, unstable rural real estate markets, world competition for existing markets, low commodity prices, and reduced viability of the local agricultural economy.

The converse relationship is also true: lack of viable agricultural productivity tends to lead to conversions of land to other, often conflicting uses. The real or perceived lack of viability may be caused by many factors including: growth pressures, unstable or reduced real estate values, cost of water or energy, government regulation, low commodity prices, and world competition for existing markets.

In general the agricultural land use zone is designed to:

- Eliminate encroachment of incompatible land uses on agricultural lands;
- Preserve the supply of agricultural land in order to conserve the County's economic resources;
- Discourage premature and unnecessary conversion of agricultural land to urban uses;
- Preserve agricultural lands as open space and for production of agricultural products so as to preserve an important physical, social, esthetic and economic asset of the residents of the County ; and
- Encourage retention of large agricultural lots to assure viable agricultural units.

SIGNIFICANCE CRITERIA

The CEQA Guidelines define “significant” as “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the Project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. Based on the CEQA Guidelines, an impact to agricultural resources is significant if the Project results in any of the following:

1. Substantial conflict with existing zoning for agricultural use, or a Williamson Act contract.
2. Conversion of a substantial amount of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use.
3. Substantial conflict with existing, adjacent agricultural uses.

In addition to the CEQA Guidelines criteria for significance of farmland loss, General Plan Policy AG-5 defines a substantial farmland loss as 50 acres. The CEQA Guidelines indicate that that Prime, Statewide Importance, and Unique Farmland loss may be a significant impact, but the General Plan further includes Farmland of Local Importance and Grazing Land – though in the case of Grazing Land, the threshold specifically applies only to such lands which occur outside of the Urban Services Boundary.

METHODOLOGY

An evaluation of potential impacts associated with agricultural resources was based on a review of planning documents, including policies of the Sacramento County General Plan, and field reviews. The Project was analyzed in terms of its consistency with Sacramento County General Plan policies and other state regulations as presented above.

IMPACTS AND ANALYSIS

IMPACT: CONFLICT WITH EXISTING AGRICULTURAL USE AND ZONING

The Project site is currently designated as Agricultural 80 (AG-80) by the Sacramento County Zoning Code. The Project requests a Zoning Ordinance Amendment to adopt the Cordova Hills Special Planning Area (SPA). Upon adoption of the SPA 223.5 acres will be allotted for the University/College Campus Center, 493.2 acres will be designated Avoided Area, 194 acres will be designated Agriculture, 249.7 acres will be designated for recreation uses, and the remaining 1,508.1 acres will be designated for a variety of urban developments (roads, commercial uses, residential areas, and public/quasi-public).

The Sacramento County General Plan land use designation for the site is General Agriculture. The Project requests a General Plan Amendment to change the Land Use Designation from General Agriculture to Low Density Residential, Medium Density Residential, Commercial and Office, Recreation, Natural Preserve, and Public/Quasi Public for approximately 2,366.3 acres.

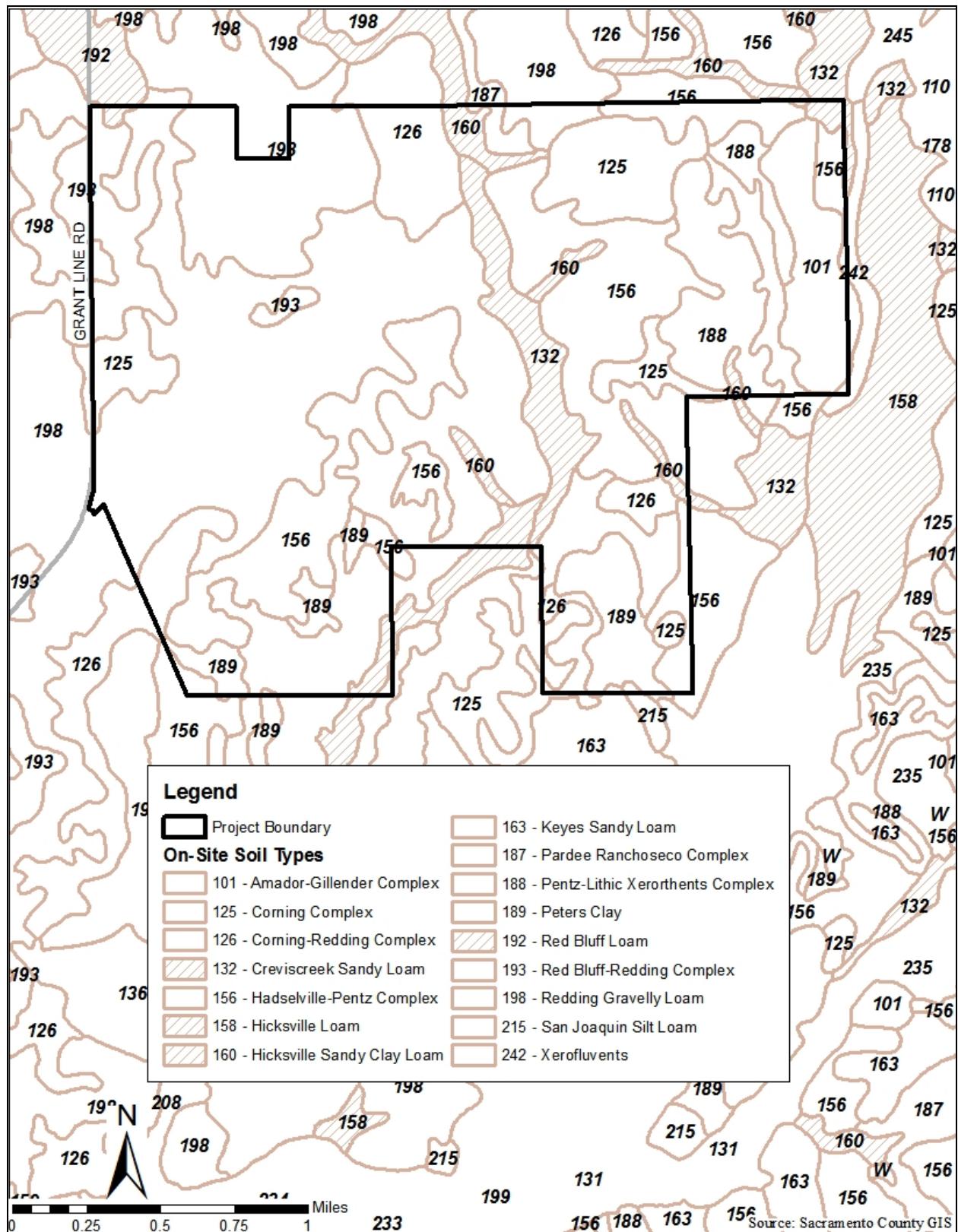
Policies AG-1 and AG-2 protect farmlands outside of the USB from urban encroachment (farmlands are defined as Prime, Statewide Importance, Unique, and Local Importance farmlands). Further, one of the objectives presented in the Agricultural Element of the General Plan is: "Protect prime, statewide importance, unique, and local importance farmlands and lands with intensive agricultural investments (such as orchards, vineyards, dairies, and other concentrated livestock or poultry operations) from urban encroachment."

According to the Sacramento County Important Farmland Map published by the California Department of Conservation, the Project site contains a small patch of Unique Farmland that straddles the USB in the southwestern portion of the site (see Plate AR-3 above), and is otherwise designated as Grazing Land. The patch of Unique Farmland is so designated because of a small eucalyptus grove that was planted many years ago as a crop for firewood. The trees were removed several years ago by the property owner and the grove no longer exists. For this reason, this area may be redesignated to another farmland classification by the Department of Conservation during the next farmland mapping update.

According to the Department of Conservation "Soil Survey of Sacramento County, California", there are sixteen different soil types within the Project boundaries (Plate AR-5). While the Important Farmland Map reflects the actual use of the land, the soil survey reflects the capability of the underlying soils. Four of the soils on the site are listed as prime soils, if irrigated; these are identification numbers 132, 158, 160, and 192, and are hatchmarked on Plate AR-5. The Storie Index ratings for these soils are 66, 61, 46, and 51. The Storie Index expresses the relative suitability of soil for general intensive agricultural or rangeland uses on a scale of zero to 100, with 100 being best.

The land use capability class of soil 132 is IIIs, the class of soils 158 and 160 are is IIIw, and the class of soil 192 is IIle. The land use capability classes are listed Roman numerals I thru VIII, with the first four representing land suitable for crops and the last four representing land suitable for pasture or rangeland uses. The limitations on use increase as the Roman numeral increases. The letter "e" indicates that the soils are subject to erosion, the letter "s" indicates that soils are shallow and/or rocky, and the letter "w" indicates excess wetness.

Plate AR-5: On-Site Soil Types



The four soil classes described are only prime if they are irrigated. Though there are wells on the site to provide water for cattle, the site has not been irrigated. The topography of the site is highly varied (there are slopes of 30% – 50%), which would make installation of an irrigation system expensive and difficult to operate. Moreover, as shown on the exhibit, the area of prime soils is small relative to the site as a whole; approximately 170 acres out of 2,669, or 6%. The largest area is a mix of soil type 132 and 160, and follows the main north-south ephemeral drainage that passes through the site (located within a proposed preserve on the Project land plan).

Much of the site is currently being used for cattle grazing. The applicant has indicated that the site currently supports one head of cattle for every 15 acres. Grazing cattle is not considered an intensive agricultural investment because the cattle are not densely concentrated and they require minimal infrastructure.

Policy AG-2 defines “urban” uses as residential, commercial, or industrial. The portion of the Unique Farmland area outside of the USB will be designated as Avoided Area and Agriculture by the Project. The SPA definition of Agriculture does include some more developed uses, such as a corporation yard and solar farms, but these uses are conditionally allowable within the County agricultural zoning as well. Thus, the Project is consistent with current policy AG-1 and AG-2, because the Unique Farmland outside of the USB will not be designated for urban uses.

There are no agricultural uses taking place on any of the lands adjacent to the Project site that would be incompatible with the proposed Project. Agricultural uses and residential uses typically come into conflict due to dust generation from tilling, the application of pesticides and fertilizers, and noise from equipment. The nearest row-cropped farmland that would generate these conflicts is over ½-mile to the southeast of the site, in an area of the Deer Creek floodplain. Cattle grazing usually involves a lesser degree of conflict, because the intensity of the activity is reduced when compared to row crops, but may nonetheless result in complaints related to noise, dust, or odors generated by cattle at times when the herd moves closer to residences. Though the Project will not result in significant conflicts between an agricultural and non-agricultural use, buyers of properties adjacent to the northern property boundary should receive notice through the title report that they could be subject to inconvenience or discomfort resulting from accepted farming activities as per provisions of the County Right-To-Farm Ordinance; this notification would be consistent with General Plan Policy AG-4.

The proposed uses are permitted with approval of the Zoning Ordinance Amendment to adopt the Cordova Hills SPA, will not convert Unique farmland outside of the USB to urban uses, and the land does not support intensive agricultural investment. Though there are soils that are considered prime when irrigated, the site is not irrigated. The Project will not result in substantial conflicts with existing agricultural use of adjacent lands, though mitigation requiring deed notices is recommended. For the foregoing reasons, impacts are *less than significant*.

MITIGATION MEASURES:

AG-1. The applicant shall disclose to all All prospective buyers of properties within 500 feet of the northern property boundary ~~shall receive a recorded notice that would appear in the Title report that they could be subject to inconvenience or discomfort resulting from accepted farming practices as per provisions of the County Right-To-Farm Ordinance~~ **and shall include a Note on all final maps disclosing the Right-To-Farm Ordinance.**

IMPACT: CONFLICT WITH WILLIAMSON ACT CONTRACT

There is one existing Williamson Act Contract (72-AP-109) within the Project limits (see Plate AR-4 above). The contract was initiated on February 23, 1972 and encompasses approximately 480 acres on APN 073-0040-024. The landowner initiated the non-renewal process for this contract in February 2007. Under the nonrenewal process the contract will expire in the year 2016, and the land will no longer be subject to Williamson Act contract restrictions.

The Project proposal includes a large-lot subdivision map which would create parcels that range from less than an acre in size to approximately 35 acres. Pursuant to the Subdivision Map Act, subdivision maps involving parcels less than 40 acres in size cannot be approved on contracted lands except in two cases: the contract is three years from nonrenewal or if findings are made. As to the former, the on-site contract will expire in 2016, which would allow approval of subdivision maps within the contracted area beginning in 2013. In the case of findings, Section 66474.4 of the Subdivision Map Act states that the Board of Supervisors must find either that:

- (1) The parcels can nevertheless sustain an agricultural use permitted under the contract, or are subject to a written agreement for joint management pursuant to Section 51230.1, provided that the parcels which are jointly managed total at least 10 acres in size in the case of prime agricultural land or 40 acres in size in the case of land which is not prime agricultural land.
- (2) One of the parcels contains a residence and is subject to Section 428 of the Revenue and Taxation Code; the residence has existed on the property for at least five years; the landowner has owned the parcels for at least 10 years; and the remaining parcels shown on the map are at least 10 acres in size if the land is prime agricultural land, or at least 40 acres in size if the land is not prime agricultural land.

The Project proposal includes changing the General Plan land use designation of the contracted land from General Agriculture to non-agricultural uses (Low Density Residential, Medium Density Residential, Commercial and Offices, Recreation, and Natural Preserve). The Project also includes a rezone from AG-80 to SPA. This rezone is also required in order to subdivide the property as proposed. While the Williamson Act states that a contract cannot be initiated unless the land is located within an area designated as an "agricultural preserve", it does not address whether the zoning or other land use designations of contracted land can be amended during the contract life. Though not addressed by the Williamson Act, the text of contract 72-AP-109 states "It

is the intent of this Board that all land within this Preserve be zoned to the AG-80 Exclusive Agricultural Zone.” On this basis, it would appear that rezoning the land prior to 2016 would conflict with the Williamson Act contract. The applicant has proposed that the Board of Supervisors approve the rezone, but stipulate that the zoning agreement will not become effective until 2016.

Though the zoning agreement would be in abeyance until 2016, the approval of this agreement could result in the discontinuation of grazing activities during the interim period. To prevent this circumstance, mitigation has been included which requires that grazing be continued on the contracted land until the contract expires.

The Agricultural Commissioner’s office was contacted for comment. The Agricultural Commissioner (F. Carl) provided the following comment:

“The proposed site is not prime agricultural land and has been used for grazing. Proposed development on less than prime agriculture land that is contiguous with existing urban development is preferred over other possible alternatives. To my knowledge there are no intensive agricultural uses adjacent to the project that will be significantly impacted. Cancellation of the contracts is preferred since the properties are clearly being planned for development; therefore the tax benefit of an agricultural conservation easement should not be continued.”

Though the Agricultural Commissioner has indicated a preference for contract cancellation, this is not required in order to be consistent with the Williamson Act. According to the Department of Conservation:

“A Williamson Act contract is an enforceable restriction pursuant to Article 13, section 8 of the California Constitution and §51252. Williamson Act contracts are not intended to be cancelled and in fact, cancellation is reserved for unusual, "emergency" situations. Therefore, the nine-year nonrenewal process has been identified as the legally preferred method for terminating a Williamson Act contract.”

If the Board of Supervisors makes appropriate findings pertinent to the subdivision proposal and defers the effective date of the rezone until contract expiration, and grazing is continued until contract expiration, the Project will not result in significant conflicts with the Williamson Act. Following the outlined procedures is consistent with the Williamson Act provisions; impacts are *less than significant*.

MITIGATION MEASURES:

AG-2. The applicant shall enter into an agreement with an agricultural operator to maintain grazing use, or other more intensive use, on the land which is subject to Williamson Act contract 72-AP-109. Agricultural use shall be maintained until Williamson Act contract expiration. Documentation of this agreement shall be

submitted to the Environmental Coordinator prior to approval of the zoning agreement for the Williamson Act contracted property.

IMPACT: CONVERT PROTECTED FARMLAND TO NON-AGRICULTURAL USES

According to the Sacramento County Important Farmland Map published by the California Department of Conservation, the Project site is mostly Grazing Land with a small patch of Unique Farmland in the southwest quadrant of the site (see Plate AR-2 and Plate AR-3 above). Based on Policy AG-5, the Project will result in impacts to the farmland located outside of the USB in the southwestern corner of the site (which is Grazing Land and Unique Farmland), and to the remaining portion of the Unique Farmland which is within the USB. The area outside of the USB is 251 acres, approximately 247 acres of which is Grazing Land, and the remainder of which is Unique Farmland. The total size of the Unique Farmland, both inside and outside of the USB, is 8.6 acres, which brings the total mitigation requirement to 255.6 acres. Aerial and field investigations revealed that the Unique Farmland area historically consisted of a eucalyptus grove, though it is no longer present and the land may be reclassified as a different farmland category during the next mapping cycle. With mitigation, impacts related to the conversion of farmland are *less than significant*.

MITIGATION MEASURE:

- AG-3.** Prior to the approval of improvement plans, building permits, or recordation of the final map, whichever occurs first, the applicant shall offset the loss of 8.6 acres of Unique Farmland and 247 acres of Grazing Land through 1:1 preservation of farmland within a permanent conservation easement. Preservation land must be in-kind or of similar resource value.

5 AIR QUALITY

INTRODUCTION

This section assesses the potential air quality effects caused by stationary, mobile, and area sources related to construction and operation of the Project. This section also describes the climate in the Project area; existing air quality conditions in the Project area for criteria air pollutants and toxic air contaminants; odors; and applicable federal, state, and regional air quality standards.

SETTING

LOCATION, CLIMATE AND ATMOSPHERIC CONDITIONS

The Cordova Hills Project site consists of approximately 2,669 acres located immediately east of Grant Line Road and south of Glory Lane in the southeastern portion of Sacramento County, at the southern end of the Sacramento Valley Air Basin. The Sacramento Valley Air Basin is bound by the North Coast Ranges to the west and the Sierra Nevada Mountains to the east. Hot, dry summers and mild, rainy winters characterize the Mediterranean climate of the Sacramento Valley. Throughout the year, the temperature may range from a low of 20 degrees Fahrenheit to a high of 110 degrees, with summer highs usually in the 90s and winter lows occasionally below freezing. Average annual rainfall is about 20 inches, with very rare snowfall. The prevailing winds are moderate in strength and vary from moist breezes from the south to dry land flows from the north. Winds within the Project area are predominantly from the south.

The mountains surrounding the Sacramento Valley create a barrier to airflow, which can trap air pollutants in the valley when meteorological conditions are right and a temperature inversion exists. The situation of having warm air on top of cooler air is referred to as a temperature inversion, because the temperature profile of the atmosphere is "inverted" from its usual state.¹ The highest frequency of air stagnation occurs in the autumn and early winter, when large high-pressure cells lie over the valley. The lack of surface wind during these periods and the reduced vertical flow caused by less surface heating reduces the influx of outside air and allows air pollutants to become concentrated in the air. The surface concentrations of pollutants are highest

¹ National Oceanic and Atmospheric Administration
<http://www.wrh.noaa.gov/slc/climate/TemperatureInversions.php>. Accessed November 8, 2010

when these conditions are combined with smoke from agricultural burning or when temperature inversions trap cool air, fog, and pollutants near the ground.

The ozone (O₃) season (May through October) in the Sacramento Valley is characterized by stagnant air or light winds, with the delta sea breeze arriving in the afternoon out of the southwest. Usually, the evening breeze transports the airborne pollutants to the north, out of the Valley. During about half of the days from July to September, however, a phenomenon called the “Schultz Eddy” prevents this from occurring. Instead of allowing for the prevailing wind patterns to move north, carrying the pollutants out of the Valley, the Schultz Eddy causes the wind pattern to circle back south. This phenomenon’s effect exacerbates the pollution levels in the area and increases the likelihood of violating federal or state standards.² The Schultz Eddy normally dissipates around noon, when the delta sea breeze arrives.

AIR POLLUTANTS AND AMBIENT AIR QUALITY STANDARDS

The Clean Air Act, which was last amended in 1990, requires the Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. The Clean Air Act established two types of national air quality standards: primary and secondary standards. Primary standards set limits to protect public health, including the health of “sensitive” populations, such as asthmatics, children, and the elderly. Typically, primary pollutants are substances directly emitted from a process, such as ash from a volcanic eruption or carbon monoxide gas emitted from a motor vehicle exhaust. Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings. Secondary pollutants are not emitted directly; they form in the air when primary pollutants react or interact to create substances, such as ground-level ozone, which is a component of photochemical smog.

The EPA Office of Air Quality Planning and Standards (OAQPS) has set NAAQS for six principal pollutants, which are called “criteria” pollutants. Criteria air pollutants are a group of pollutants for which federal or state regulatory agencies have adopted ambient air quality standards. Federal criteria pollutants include ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, particulate matter less than 10 and 2.5 microns in diameter, and lead. State-designated criteria pollutants also include visibility-reducing particles, sulfates, and hydrogen sulfide.³ Criteria air pollutants are classified in each air basin, county, or, in some cases, within a specific urbanized area. The classification is determined by comparing actual monitoring data with state and federal standards. If a pollutant concentration is lower than the standard, the area is classified as in “attainment” for that pollutant. If an area exceeds the standard, the area is classified as in “non-attainment” for that pollutant. If there are not enough data available to

² SMAQMD Air Guide to Air quality assessment in Sacramento County, December 2009.
<http://www.airquality.org/ceqa/cequguideupdate/Ch1IntroAQFINAL.pdf>. Accessed November 8, 2010

³EPA; <http://www.epa.gov/air/criteria.html>. Accessed November 9, 2010

determine whether the standard is exceeded in an area, the area is designated “unclassified.” Sacramento County is designated as nonattainment areas for national and state ambient air quality standards (AAQS) for ozone, PM₁₀ and PM_{2.5}. The County was designated in attainment or unclassified for all remaining pollutants.⁴ The main criteria pollutants are described below.

Ozone (O₃) is not usually emitted directly into the air, but is created at ground level by a chemical reaction between oxides of nitrogen (NO_x) and volatile organic compounds (VOC) in the presence of sunlight. **The United States Environmental Protection Agency formerly called VOC reactive organic gases, or ROG – the latter term is still in use in most modeling programs and by the Sacramento Metropolitan Air Quality Management District. The term ROG is used throughout this document.** Ozone has the same chemical structure whether it occurs miles above the earth or at ground level. In the earth's lower atmosphere, ground-level ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. Motor vehicle exhaust and industrial emissions, gasoline vapors, and chemical solvents, as well as natural sources, emit NO_x and VOC **ROG** that help form ozone. Ground-level ozone is the primary constituent of smog. Sunlight and hot weather cause a chemical reaction between ozone precursors and increase the levels of ozone to potentially harmful concentrations. As a result, it is known as a summertime air pollutant. Many urban areas tend to have high levels of ground-level ozone, but even rural areas are subject to increased ozone levels because wind carries ozone and the pollutants that form it hundreds of miles away from their original sources.

Carbon Monoxide (CO) is a colorless, odorless gas that is formed when carbon in fuel is not burned completely. It is a component of motor vehicle exhaust, which contributes about 56 percent of all CO emissions nationwide. 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. The highest levels of CO in the outside air typically occur during the colder months of the year when inversion conditions are more frequent. The air pollution becomes trapped near the ground beneath a layer of warm air.

Particulate Matter (PM₁₀ and PM_{2.5}) is a complex mixture of extremely small particles and liquid droplets. Particle pollution is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to their potential for causing health problems. EPA is concerned about particles that are 10 micrometers in diameter or smaller because those are the particles that generally pass through the throat and nose and enter the lungs. EPA groups particle pollution into two categories:

⁴ Sacramento Metropolitan Air Quality Management District.
<http://www.airquality.org/aqdata/attainmentstat.shtml> Accessed: June 27, 2011.

"Inhalable coarse particles," such as those found near roadways and dusty industries, are larger than 2.5 micrometers and smaller than 10 micrometers in diameter.

"Fine particles," such as those found in smoke and haze, are 2.5 micrometers in diameter and smaller. These particles can be directly emitted from sources such as forest fires, or they can form when gases emitted from power plants, industries, and automobiles react in the air.

Nitrogen Dioxide (NO₂) is one in a group of highly reactive gasses known as nitrogen oxides (NO_x). Other nitrogen oxides include nitrous acid and nitric acid. While EPA's NAAQS covers this entire group of NO_x, NO₂ is the component of greatest interest and the indicator for the larger group of nitrogen oxides. NO₂ forms quickly from emissions from cars, trucks and buses, power plants, and off-road equipment. In addition to contributing to the formation of ground-level ozone and fine-particle pollution, NO₂ is linked to a number of adverse effects on the respiratory system.

Sulfur Dioxide (SO₂) is one of a group of highly reactive gasses known as oxides of sulfur. The largest sources of SO₂ emissions are from fossil fuel combustion at power plants (73%) and other industrial facilities (20%). Smaller sources of SO₂ emissions include industrial processes such as extracting metal from ore, and the burning of high sulfur-containing fuels by locomotives, large ships, and non-road equipment.

Lead (Pb) is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been motor vehicles (such as cars and trucks) and industrial sources. As a result of EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector declined by 95 percent between 1980 and 1999, and levels of lead in the air decreased by 94 percent during the same time period. Today, the highest levels of lead in air are usually found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers.⁵

Exposure to these pollutants is associated with numerous effects on human health, including increased respiratory symptoms, hospitalization for heart or lung diseases, and even premature death. Health effects of the main criteria pollutants are shown below in Table AQ-1.

⁵ <http://www.epa.gov/airquality/urbanair/>. Accessed November 9, 2010

Table AQ-1: Health Effects of Main Criteria Pollutants

Pollutant	Adverse Effects
Ozone	<ul style="list-style-type: none"> ▪ Ozone can irritate lung airways and cause inflammation. Other symptoms include wheezing, coughing, and breathing difficulties during exercise or outdoor activities. People with respiratory problems are most vulnerable, but even healthy people that are active outdoors can be affected when ozone levels are high. ▪ Repeated exposure to ozone pollution for several months may cause permanent lung damage. ▪ Even at very low levels, ground-level ozone triggers a variety of health problems including aggravated asthma, reduced lung capacity, and increased susceptibility to respiratory illnesses like pneumonia and bronchitis. ▪ Ground-level ozone interferes with the ability of plants to produce and store food, which makes them more susceptible to disease, insects, other pollutants, and harsh weather. ▪ Ozone reduces crop and forest yields and increases plant vulnerability to disease, pests, and weather.
Carbon Monoxide	<ul style="list-style-type: none"> ▪ The health threat from lower levels of CO is most serious for those who suffer from heart disease. For a person with heart disease, a single exposure to CO at low levels may cause chest pain and reduce that person's ability to exercise; repeated exposures may contribute to other cardiovascular effects. ▪ Healthy people can be affected by high levels of CO as well. People who breathe high levels of CO can develop vision problems, reduced ability to work or learn, reduced manual dexterity, and difficulty performing complex tasks. At extremely high levels, CO is poisonous and can cause death. ▪ CO contributes to the formation of ground-level ozone, which can trigger serious respiratory problems.
Particulate Matter	<ul style="list-style-type: none"> ▪ Particle pollution, especially fine particles, contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. Numerous scientific studies have linked particle pollution exposure to a variety of problems, including: increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; decreased lung function, aggravated asthma, development of chronic bronchitis; irregular heartbeat, nonfatal heart attacks; and premature death. ▪ Particles can be carried over long distances by wind and then settle on ground or water. The effects of this settling include: making lakes and streams acidic; changing the nutrient balance in coastal waters and large river basins; depleting the nutrients in soil; damaging sensitive forests and farm crops; and affecting the diversity of ecosystems.
Nitrogen Dioxide	<ul style="list-style-type: none"> ▪ One of the main ingredients involved in the formation of ground-level ozone, which can trigger serious respiratory problems. ▪ Reacts to form nitrate particles, acid aerosols, as well as NO₂, which also cause respiratory problems. ▪ Contributes to formation of acid rain; to nutrient overload that deteriorates water quality; and to atmospheric particles that cause visibility impairment. ▪ Reacts to form toxic chemicals.
Sulfur Dioxide	<ul style="list-style-type: none"> ▪ SO₂ causes a wide variety of health and environmental impacts because of the way it reacts with other substances in the air. ▪ Peak levels of gaseous SO₂ can cause temporary breathing difficulty for people with asthma who are active outdoors. Longer-term exposures to high levels of SO₂ gas and particles cause respiratory illness and aggravate existing heart disease. ▪ SO₂ reacts with other chemicals in the air to form tiny sulfate particles. When these are breathed, they gather in the lungs and are associated with increased respiratory symptoms and disease, difficulty in breathing, and premature death.
Lead	<ul style="list-style-type: none"> ▪ People, animals, and fish are mainly exposed to lead by breathing and ingesting it in food, water, soil, or dust. Lead accumulates in the blood, bones, muscles, and fat. Infants and young children are especially sensitive to even low levels of lead.

Pollutant	Adverse Effects
	<ul style="list-style-type: none"> ▪ Excessive exposure to lead causes seizures, mental retardation, behavioral disorders, memory problems, and mood changes. Low levels of lead damage the brain and nerves in fetuses and young children, resulting in learning deficits and lowered IQ. ▪ Lead exposure causes high blood pressure and increases heart disease, especially in men. Lead exposure may also lead to anemia.
Source: U.S. Environmental Protection Agency, Six Common Air Pollutants, www.epa.gov/air/urbanair/6poll.html , accessed November 12, 2010.	

Toxic Air Contaminants (TACs) are airborne pollutants that may be expected to result in an increase in mortality or serious illness or which may pose a present or potential hazard to human health. TACs are also referred to as toxic air pollutants or hazardous air pollutants. A wide range of sources, from industrial plants, gasoline stations, dry cleaners, automobiles (diesel exhaust), to households emits TACs. Because it is not practical to eliminate all TACs, these compounds are regulated through risk management programs. These programs are designed to eliminate, avoid, or minimize the risk of adverse health effects from exposures to TACs. TACs are known to be highly hazardous to health, even in small quantities.⁶

Both the federal and state governments have established ambient air quality standards for outdoor concentrations of various pollutants in order to protect public health. The federal and state ambient air quality standards have been set at levels where concentrations could be generally harmful to human health and welfare and to protect the most sensitive persons from experiencing health impacts with a margin of safety. Table AQ-2 identifies the federal and state ambient air quality standards that are applicable in California.

⁶ <http://www.airquality.org/ceqa/cequguideupdate/Ch5TACFinal.pdf>. Accessed 11/11/10

Table AQ-2: State and Federal Ambient Air Quality Standards

Pollutant	Symbol	Average Time	Standard, as parts per million		Standard, as micrograms per cubic meter		Violation Criteria	
			California	National	California	National	California	National
Ozone	O ₃	1 hour	0.09		180	--	If exceeded	If exceeded more than 3 days in 3 years
		8 hours	0.070	0.075	137	147	If exceeded	If exceeded more than 3 days in 3 years
Carbon monoxide	CO	8 hours	9.0	9	10,000	10,000	If exceeded	If exceeded more than 1 day per year
		1 hour	20	35	23,000	40,000	If exceeded	If exceeded more than 1 day per year
Nitrogen dioxide	NO ₂	Annual arithmetic mean	0.030	0.053	57	100	If exceeded	If exceeded
		1 hour	0.18	0.1	339	188	If exceeded	
Sulfur dioxide	SO ₂	24 hours	0.04		105		If exceeded	If exceeded more than 1 day per year
		1 hour	0.25	0.075	655	196	If exceeded	N/A
Hydrogen sulfide	H ₂ S	1 hour	0.03	--	42	--	If ≥	N/A
Vinyl chloride	C ₂ H ₃ Cl	24 hours	0.01	--	26	--	If ≥	N/A
Inhalable particulate matter	PM ₁₀	Annual arithmetic mean	--	--	20	--	If exceeded	N/A
		24 hours	--	--	50	150	If exceeded	If exceeded more than 1 day per year
Fine particulate matter	PM _{2.5}	Annual arithmetic mean	--	--	12	15	See National	If exceeded over 3-year average
		24 hours	--	--	--	35	See National	If exceeded over 3-year average
Sulfate particles	SO ₄	24 hours	--	--	25	--	If ≥	N/A
Lead particles	Pb	Quarterly average	--	--	--	1.5	N/A	If exceeded more than 1 day per year
		Rolling 3-month average	--	--	--	0.15	If ≥	N/A
		30-day average	--	--	1.5	--	If ≥	

Source: ARB 2011 <http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>. Accessed January 2011. NOTES: 1) All standards are based on measurements at 25 C and 1 atmosphere pressure. 2) National standards shown are the primary (health effects) standards. 3) N/A = not applicable.

EXISTING AIR QUALITY CONDITIONS

The California Air Resources Board (ARB) collects ambient air quality data through a network of air monitoring stations throughout the state. Many of the monitoring stations are part of the state and local air monitoring plans, which collect data on ambient levels of gaseous and particular air pollutants used to determine attainment status.

EMISSION SOURCES

Stationary sources of air pollution near the Project site include A. Teichert & Son Aggregate, Aerojet, Puente Wood Products, Sacramento Rendering Company, Teledyne MEC, Granite Construction, and concrete recycling. There are also hard-rock quarries to the north and east of the site which have either been approved (Teichert Quarry) or are proposed and have a published Draft Environmental Impact Report (Stoneridge Quarry). Mobile sources of air pollution include cars, trucks, buses, motorcycles, off-road equipment, construction activities, and consumer products, as well as gas-powered lawn tools and mowers, farm and construction equipment, recreational vehicles, planes, and trains. Sources of toxic air contaminants include manufacturing facilities, the Kiefer Landfill, and emissions from auto body shops, auto machine shops, dry cleaners, and gas stations. Indirect sources of air pollution, including diesel exhaust, are predominantly from vehicle trips along major thoroughfares in the vicinity of the Project area. There are some existing agriculture uses in the vicinity of the Project site and Mather Airport is located approximately 4.4 miles to the west.

Some individuals are considered to be more sensitive than others to air pollution. Reasons for greater sensitivity can include existing health problems, duration of exposure to air pollutants, or certain peoples' increased susceptibility to pollution-related health problems due to factors such as age.

The ARB issued a guidance document on air quality and land use called *Air Quality and Land Use Handbook: A Community Health Perspective*, which recommends that sensitive land uses not be located within 500 feet of a freeway or other high traffic roadway and that a site-specific health risk assessment be performed as a way to more accurately evaluate the risk for sensitive uses planned within 500 feet of such roads.⁷

MONITORING DATA

The Sacramento Metropolitan Air Quality Management District (SMAQMD) and ARB maintain several air quality monitoring sites in the Sacramento area; however, none are located in Cordova Hills and not all monitoring sites measure all air pollutants. The nearest monitoring site for ozone is at Sloughhouse, and the nearest monitoring site for carbon monoxide, PM_{2.5}, nitrogen dioxide, and sulfur dioxide is at Del Paso Manor at

⁷ <http://www.arb.ca.gov/ch/landuse.htm>. Accessed November 12, 2010

2701 Avalon Dr. in Sacramento. The nearest monitoring site for PM₁₀ is the Sacramento Branch Center Road site, located near Bradshaw Road south of U.S. 50. Based on these monitoring sites, all federal ambient air quality standards have been met in the County, with the exception of ozone, which exceeded the eight-hour average on 24 occasions in 2009. Also, California standards for PM₁₀ and ozone were exceeded in the County in 2007, 2008, and 2009 as shown in Table AQ-3.

Table AQ-3: Exceedance of National and State Air Pollution Standards in the Sacramento Area

Pollutant	2007	2008	2009
OZONE (1-hour)¹			
Highest 1-hour (ppm)	0.097	0.148	0.122
Days>0.09 ppm (State)	2	16	11
OZONE (8-hour)			
Highest 8-hour (ppm)	0.089	0.108	0.099
Days>0.08 (National) ²	10	19	24
Days>0.07 (State) ¹	17	37	34
CARBON MONOXIDE			
Highest 8-hour (ppm)	2.90	2.49	2.77
Days>=9.0 ppm (National and State)	0	0	0
PARTICULATE MATTER (PM₁₀)³			
Highest 24-hour Concentration (ug/m ³)	75	72	48
Days>150 ug/m ³ (National)	0	0	0
Days>50 ug/m ³ (State)	30.2	68.7	12.2
NITROGEN DIOXIDE			
Highest 1-hour (ppm)	0.051	0.058	0.049
Days>.25 ppm (State)	0	0	0
Annual Mean (National) > 0.053 ppm	0	0	0
¹ Data derived from Sloughouse monitoring station. Sloughouse monitoring station only collects data for ozone levels. ² Based on 2008 8-Hour Standard. ³ Data Derived from Branch Center Road Monitoring station. Branch Center Road is the nearest station that collects PM ₁₀ data. Source: California Air Resources Board, http://www.arb.ca.gov/adam , accessed November 11, 2010.			

ADDITIONAL SITE-SPECIFIC AIR QUALITY ISSUES

TOXIC AIR POLLUTANTS

The ARB has identified approximately 200 toxic substances, including those identified by EPA on the California Air Toxic's Program TAC List. Toxic air contaminants are different from the criteria pollutants, in that ambient air quality standards have not been established for toxic air contaminants, largely because there are hundreds of air toxics and their effects on health tend to be local rather than regional. The dose of a TAC to which receptors are exposed is the primary factor used to determine health risk. Duration of exposure, concentration of TAC exposure, and breathing rate in relationship to body size are important factors used in determining health risks. Health effects associated with TACs include cancer, birth defects, neurological damage, genetic damage; or short-term acute effects such as eye watering, respiratory irritation, running nose, throat pain, and headaches. As mentioned above, TACs can be emitted from various common sources such as industrial plants, gasoline stations, dry cleaners, automobiles, and trucks (in the form of diesel exhaust).

ODORS

The issue of odor as a health concern is still a relatively new idea. Merely identifying the hundreds of sources that cause offensive odors poses a big challenge. Odors can potentially affect human health in several ways. First, odorant compounds can irritate the eye, nose, and throat, which can cause respiratory complications. Second, the chemicals that cause odors can stimulate sensory nerves to cause neurochemical changes that might influence health, for instance, by compromising the immune system. Finally, unpleasant odors can trigger memories or attitudes linked to unpleasant odors, causing cognitive and emotional effects such as stress.

SENSITIVE RECEPTORS

Sensitive receptors are populations that are more susceptible to the effects of air pollution than is the population at large. While the ambient air quality standards are designed to protect public health and are generally regarded as conservative for healthy adults, there is greater concern to protect adults who are ill or have long-term respiratory problems and young children whose lungs are not fully developed. According to ARB, sensitive receptors include children less than 14 years of age, the elderly over 65 years of age, athletes, and people with cardiovascular and chronic respiratory diseases.

Land uses such as day care centers, primary and secondary schools, hospitals, and convalescent homes are considered to be sensitive receptors to poor air quality because the very young, the old, and the infirm are more susceptible to respiratory infections and other air quality related health problems than the general public. Residential uses are considered sensitive because people in residential areas are often at home for extended periods of time, so they can be exposed to pollutants for extended

periods. Recreational areas are considered moderately sensitive to poor air quality because vigorous exercise associated with recreation places a high demand on human respiratory function.

REGULATORY SETTING

FEDERAL

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

The EPA is the federal agency responsible for setting and enforcing the federal ambient air quality standards for atmospheric pollutants. The EPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives. The EPA also has jurisdiction over emission sources outside state waters (outer continental shelf), and establishes various emissions standards for vehicles sold in states other than California.

As part of its enforcement responsibilities, the EPA requires each state with non-attainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution in non-attainment areas, using a combination of performance standards and market-based programs.

FEDERAL CLEAN AIR ACT

The Clean Air Act (CAA) of 1970 and the CAA Amendments of 1971 required the EPA to establish NAAQS with states retaining the option to adopt more stringent standards or to include other specific pollutants. These standards are the levels of air quality considered, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those “sensitive receptors” most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Current NAAQS and area attainment status is discussed under Regional and Local Air Quality above. The CAA and its subsequent amendments require each state to prepare a SIP. The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The SIP is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with

jurisdiction over them. The EPA has the responsibility to review all SIPs to determine if they conform to the requirements of the CAA.

STATE

CALIFORNIA AIR RESOURCES BOARD

ARB, a part of the California EPA (CalEPA), is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, the ARB conducts research, sets California Ambient Air Quality Standards (CAAQS), compiles emission inventories, develops suggested control measures, and provides oversight of local programs. The ARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. The ARB has primary responsibility for the development of California's SIP, for which it works closely with the federal government and the local air districts.

In addition to standards set for the six criteria pollutants, the state has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. Further, the state has established a set of episode criteria for ozone, carbon monoxide, sulfur dioxide, nitrogen dioxide, and particulate matter. These criteria refer to episode levels representing periods of short-term exposure to air pollutants that actually threaten public health. The attainment status of the CAAQS for the Project area is discussed under Air Pollutants and Ambient Air Quality Standards, above.

CALIFORNIA CLEAN AIR ACT

The CCAA of 1988 requires non-attainment areas to achieve and maintain the CAAQS by the earliest practicable date and local air districts to develop plans for attaining the state ozone, carbon monoxide, sulfur dioxide, and nitrogen dioxide standards. The CCAA also requires that by the end of 1994 and once every three years thereafter, the air districts are to assess their progress toward attaining the air quality standards. The triennial assessment is to report the extent of air quality improvement and the amounts of emission reductions achieved from control measures for the preceding three-year period.

THE AIR TOXICS HOT SPOTS INFORMATION AND ASSESSMENT ACT

California Health and Safety Code Section 44300 et seq., provides for the regulation of over 200 air toxics and contain the primary air contaminant legislation in the state. Under the Act, local air districts may request that a facility account for its TAC emissions. Local air districts then prioritize facilities on the basis of emissions, and high-priority designated facilities are required to submit a health risk assessment and

communicate the results to the affected public. The TAC control strategy involves reviewing new sources to ensure compliance with required emission controls and limits, maintaining an inventory of existing sources of TACs, and developing new rules and regulations to reduce TAC emissions. The purpose of AB 2588 is to identify and inventory toxic air emissions and to communicate the potential for adverse health effects to the public.

On November 16, 2006, the Air Resources Board adopted amendments to the AB 2588 Air Toxics "Hot Spots" Emission Inventory Criteria and Guidelines Regulation (Title 17, California Code of Regulations, Section 93300.5) that will accommodate stationary diesel engines in the "Hot Spots" Program.

ASSEMBLY BILL 1807

AB 1807, enacted in September 1983, sets forth a procedure for the identification and control of TACs in California. AB 1807 defines a TAC as an air pollutant that may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health. The ARB prepares identification reports on candidate substances under consideration for listing as TACs. The reports and summaries describe the use of and the extent of emissions in California resulting in public exposure, together with their potential health effects.

In 1998, the ARB identified diesel particulate matter (DPM) as a toxic air contaminant under the AB 1807 program. DPM is emitted into the air via heavy-duty diesel trucks, construction equipment, and passenger cars. In October 2000, the ARB released a report entitled Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. This plan identifies DPM as the predominant TAC in California and proposes methods for reducing diesel emissions.

LOCAL

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT.

The SMAQMD was created by state law to enforce local, state, and federal air pollution regulations within the Sacramento Valley Air Basin. The SMAQMD's overall mission is to achieve clean air goals by leading the Sacramento region in protecting public health and the environment through effective programs, community involvement, and public education. The SMAQMD interacts with local, state, and federal government agencies, the business community, environmental groups, and private citizens to achieve these goals. The SMAQMD regulates air pollutant emissions from stationary sources through permit limitations and inspection programs and oversees compliance with state and federal mandates by adopting rules and regulations as necessary.

Because the Sacramento Valley Air Basin is in nonattainment for ozone, PM₁₀, and PM_{2.5}, the SMAQMD requires the implementation of the following Basic Construction Emission Control Practices (BCECPs), regardless of the project's significance determination under CEQA.

- 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, and 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 by either shutting equipment off when not in use or reducing time of idling to 5 minutes. Provide clear signage that posts this requirement for workers at the entrances to the site; and
- 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.

If implementation of BCECPs does not reduce construction emissions to below the regulatory thresholds, the following Enhanced Construction Emission Control Practices (ECECPs) should be included to further reduce project NO_x, PM₁₀, and PM_{2.5} emissions.

- The project shall provide a plan for approval by the District demonstrating that the heavy-duty (50 horsepower 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 a 45% particulate reduction compared to the most recent ARB fleet average. 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 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 percent opacity shall be repaired immediately, and the lead agency and District 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 shall include the quantity and type of vehicles surveyed, as well as the dates of each survey;
- If, at the time of construction, the District has adopted a regulation applicable to construction emissions, compliance with the regulation may completely or

partially replace this regulation. Consultation with the District prior to construction will be necessary to make this determination;

- 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 activities when wind speeds exceed 20 mph;
- Install wind breaks (e.g., plant trees, solid fencing) on windward sides 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;
- Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site;
- Treat site access 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; and
- Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The phone number of the District shall also be visible to ensure compliance.

The SMAQMD issued its *2009 Triennial Report* in December of 2009, which identifies “all feasible measures” the SMAQMD would study or adopt over the ensuing three years to make progress toward attainment of state ozone standards. The measures include additional control programs for mobile and stationary sources, land use and transportation programs, community education programs, and ozone transport mitigation in order to reduce NO_x and ROG emissions in order to achieve the state ozone standard. The SMAQMD anticipates an additional reduction in NO_x and ROG emissions of 1.68 tons per day and 1.32 tons per day, respectively, with the implementation of the *2009 Triennial Report and Plan Revision*. In addition to the Triennial Report, ARB requires the SMAQMD to prepare an annual progress report. The *2007 Annual Progress Report*, the most recent, adopted in October 2008, provides updates for all the proposed SMAQMD control programs, the schedule for adopting control measure commitments, and the evaluation of further study measures.

2030 SACRAMENTO COUNTY GENERAL PLAN

The General Plan includes the following policies that pertain to air quality:

AQ-1. New development shall be designed to promote pedestrian/bicycle access and circulation to encourage community residents to use alternative modes of transportation to conserve air quality and minimize direct and indirect emission of air contaminants.

- AQ-2. Support Regional Transit's efforts to secure adequate funding 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.
- AQ-3. Buffers and/or other appropriate mitigation shall be established on a project-by-project basis and incorporated during review to provide for protection of sensitive receptors from sources of air pollution or odor. The California Air Resources Board's "Air Quality and Land Use Handbook: A Community Health Perspective", and the AQMD's approved Protocol (Protocol for Evaluating the Location of Sensitive Land uses Adjacent to Major Roadways) shall be utilized when establishing these buffers.
- AQ-4. Developments which meet or exceed thresholds of significance for ozone precursor pollutants as adopted by the Sacramento Metropolitan Air Quality Management District (SMAQMD), shall be deemed to have a significant environmental impact. An Air Quality Mitigation Plan shall be submitted to the County of Sacramento prior to project approval, subject to review and recommendation as to technical adequacy by the Sacramento Metropolitan Air Quality Management District.
- AQ-5. Reduce emissions associated with vehicle miles travelled and evaporation by reducing the surface area dedicated to parking facilities; reduce vehicle emissions associated with "hunting" for on-street parking by implementing innovative parking solutions including shared parking, elimination of minimum parking requirements, creation of maximum parking requirements, and utilize performance pricing for publicly owned parking spaces both on- and off-street, as well as creating parking benefit districts.
- AQ-8. Promote mixed-use development and provide for increased development intensity along existing and proposed transit corridors to reduce the length and frequency of vehicle trips.
- AQ-10. Encourage vehicle trip reduction and improved air quality by requiring development projects that exceed the SMAQMD's significance thresholds for operational emissions to provide on-going, cost-effective mechanisms for transportation services that help reduce the demand for existing roadway infrastructure.
- AQ-16. Prohibit the idling of on-and off-road engines when the vehicle is not moving or when the off-road equipment is not performing work for a period of time greater than five minutes in any one-hour period.
- AQ-17. Promote optimal air quality benefits through energy conservation measures in new development.
- AQ-19. Require all feasible reductions in emissions for the operation of construction vehicles and equipment on major land development and roadway construction projects.

- AQ-20. Promote Cool Community strategies to cool the urban heat island, reduce energy use and ozone formation, and maximize air quality benefits by encouraging four main strategies including, but not limited to: plant trees, selective use of vegetation for landscaping, install cool roofing, and install cool pavements.
- AQ-21. Support SMAQMD's particulate matter control measures for residential wood burning and fugitive dust.
- EN-5. Reduce travel distances and reliance on the automobile and facilitate increased use of public transit through appropriate land use plans and regulations.
- CI-40. Whenever possible, the applicant/developer of new and infill development projects shall be conditioned to fund, implement, operate and/or participate in TSM programs to manage travel demand associated with the project.
- CI-41. Consider TSM programs that increase the average occupancy of vehicles and divert automobile commute trips to transit, walking, and bicycling.
- CI-43. The County shall promote transit-supportive programs in new development, including employer-based trip-reduction programs (employer incentives to use transit or non-motorized modes), "guaranteed ride home" for commute trips, and car-share or bike-share programs.
- CI-67. When feasible, incorporate lighter colored (higher albedo) materials and surfaces, such as lighter-colored pavements, and encourage the creation of tree canopy to reduce the built environment's absorption of heat to reduce the urban "heat island" effect.
- HM-12. Continue the effort through the Sacramento Metropolitan Air Quality Management District (AQMD) to inventory and reduce toxic air contaminants as emission standards are developed.
- LU-27. Provide safe, interesting and convenient environments for pedestrians and bicyclists, including inviting and adequately-lit streetscapes, networks of trails, paths and parks and open spaces located near residences, to encourage regular exercise and reduce vehicular emissions.
- LU-37. Provide and support development of pedestrian and bicycle connections between transit stations and nearby residential, commercial, employment or civic uses by eliminating physical barriers and providing linking facilities, such as pedestrian overcrossings, trails, wide sidewalks and safe street crossings.
- LU-39. Support implementation of the ADA Transitional Plan and the Pedestrian Master Plan to create a network of safe, accessible and appealing pedestrian facilities and environments.

- LU-40. Employ appropriate traffic calming measures in areas where pedestrian travel is desirable but made unsafe by a high volume or excessive speed of automobile traffic. Preference shall be given to measures that slow traffic and improve pedestrian safety while creating the least amount of conflict with emergency responders.
- LU-42. Master planning efforts for new growth areas shall provide for separated sidewalks along all arterials and thoroughfares to make walking a safer and more attractive transportation option.
- PF-21. Property buffering the County landfill shall remain in agricultural, recreational or other open space uses and extend at least 2,000 feet in all directions, measured from the landfill's permitted boundary, unless the Department of Waste Management and Recycling determines that the use is compatible with landfill operations and the Board of Supervisors makes the finding that the uses are compatible with the existing or future operations of the landfill.

SIGNIFICANCE CRITERIA

A project may be deemed to have a significant effect on the environment if it will violate any ambient air quality standard, contribute substantially to an existing or projected air quality violation, conflict or obstruct the implementation of applicable air quality plans, or expose sensitive receptors to substantial pollutant concentrations. SMAQMD has adopted significance thresholds for CEQA projects within the District, as published in the SMAQMD's *Guide to Air Quality Assessment in Sacramento County* (SMAQMD Guide). The adopted significance thresholds for criteria pollutants of the greatest concern in the Sacramento area (those for which the region is in non-attainment) include the following:

- Short-term (construction) emissions of NO_x above 85 pounds per day;
- Long-term (operational) emissions of NO_x or ROG above 65 pounds per day;
- PM₁₀ concentrations equal to or greater than five percent of the state ambient air quality standard (i.e., 50 micrograms/cubic meter (µg/m³) for 24 hours) at off-site receptors. The SMAQMD holds that if project emissions of NO_x and ROG are below 65 pounds per day then the project would not threaten violations of the PM₁₀ AAQS;
- CO concentrations that exceed the 1-hour state ambient air quality standard (i.e., 20.0 ppm) or the 8-hour state ambient standard (i.e., 9.0 ppm);
- TAC exposures that create a risk of 10 in 1 million for stationary sources;
- A substantial increase to the risk of exposure to TACs from mobile sources;

The CEQA Guidelines Appendix G indicates that a Project should be analyzed to determine whether objectionable odors would be created which would affect a substantial number of people. Numeric thresholds for odor impacts have not been established by the SMAQMD; however, the air district recommends that several factors be taken into account when determining the significance of a potential odor impact. For the purposes of this report, the following were considered when making a determination as to whether a substantial number of people would be affected by objectionable odors:

- The nature of the odor source is typically considered objectionable and offensive to most individuals;
- The buffer zone, in conjunction with meteorology, is insufficient to mitigate for source odors;
- Area meteorology increases the potential for odor impacts; and/or
- There are a substantial number of odor complaints for an existing odor source.

The SMAQMD states that a project's contribution to impacts would be considered to be cumulatively considerable if:

- There is a net increase of any criteria pollutant for which the project area is in non-attainment under an applicable federal or state ambient air quality standard (including the release of emissions that exceed quantitative thresholds for ozone precursors).

METHODOLOGY

CONSTRUCTION IMPACT METHODOLOGY

DETERMINATION OF CONSTRUCTION NO_x IMPACTS

Emissions of NO_x from construction activities are generated from the operation of heavy equipment. Proposed Project-generated construction emissions of NO_x were calculated through URBEMIS 2007 version 9.2.4 (URBEMIS), using the construction phasing plan provided by MacKay & Soms⁸ and follows the methodologies included in the SMAQMD's Guide to Air Quality Assessment in Sacramento County. For projects that exceed NO_x thresholds with the inclusion of the BCECP, the SMAQMD recommends the implementation of EECs (a full account of these measures is included in Appendix AQ-1); these are considered to be the feasible available measures.

⁸ MacKay & Soms Phasing Plan, November 2010.

DETERMINATION OF CONSTRUCTION PM₁₀ AND PM_{2.5} IMPACTS

The SMAQMD recommends that construction emissions of PM₁₀ be addressed as a localized pollutant. Further, because PM_{2.5} is a subset of PM₁₀, the District assumes that construction projects not exceeding thresholds for PM₁₀ would also not exceed thresholds for PM_{2.5}. Dispersion modeling by the SMAQMD indicates that if projects implement all of the Basic Construction Emission Control Practices (BCECP) and do not exceed 15 acres of active grading at any one time, that particulate matter emissions will be less than significant. Any project which exceeds this amount of grading is assumed to exceed the significance threshold of 50 µg/m³. The Project was evaluated using the above screening criteria and the Project-specific construction phasing provided by MacKay and Soms.

OPERATIONAL IMPACT METHODOLOGY

DETERMINATION OF OPERATIONAL NO_x AND ROG EMISSIONS

Most of the ozone precursor emissions from the Project result from mobile and area sources. Mobile sources include motor vehicle traffic, while area sources include pollutants generated from furnaces, water heaters/boilers, facility maintenance equipment, and consumer products. Project-generated NO_x and ROG emissions were calculated through URBEMIS, with the model estimates adjusted to reflect the trip rates defined by the Project-specific traffic study. Emissions reductions ~~were accomplished~~ **were calculated** through the production of an Air Quality Management Plan⁹ (AQMP), which ~~was is~~ designed to achieve a minimum 35% emissions reduction **at full build-out of the Project** (per guidance from SMAQMD, indicating that this represents the feasible mitigation that should be applied). The AQMP is included as Appendix AQ-2.

DETERMINATION OF OPERATIONAL CO EMISSIONS

Emissions and ambient concentrations of CO have decreased dramatically with the increase in vehicle efficiencies and emission-control feature effectiveness. Although the Basin is designated as an attainment area by both ARB and the EPA, elevated localized concentrations of CO still warrant consideration with respect to environmental analysis. Occurrences of localized “hot spots” are typically associated with heavy traffic congestion occurring at signalized intersections of high-volume roadways. The SMAQMD recommends two methods for analyzing CO concentrations: a screening level analysis and dispersion modeling. The Project was evaluated using the below screening criteria and the traffic and Level of Service (LOS) information from the Project traffic study.

⁹ William Hezmalhalch Architects, Inc., Cordova Hills Operational Air Quality Management Plan, January 24, 2011.

SCREENING CRITERIA FOR CARBON MONOXIDE HOTSPOTS

The SMAQMD screening criteria are divided into two tiers, developed to help lead agencies analyze potential CO impacts when site-specific CO dispersion modeling may not be warranted. This two-tiered approach provides a conservative indication of the potential for project-generated vehicle trips to result in the exceedance of significance thresholds. According to the First Tier of the SMAQMD Screening Criteria, a project would be less than significant for local CO emissions if:

- Traffic generated by the Project would not result in deterioration of intersection LOS to LOS E or F; or
- The project would not contribute additional traffic to an intersection that already operates at LOS E or F.

If the first screening level tier is not met, the Project would be considered less than significant if it meets all of the following:

- 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.

TOXIC AIR CONTAMINANTS

The ARB indicates that one of the highest public health priorities is the reduction of diesel particulate matter (DPM) generated by vehicles on California's highways, as it is one of the primary TACs. Other potential TAC generators within the County of Sacramento are associated with specific types of facilities, such as dry cleaners, gas stations, and chrome plating facilities, and are the focus of ARB's control efforts. ARB has made specific recommendations with respect to considering existing sensitive uses when siting new TAC-emitting facilities or with respect to TAC-emitting sources when siting sensitive receptors. ARB¹⁰ recommends that following buffer distances be observed when locating TAC emitters or sensitive land uses:

- Freeways or major roadways – 500 feet;
- Dry cleaners using perchloroethylene – 500 feet;
- Auto body repair services – 500 feet;

¹⁰ ARB *Air Quality and Land Use Handbook—A Community Health Perspective* April 2005.

- Gasoline dispensing stations with an annual throughput of less than 3.6 million gallons – 50 feet;
- Gasoline dispensing stations with an annual throughput at or above 3.6 million gallons – 300 feet;
- Other TAC sources including furniture manufacturing and repair services that use methylene chloride or other solvents identified as a TAC – 300 feet;
- Distribution centers with more than 100 trucks per day; more than 40 trucks with operating transport refrigeration units per day; or where transport refrigeration unit operations exceed 300 hours per week – 1,000 feet;
- Rail yards for major service and maintenance operations – 1,000 feet;
- Chrome platers – 1,000 feet;
- Port developments should not site the heavily impacted areas immediately upwind of sensitive land uses; and
- Petroleum refineries should not site the heavily impacted areas immediately upwind of sensitive land uses.

Several of the uses in the list above are industrial in nature and would not be permissible in the Project area based on the Project land uses allowed in the SPA. These include chrome platers, rail yards, major distribution centers, and refineries. California regulations prohibit the installation of new perchloroethylene dry cleaning equipment; since there are no existing dry cleaners in the Project area, that item is not relevant. The SMAQMD recommends that site-specific health risk assessments be performed to accurately document potential cancer risk when siting sensitive land uses within the above buffer zones.

For the assessment of significant impacts from exposure to TACs from mobile sources, the SMAQMD has issued the Recommended Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways. The Protocol does not establish a threshold of significance for mobile sources, but indicates an evaluation criterion of that level of increased individual risk corresponding to a 70 percent reduction from the highest risk calculated at 50 feet (currently of 276 cases of cancer per million, Sacramento Metropolitan Air Quality Management District 2011). At this level, a Health Risk Assessment is recommended, the results of which should be disclosed in an environmental document.

ODOR IMPACTS

Odiferous compounds can be generated from a variety of sources, including both construction and operational activities and from specific land uses. Land uses that typically generate significant odor impacts include, but are not limited to: wastewater treatment plants, sanitary landfills, composting/green waste facilities; recycling facilities; petroleum refineries, chemical manufacturing plants, painting/coating operations, and food packaging plants.

Thresholds for odor impacts have not been established by the SMAQMD; however, the air district recommends that several factors be taken into account when determining the significance of a potential odor impact. Those parameters include:

- **Nature of the Odor Source:** Odors generated by source types such as wastewater treatment plants, landfills, or rendering plants are typically considered objectionable and offensive to most individuals. Evaluations of the nature of odor sources should include the intensity of the source's operation as well as the time of day and duration of odor emissions.
- **Buffer Zone:** The SMAQMD considers the inclusion of a sufficient buffer zone to be one of the most effective methods to ensure land use compatibility with respect to odors. Distance alone can allow odor emissions to disperse to lower, undetectable levels before reaching receptors. The SMAQMD uses a screening distance of one mile for landfills.

Because the Project site is within one mile of the Kiefer landfill, it is considered to have an increased potential to be impacted by odors from the landfill. A buffer zone that includes dense vegetative cover from trees and shrubs could further reduce the level of the impact by acting as a filter and enabling more vertical or mechanical mixing to occur.

All odor impact discussions should provide the buffer distance and a description of the land features and topography in the buffer zone that separates receptors and the odor source.

- **Meteorology:** Meteorological conditions affect the dispersion of odor emissions, thereby affecting the significance of the impact. The analysis should determine predominant wind direction and the frequency of temperature inversions in the project area and evaluate whether receptors would be upwind or downwind of the odor source.
- **Odor Complaint History:** Projects that would locate receptors near a potential odor source should consider the odor complaint history for the past three years of the source's operations. In reviewing the complaint history, lead agencies should consider the distance of the receptors making the complaint and the upwind/downwind orientation with respect to the source. The SMAQMD considers odor sources to have a substantial number of odor complaints if they have had one confirmed complaint per year averaged over a three-year period or three unconfirmed complaints per year averaged over a three-year period. In general, when a source has a substantial number of odor complaints, that source would be considered to have a potentially significant odor impact.

IMPACTS AND ANALYSIS

The analysis in this section focuses on the nature and magnitude of the change in the air quality environment due to implementation of the Project. The Project would allow for development of 8,000 residential units, 1,350,000 square feet (sf) of commercial-retail development, a 240-acre university for 6,000 students (with 1,010 dorms), and approximately 700 acres of open space to be used as recreation areas, parks, natural preserves, and open space corridors. Air quality impacts are estimated with respect to regional air quality standards and localized sensitive receptors such as schools and residential land uses. The health of people on these properties (including residents of the Project) may be adversely impacted if air emissions exceed a level deemed significant by federal or state agencies. The net increase in site emissions generated by the Project was qualitatively and quantitatively evaluated and compared to thresholds of significance established by the SMAQMD.

IMPACT: CONSTRUCTION ACTIVITIES WOULD INCREASE NO_x EMISSIONS

Construction activities require the use of various combinations and types of construction equipment. Much of this equipment is likely to be diesel-fueled and would emit NO_x as part of the fuel combustion process. Because of the low regulatory threshold (85 pounds per day within the SMAQMD), total daily emissions of NO_x from standard development projects within the Cordova Hills Master Plan Area could exceed the threshold on most days.

During construction of the Project, emissions of NO_x would occur from the operation of equipment necessary to complete the development. These emissions were estimated through the URBEMIS model using the three-phase construction schedule detailing an approximate level of construction per year and default URBEMIS equipment lists. Buildout of the Project will occur over a span of decades, and will be driven by prevailing market conditions in any given year. Based on historical trends within Sacramento County, it can be expected that there will be periods of intense construction in which multiple large areas are subject to concurrent construction, and periods of minimal activity in which the demand for construction abates. This makes it infeasible and speculative to provide an accurate forecast of year-to-year emissions. An example URBEMIS modeling scenario was created to estimate the potential of the Project for impacts, but these results should not be construed as predictive.

For the example modeling scenario, Project buildout could span approximately 30 years with various levels of construction anticipated per year, depending on market demands.

The modeling assumes that within each year, each type of residential development and each non-residential land use type is an individual project. Further, it assumes that, as a worst-case scenario, grading phases and construction phases overlap and each project would disturb the total phase acreage daily. In terms of the pounds of emissions per day, the Project impacts could ultimately be greater or less than those reported below depending upon how actual buildout of the Project progresses. Table AQ-4 summarizes the NO_x emissions from the modeled yearly construction activities up to the

year 2035, prior to and after implementation of the BCECP and ECECP measures. It is reasonable to expect that as the planning area nears buildout annual construction activities will decline, as construction occurs on small areas which still remain after the bulk of construction has been completed.

As shown in the table, the Project does have the potential to result in significant impacts throughout most of the life of the Project, even after implementation of the BCECPs and ECECPs. Construction specifications and URBEMIS output are included in Appendix AQ-3. Mitigation is included to ensure that all subsequent projects which occur within the Project area conform to the SMAQMD mitigation and abatement requirements which are in effect at the time. Currently, these requirements include reduction of NO_x pollutants by 20%, and the payment of a fee for projects with NO_x emissions that remain significant even after the 20% reduction. SMAQMD uses the mitigation fees to help fund regional air quality programs, such as the replacement of older construction equipment with newer models and the retrofitting of older equipment with pollution-reducing components. Since NO_x is a precursor to regional ozone formation, mitigation fees are used on projects anywhere within the ozone non-attainment area that meet the cost-effectiveness criteria used to determine the fee. Compliance with SMAQMD regulations and recommended mitigation will ensure that impacts are *less than significant*.

MITIGATION MEASURES:

- AQ-1.** The following language shall be added to the SPA: All individual development projects shall implement Sacramento Metropolitan Air Quality Management District rules and mitigation pertinent to construction-related ozone precursor emissions, as defined by the most current version of the Sacramento Metropolitan Air Quality Management District Guide to Air Quality Assessment.

Table AQ-4: Project NO_x Emissions During Construction (lbs/day)

Year	SMAQMD Threshold	Construction emissions without control measures		Construction emissions with BCECP and ECECP measures	
		NO _x	Significant ?	NO _x	Significant?
2014	85	171.31	Yes	143.51	Yes
2015	85	190.69	Yes	161.44	Yes
2016	85	272.32	Yes	232.34	Yes
2017	85	220.79	Yes	189.02	Yes
2018	85	345.15	Yes	296.19	Yes
2019	85	318.96	Yes	273.64	Yes
2020	85	405.27	Yes	346.38	Yes
2021	85	401.01	Yes	337.91	Yes
2022	85	394.68	Yes	331.58	Yes
2023	85	251.13	Yes	207.39	Yes
2024	85	363.25	Yes	300.55	Yes
2025	85	283.14	Yes	231.45	Yes
2026	85	110.85	Yes	89.00	Yes
2027	85	129.43	Yes	106.38	Yes
2028	85	17.18	No	14.18	No
2029	85	34.40	No	28.39	No
2030	85	34.40	No	28.39	No
2031	85	17.18	No	14.18	No
2032	85	34.40	No	28.39	No
2033	85	17.18	No	14.18	No
2034	85	17.21	No	14.21	No
2035	85	17.21	No	14.21	No

Source: URBEMIS2007 version 9.2.4 modeled by PBSJ January 2011.

IMPACT: OPERATIONAL EMISSIONS OF OZONE PRECURSORS (NO_x OR ROG)

Sacramento County is currently in nonattainment for the federal and state ozone standards. The completed Project would result in emissions of NO_x and ROG generated from area and mobile sources. Emissions from the Project at full buildout in the year 2035 were calculated using the URBEMIS model, with worst-case results provided in Table AQ-5. The URBEMIS defaults were changed to reflect Project-specific data derived from the traffic study performed for the Project (trip rates and lengths). These data already reflect many of the Project features which reduce trip generation, such as the provision of a transit system. The URBEMIS data sheets are included in Appendix AQ-4.

As shown in Table AQ-5, emissions will substantially exceed the threshold of 65 lbs/day. General Plan policy AQ-4 requires that projects with substantial ozone precursor emissions develop a plan to reduce those emissions, and the SMAQMD typically recommends likewise. The typical reduction amount required is 15%; however, SMAQMD indicated that the Project was not included in the land use assumptions of the State Implementation Plan (SIP) for the regional reduction of ozone precursors emissions, and recommended a greater reduction of 35%. Note that these required reductions are reductions from a Business As Usual scenario which was developed by SMAQMD, not from the Project as-designed. The purpose of the Business As Usual scenario is to provide a level playing field, so that projects which already incorporate many emissions-reducing features are not penalized.

Table AQ-5: Project NO_x and ROG Operational Emissions at Buildout

	Emissions in lbs/day ¹
NO_x	415.22 ²
ROG	857.40 ³
¹ – PBS&J URBEMIS analysis 2011. ² – Winter emissions. Summer emissions are 290.18 lbs/day. ³ – Summer emissions. Winter emissions are 735.05 lbs/day.	

In conformance with General Plan policy and SMAQMD recommendations, an AQMP was prepared for the Project to define the processes by which emissions of NO_x and ROG would be reduced; the Business As Usual scenario is described in the AQMP. The full text of the AQMP is included as Appendix AQ-2 and is summarized herein. SMAQMD's "Guidance for Land Use Emission Reductions" v 2.5 (January 2010) provides a description of the most current feasible mitigation measures and their corresponding NO_x and ROG reduction potential; this was the source for most of the reduction measures used in the AQMP. Through design features detailed in the AQMP, the Project would implement the following measures to actively reduce NO_x and ROG emissions, which would result in a 35.32 percent reduction from Business As Usual emissions:

- SMAQMD 28 – Onsite Renewable Energy
- SMAQMD 29 – Exceed Title 24
- SMAQMD 33 – TMA Membership
- SMAQMD 99B – Roundabouts
- SMAQMD 99A – VMT Reduction

The final three items in the AQMP were part of the development of the traffic study, because they reflect the Project as it is designed, and so those reductions are already reflected in the emissions described in Table AQ-5. Giving additional consideration to the first two measures, onsite renewable energy and exceeding Title 24, the AQMP indicates that these measures will further reduce emissions by 4%. Thus, the total mitigated Project emissions will be 398.61 lbs/day of NO_x and 823.10 lbs/day of ROG.

The proposed Project will result in approximately 35% less ozone precursor emissions than a Business As Usual project design. However, even with the reduction afforded by implementation of the AQMP the Project would still exceed the daily emissions thresholds of 65 lbs/day for long-term NO_x and ROG emissions. Therefore, the Project would result in a *significant and unavoidable* impact with respect to operational emissions of NO_x and ROG.

MITIGATION MEASURES:

AQ-2. Comply with the provisions of the Air Quality Management Plan dated June 1, 2011, and incorporate the requirements of this plan into the Cordova Hills Special Planning Area conditions. **Also, the following text shall be added to the Cordova Hills SPA: “All amendments to the Cordova Hills SPA with the potential to result in a change in ozone precursor emissions shall include an analysis which quantifies, to the extent practicable, the effect of the proposed SPA amendment on ozone precursor emissions. The amendment shall not increase total ozone precursor emissions above what was considered in the AQMP for the entire Cordova Hills project and shall achieve the original 35% reduction in total overall project emissions. If the amendment would require a change in the AQMP to meet that requirement, then the proponent of the SPA amendment shall consult with SMAQMD on the revised analysis and shall prepare a revised AQMP for approval by the County, in consultation with SMAQMD.”**

IMPACT: CONSTRUCTION ACTIVITIES WOULD INCREASE PARTICULATE MATTER EMISSIONS

The Project would disturb up to approximately 2,669 acres during a three-phase development schedule estimated to span thirty years. As discussed in the Construction Impact Methodology section, a project will result in less than significant impacts with the implementation of the Basic Construction Emission Control Practices if no more than 15 acres of active site disturbance occurs at any given time. Because the specific construction schedule is unknown and the development of individual projects may overlap, it is likely that construction activities will not be limited to 15 acres. In fact standard SMAQMD guidance indicates that it should be assumed that 25% of a total site will be actively graded at any one time, which means that any site of greater than 60 acres will involve more than 15 acres of active grading. It is reasonable to expect that there will be many projects within the Project area which will involve grading that exceeds the SMAQMD screening threshold, and should be presumed to have significant impacts.

Dust abatement practices are required pursuant to SMAQMD Rule 403 and California Code of Regulations, Title 13, sections 2449(d)(3) and 2485; the SMAQMD Guide simply lays out the basic practices needed to comply. Since these are already required by existing rules and regulations, it is not necessary to include them as mitigation. These practices also constitute all feasible measures available to reduce the impact.

Limiting future projects to no more than 15 acres of active grading has been considered, but is infeasible for a variety of reasons. Firstly, subsequent development under the SPA will be constructed by separate developers, each with their own schedules, so such a measure would require coordinating among all these developers to set schedules which would not result in cumulative exceedance of the 15-acre limitation. The likely result of this would be to prevent certain development projects from progressing until a later construction season. In addition, it would require constant on-site monitoring by County staff to ensure that the measure was being carried out. The measure is impracticable, and is furthermore not recommended by SMAQMD. Despite the application of feasible measures through existing rules and regulations, the Project will result in a *significant and unavoidable* impact related to PM₁₀ and PM_{2.5} emissions generated by construction.

MITIGATION MEASURES:

None available.

IMPACT: IMPLEMENTATION OF THE PROJECT COULD CONFLICT WITH OR OBSTRUCT IMPLEMENTATION OF AIR QUALITY PLANS

In 1994, the SMAQMD established a Clean Air Plan, or State Implementation Plan (SIP), for attaining the federal 1-hour ozone standard in the Sacramento Air Basin (SMAQMD 1994). This plan includes assumptions and allowances for growth and development in the region and details the control measures and Best Management Practices that must be used for the region to make progress toward attainment. The 1994 Clean Air Plan has been updated numerous times since its promulgation. The most recent update to the Clean Air Plan is the *State of Progress Plan* and *2011 Reasonable Further Progress Plan*, both of which address attainment of the federal 8-hour ozone standard. The *2008 Triennial Report* and the *2007 Annual Progress Report* address the attainment of the state ozone standard. The current SIP and the current 2035 Metropolitan Transportation Plan (MTP) published by the Sacramento Area Council of Governments both used the same growth assumptions. A draft update to the MTP has been published, but has not been adopted at this time. The project area is shown in the draft MTP as being “not identified for development during the MTP/SCS [Sustainable Communities Strategy] planning period”.

The Project would develop a residential/mixed-use community, including a potential university or college, on approximately 2,669 acres. The Cordova Hills Master Plan area is within the jurisdiction of the SMAQMD and, therefore, would be required to comply with the regulatory plans of the district with respect to air quality. According to the SMAQMD, development projects that exceed emissions of 85 lbs/day of NO_x during construction activities or 65 lbs/day of NO_x or ROG during operational activities would have the potential to obstruct the success of the regional ozone attainment plans and, therefore, would be considered significant and require mitigation.

The existing standards and mitigation have been established based on the underlying targets and assumptions of the SIP; however, the SIP is tied to a “motor vehicle emissions budget”, and growth east of Grant Line Road was not included as part of the growth assumptions when developing the budget. As a result, SMAQMD has indicated that even if the Project included standard mitigation and met the current operational significance thresholds, a significant impact would still occur. It is for this reason that an increased requirement for operational ozone precursor emissions reductions – from 15% to 35% – was recommended by SMAQMD.

Emissions of NO_x and ROG from construction and operational activities are discussed in detail in the previous impacts. NO_x emissions during construction are anticipated to exceed the 85 lbs/day threshold; therefore, the Project’s construction impact would be considered significant. Mitigation measures AQ-2 and AQ-3 would reduce ozone precursors either directly through the use of low ROG emitting paints, or indirectly, through the reduction of fuel combustion which emits NO_x and ROGs. However, even with the incorporation of Project design features and Mitigation Measures AQ-2 and AQ-3, the operation of the Project is anticipated to emit NO_x and ROG at levels above the 65 lbs/day threshold. Even if the Project fell below the thresholds, emissions would still be significant because the Project was not assumed in the SIP. Therefore, the Project has the potential to obstruct the success of regional ozone attainment and would result in a *significant and unavoidable* impact.

MITIGATION MEASURES:

Implement Mitigation Measure AQ-2, which represents all feasible mitigation.

IMPACT: PROJECT OPERATION WOULD GENERATE CO EMISSIONS

Motor vehicle usage is the primary source of CO, a primary air pollutant that concentrates near congested intersections. The Project would result in a net increase in traffic within Sacramento County. According to the traffic study prepared for the Project, eighteen intersections would either be subject to degradation of LOS to a level of service E or worse, or add vehicles to an intersection already operating at an LOS of E or worse (refer to Table AQ-6). These identified intersections do not meet the First Tier SMAQMD screening criteria for CO and must be further examined.

None of the affected intersections would result in an hourly traffic volume of more than 31,000 vehicles. A review of area topography indicates that these intersections are located in open areas, not in locations where vertical or horizontal mixing would be limited. The background data from the traffic study further indicate that the implementation of the Project would not substantially change the mix of vehicle fleets typical to Sacramento County at these intersections. Therefore, based on SMAQMD screening methodology as described in the Methodology section, the Project would result in a *less than significant* impact with respect to local CO emissions. The screening level analysis is included in Appendix AQ-5.

MITIGATION MEASURES:

None required.

Table AQ-6: Intersection LOS and Peak Hourly Volumes

Int#	Int North-South Street	Int East-West Street	Existing No Project			Existing W/ Project	
			AM/PM	LOS	Total Vehicle	LOS	Total Vehicle
1	S Watt Ave	Jackson Rd(SR-16)	PM	D	3,470	E	3,629
2	Bradshaw Rd	Jackson Rd(SR-16)	AM	E	3,444	F	3,831
3	Mather Blvd	Douglas Rd	AM	E	1,289	F	1,569
5	Eagles Nest Rd	Jackson Rd(SR-16)	PM	C	1,042	F	1,647
6	Grant Line Rd	Sunrise Blvd	AM	D	1,674	F	2,123
7	Grant Line Rd	White Rock Rd	AM	C	1,188	F	1,966
8	Prairie City Rd	White Rock Rd	AM	E	1,465	F	1,756
12	Zinfandel Dr	White Rock Rd	PM	E	3,982	F	4,242
14	Sunrise Blvd	White Rock Rd	AM	C	4,771	F	6,101
15	Sunrise Blvd	Douglas Rd	AM	A	2,747	F	4,122
16	Sunrise Blvd	Jackson Rd(SR-16)	AM	E	2,161	F	2,655
17	Grant Line Rd	Jackson Rd(SR-16)	PM	F	2,119	F	3,390
18	Grant Line Rd	Kiefer Blvd	PM	B	952	F	2,648
19	Grant Line Rd	Douglas Rd	PM	B	928	F	3,726
23	Zinfandel Dr	US-50 EB Ramps	PM	F	6,094	F	6,330
30	Grant Line Rd	North Loop Rd	PM	-	-	F	3,772
31	Grant Line Rd	Chrysanthy Blvd	PM	-	-	F	1,860
32	Grant Line Rd	University Blvd	PM	-	-	F	3,046
Source: DKS Associates, March 2011.							

IMPACT: PROJECT OPERATION WOULD RESULT IN TAC EMISSIONS

Though Project-level details are unavailable at the master planning stage, based on the land uses of the Project, it is reasonable to assume that some TAC-generating uses (such as gasoline stations and dry cleaners) would be constructed within the Project in areas designated for non-residential uses. The most stringent applicable ARB buffer for uses that generate TACs is 500 feet; the nearest existing receptor location is a single-family home on Glory Lane that is well over 700 feet from the nearest potential TAC-generating Project area. The nearest existing daycares, hospitals, and other more sensitive receptors are located more than a mile from the nearest non-residential Project land uses. Because of the distance between the Project site and the nearest sensitive receptors, the Project would not expose existing sensitive receptors to substantial risk related to stationary-source TAC.

Within the Project there is the potential for the future construction of new sensitive receptors in proximity to new stationary TAC sources. Because the exact location of the potential new stationary TAC sources relative to new proposed sensitive receptors will be determined as part of later individual development proposals, it is not possible to conduct a proximity analysis at this time. Though General Plan policy AQ-3 states that buffers between sensitive land uses and sources of air pollution or odor should be provided, some of these future projects may only require building permits, and would not be subject to any review for TAC impacts unless conditions are imposed as part of the SPA. Mitigation is included below to stipulate that a condition be added to the SPA requiring that all uses conform to the siting recommendations outlined by ARB.

Aside from the stationary sources described above, an additional potential TAC source in the Project area is Grant Line Road. According to SMAQMD's Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways, a high traffic volume roadway is defined as a freeway, urban roadway with greater than 100,000 vehicles per day, or rural roadway with 50,000 vehicles per day. The current project area is rural, but by the time the Project is completed the area will be urban. In the existing plus project scenario, Grant Line Road carries less than 50,000 trips (42,400 in the worst case) and is thus not a high traffic volume roadway. In the cumulative plus project scenario, Grant Line Road carries less than 100,000 trips (50,200 in the worst case) and is still not a high traffic volume roadway¹¹. A review of the Draft Environmental Impact Report for the Capitol Southeast Connector Project indicates that the highest anticipated traffic volumes would be 66,900 trips in the worst case. Therefore, the Project uses will not be subject to significant TAC sources due to high traffic volume roadways.

As analyzed, the Project will not expose existing sensitive receptors to substantial risk related to stationary-source TAC exposure, and will not expose proposed sensitive

¹¹ Traffic volumes in the existing and cumulative scenarios are from the Cordova Hills Traffic Analysis prepared by DKS Associates Transportation Solutions.

receptors to substantial risk related to mobile-source TAC exposure. The Project could result in exposure of proposed future uses to proposed future stationary source TAC, but mitigation is included to ensure that the siting of new uses conforms to ARB recommendations. Project impacts related to TAC exposure are *less than significant*.

MITIGATION MEASURES:

AQ-3. *The following language shall be added to the SPA:* Buffers shall be established on a project-by-project basis and incorporated during permit or project review to provide for buffer separations between sensitive land uses and sources of air pollution or odor. The California Air Resources Board's "Air Quality and Land Use Handbook: A Community Health Perspective", or more current document, shall be utilized when establishing these buffers. Sensitive uses include schools, daycare facilities, congregate care facilities, hospitals, or other places of long-term residency for people (this includes both single- and multiple-family). The buffers shall be applied to the source of air pollution or odor, and shall be established based either on proximity to existing sensitive uses or proximity to the property boundary of land designated for sensitive uses. Buffers current at the time of the establishment of this SPA indicate that sensitive uses should be:

- A. At least 500 feet from auto body repair services.
- B. At least 50 feet from existing gasoline dispensing stations with an annual throughput of less than 3.6 million gallons and 300 feet from existing gasoline dispensing stations with an annual throughput at or above 3.6 million gallons.
- C. At least 300 feet from existing land uses that use methylene chloride or other solvents identified as a TAC, including furniture manufacturing and repair services.

IMPACT: PROJECT OPERATION MAY RESULT IN EXPOSURE TO OBJECTIONABLE ODORS

Odiferous compounds can be generated from a variety of sources. The ARB's Air Quality and Land Use Handbook includes a list of the most common sources of odor complaints received by local air districts. Typical sources of odor complaints include facilities such as sewage treatment plants, landfills, recycling facilities, petroleum refineries, and livestock operations, which typically occur within areas designated for industrial or intensive agriculture uses. The Project proposes the designation of commercial and residential land uses, along with a university. These land uses do not typically result in a source of nuisance odors associated with operation. Though some areas will remain designated for agriculture, intensive agricultural uses (such as feed lots) would not be permitted. Therefore, substantial objectionable odors would not be generated as a result of the Project's construction and operation.

KIEFER LANDFILL

The Kiefer Landfill is located at 12701 Kiefer Boulevard and Grant Line Road in Sloughhouse, California. There are several landfill boundaries to consider: the boundary of County-owned landfill property, which abuts the Project boundary; the ultimate planned boundary of the active landfill, which is approximately 50 feet from the Project boundary; and the 2,000-foot buffer established around the ultimate planned landfill boundary, which is within the Project site (refer to Plate AQ-1). SMAQMD recommends a one mile buffer from landfills, which is also shown on the exhibit based on the proposed ultimate active landfill boundary. Though one mile is not meant to be a hard-line buffer for determining significance, it is a useful screening tool. The land in between the Project and the landfill contains landforms similar to the site: rolling grassland of varying elevations. The site is at a higher elevation than the land to the south.

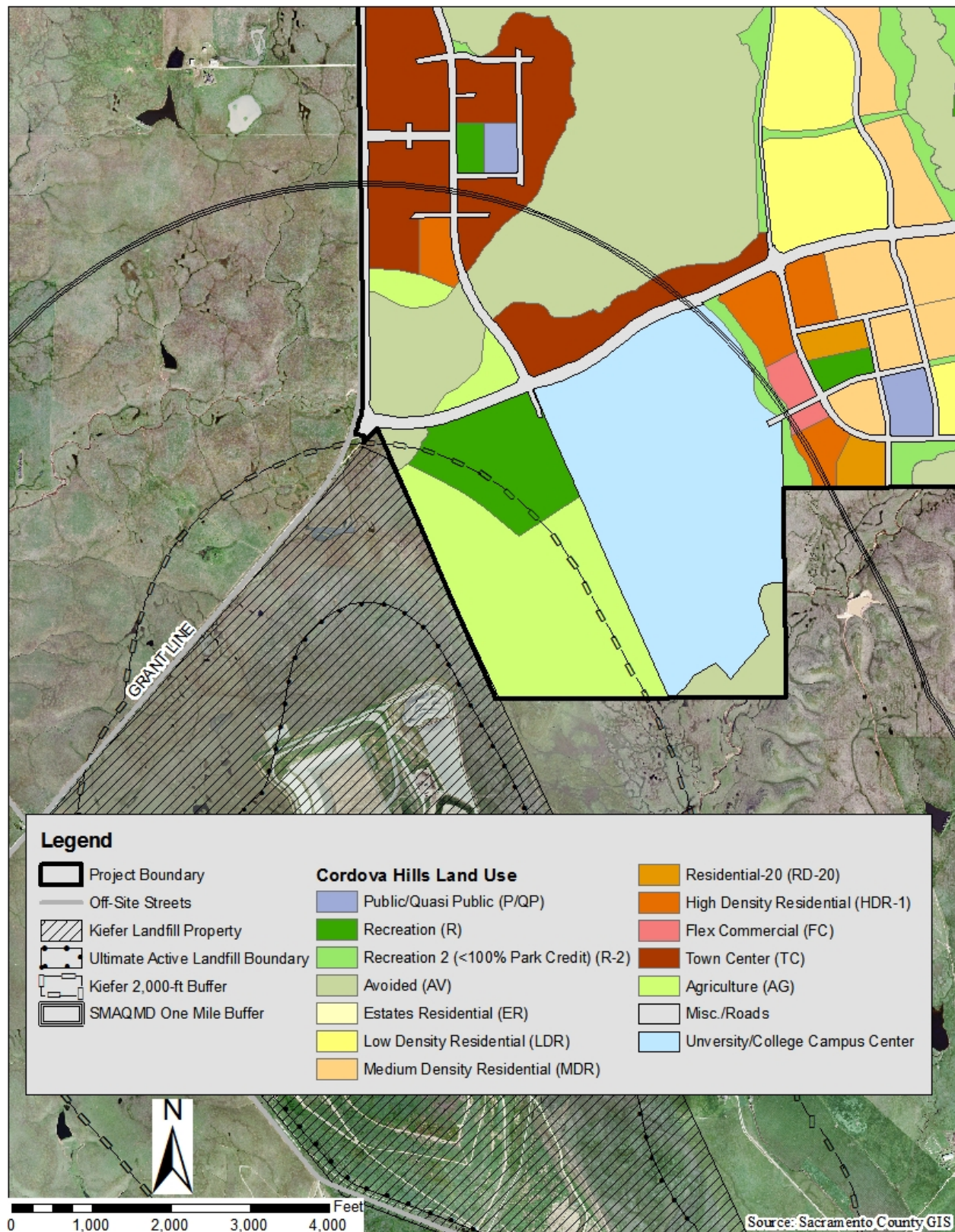
The Project area which directly abuts the landfill property, and is within the 2,000-foot buffer area, is the area of the Project outside the Urban Services Boundary: the sports park and the large area designated agriculture. These uses are acceptable within the 2,000-foot buffer, according to General Plan Policy PF-21. With the exception of the park, most of the uses proposed or permitted in the agriculture area involve uses such as solar arrays and corporation yards, which are relatively passive and do not involve large numbers of sensitive receptors. The areas within one mile of the ultimate landfill boundary include the potential university, a small portion of the uses east of the potential university, and the southern half of the Town Center District.

Meteorological conditions for the Project site were collected at Mather Air Force Base.¹² The six years of data show that winds blow predominantly from the south, with winds blowing from the south-southwest approximately 18% of the time, winds blowing from the south approximately 12% of the time, and winds blowing from the southeast 27% of the time. Thus, approximately 57% of the time prevailing winds would blow across Kiefer landfill and toward some portion of the site. The Project's location downwind of the landfill has the potential to expose Project receptors to landfill odors. Also, the area in between the landfill boundary and the Project is currently covered in low-growing grassland, with little tall vegetation to enhance vertical and mechanical mixing of the air which could help to disperse odor¹³.

¹² California Air Resources Board. 2009. Meteorological data for Mather Air Force Base and Sacramento Executive Airport downloaded from the following website: <http://www.arb.ca.gov/toxics/harp/metfiles.htm>.

¹³ SMAQMD *CEQA Guide* December 2009.

Plate AQ-1: Kiefer Landfill Boundaries in Relation to the Project



The generation of odors when most people are inside would have a decreased probability of negative effects¹⁴. On this basis, uses which involve larger amounts of extended outdoor use would be more susceptible to nuisance; within one mile of the landfill, this includes the sports park and potentially the playing fields and outdoor areas which could be constructed on the University/College Campus Center. The dorms, classrooms, businesses, and the multiple-family residential site that are within one mile of the landfill will primarily be associated with indoor activity, and will be less sensitive to odor impacts. The SMAQMD Guide indicates that the presence of dense vegetative cover in the form of trees and shrubs can filter, mix, and diffuse odors. This would be of particular importance for the sports park, because it is the most proximate use to the landfill. A landscaping requirement is already included in the SPA for the potential solar farm, corporation yard, and district energy plant, but mitigation recommends that a similar requirement be established in the SPA for the sports park and the University/College Campus Center.

According to the SMAQMD, the landfill would be considered to have a significant odor complaint history if it had more than one confirmed or three unconfirmed complaints per year over the past three years. The SMAQMD does not have any odor complaints on record for the Kiefer Landfill for the past three years. Though there are no odor complaints on record, it is difficult to conclude that this is evidence of minimal odor; there are no existing receptors within one mile of the landfill in the direction of prevailing winds, and very few within one mile in any direction. During multiple site visits of several hours duration, County staff members did not detect any objectionable odors, but this is also not absolute evidence.

Only considering the meteorological conditions and the proximity of the Project to the landfill, it would be likely that some significant odor impacts to the Project could occur; however, the SMAQMD Guide does provide further information regarding factors that can reduce odor impacts, if present. Kiefer Landfill has established an active gas-to-energy system that employs active gas extraction from the landfill for use in electrical generation. As landfill gas is a major source of odor from a landfill, the active extraction of gases for use in generating electricity is an effective form of limiting odors.^{15,16} Given all of the foregoing – with particular emphasis on the ability of the gas extraction system to reduce the potency and density of landfill odor – and the mitigation incorporated below, odor impacts are not expected to be substantial, and impacts are *less than significant*. Note that an additional measure is recommended in the Land Use section related to Kiefer Landfill, to reduce potential nuisance impacts.

¹⁴ SMAQMD CEQA Guide December 2009.

¹⁵ County of Sacramento Waste Management and Recycling.
<http://www.msa2.sacounty.net/wmr/Pages/KieferLandfillGas-to-EnergyPlant.aspx>, accessed March 2011.

¹⁶ Wasteage “What’s that Smell?” published December 1, 2006.
http://wasteage.com/mag/waste_whats_smell/#, accessed March 2011.

BOY'S RANCH

The Boy's Ranch, a juvenile correction facility which has been operated by the Sacramento County Probation Department, is adjacent to the northeastern Project boundary. Though budget cuts have resulted in the closure of the facility, there is the potential for the facility to reopen in the future. This facility includes a wastewater treatment system consisting of a gravity collection system, a 9,000 gallon temporary storage/holding tank, a sewage distribution box, and two unlined percolation/evaporations ponds. The two ponds cover an area of approximately 2.9 acres and would be the source of any nuisance odors. The wastewater treatment facility is regulated by the Central Valley Regional Water Quality Control Board through adopted Waste Discharge Requirements (Order NO. R5-2004-0003); the Waste Discharge Requirements are the source of data for this discussion.

Wastewater ponds which are properly aerated and managed do not result in significant nuisance odors. Odors are generated when oxygen concentrations in ponds drop too low to maintain an aerobic treatment environment; the Waste Discharge Requirements for the facility indicate that these conditions generally result when dissolved oxygen drops to concentrations below 1.0 milligrams per liter. Historic monitoring reports related to the facility do indicate that concentrations have dropped below this level occasionally, but that they have generally been well above this level (as high as 18.2 milligrams per liter). Furthermore, discharge specification number four states: "objectionable odors originating at this facility shall not be perceivable beyond the limits of the wastewater treatment and disposal areas". The facility is specifically prohibited from causing a nuisance odor condition, and nuisance odor is fully controllable through maintenance of aerated conditions in the ponds. Though based on historic operation of wastewater facilities in general and of this facility in specific it can be expected that there will be events when aeration fails (a pump malfunctions, for instance), it can also be expected that these will be infrequent events of short duration. Therefore, nuisance odor impacts are expected to be *less than significant*.

MITIGATION MEASURES:

- AQ-4.** Include in the SPA a requirement that the western perimeter of the Sports Park and University/College Campus Center (where these are within 2,000 feet of the Kiefer landfill) include a minimum 25-foot-wide landscaping area. This landscaping area shall include a dense mix of trees and shrubs, to screen the uses from the landfill. Acceptable tree species include those expected to reach minimum heights of 40 feet.

6 BIOLOGICAL RESOURCES

INTRODUCTION

This chapter identifies and analyzes impacts to biological resources based on the proposed Project. The analysis focuses on impacts to the grassland and wetland habitats which predominate the site and the special status species which rely on these habitats. Species covered include a variety of special status birds, insects, plants, and amphibians such as Swainson's hawk, vernal pool fairy shrimp, legumere, Sacramento Orcutt grass, and western spadefoot toad.

ENVIRONMENTAL SETTING

The Project site is located in eastern Sacramento County east of Grant Line Road and west of Carson Creek. The Project site is approximately 2,669 acres and is located on varying topography ranging in elevation from 130 to 270 feet above mean sea level. The dominant vegetation type is non-native grassland comprised of ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), wild oats (*Avena fatua*), barley (*Hordeum* species), and ryegrass (*Lolium multiflorum*). **Other herbaceous species include sticky tarplant (*Holocarpha virgata*), common tarweed (*Hemizonia pungens*), cut-leaved geranium (*Geranium dissectum*), hairy hawkbit (*Leontodon taraxacoides*), common vetch (*Vicia sativa*), and filaree (*Erodium botrys*).** Interspersed through the grassland community are wetland complexes consisting of vernal pools, seasonal wetlands, swales, and ponds. Both the wetland and grassland communities provide habitat for several special status species. Examples of the **special status** species located on or near the Project site include: Swainson's hawk, Sacramento Orcutt grass, vernal pool branchiopods, and the western spadefoot toad. There are no trees within the Project area.

Currently, land surrounding the Project site is mostly undeveloped. To the south is the Sacramento County owned and operated Kiefer landfill. A 2,000-foot buffer was established around the landfill to preclude urban development from encroaching on landfill activities. Portions of the County-owned land within this buffer area are protected under a conservation easement to mitigate for loss of both wetland habitat and Swainson's hawk foraging habitat that was impacted by landfill activities. A portion of the Project site is within the 2,000-foot buffer; however, the land in question is not protected by conservation easements. To the east is the Sacramento County Boys Ranch facility (a juvenile correction facility, currently closed) and agricultural farmlands. To the north is agricultural farmland (primarily nonirrigated grazing land). In the City of Rancho Cordova to the west is land that is largely undeveloped, but includes an

approved and partially constructed planning area called the Sunridge Specific Plan (a mix of commercial and residential development of approximately 2,606 acres).

WETLANDS

The County of Sacramento contains a number of wetland habitats, most of which are naturally occurring, although some were artificially created as mitigation for prior impacts. Federal regulation (Clean Water Act Section 404) has defined the term wetland to mean “those areas that are inundated or saturated by surface or ground water 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”. The term “wetlands” includes a diverse assortment of habitats such as perennial and seasonal freshwater marshes, vernal pools, and wetted swales. These wetland features share a number of physical characteristics, including frequent or seasonal inundation by water, soil saturated long enough to exclude organisms intolerant of anaerobic conditions, and plants that are adapted to wetted conditions. A general term for all water habitats is “surface waters”.

SEASONAL WETLANDS

Seasonal wetlands are scattered throughout the County, most in association with the County’s rivers and creeks, many within floodplains. These wetlands typically begin to form after the first winter rains and fill as rain continues through the season. They drain primarily via drainage swales during high runoff, or via combination of ground percolation and evaporation. By mid-summer or early fall these features will typically be dry. Depending on water depth and duration, seasonal wetlands can harbor federally-listed invertebrates and provide habitat for a large number of species, including the listed western spadefoot toad. Seasonal wetlands primarily differ from vernal pools (see below) in their underlying soils. Seasonal wetland soils are typically more permeable than the soils associated with vernal pools.

VERNAL POOLS

Vernal pools are small basins, depressions on the landscape that collect seasonal rains to support a specialized collection of plant and animal species. Typically, semi-impermeable soil underlies most vernal pools and restricts downward percolation of collected rain water. As a result, water slowly evaporates during the spring creating showy displays of tiny flowers blooming in concentric circles as the water recedes. Most plants found in vernal pools are endemic (found only in these habitats) and have adapted to survive partially-submerged conditions. These conditions have kept the non-native grasses that comprise much of the County’s grazing lands from invading or at least dominating the pools. Thus, vernal pools are small pockets of mostly native vegetation surrounded by mostly non-native grass species.

SEASONAL SWALES

Depending on the underlying soils, swales share similar characteristics with either seasonal wetlands or vernal pools. Typically, swales are shallow, linear features that may serve as drainage features into or out of a seasonal wetland or vernal pool. Although common throughout much of the County's wetland landscapes, the wetland functions of a swale are less pronounced than either of the aforementioned wetlands. Shallowness and topography of swales limit the duration of ponded water, thus reducing the expression of typical wetland characteristics.

HUMAN-MADE STOCK PONDS

In the County's rural lands ranchers have established water features, or stock ponds, typically by damming small drainages to form relatively deeper ponds which can hold water through much of the summer months. These ponds typically provide a deeper water habitat for some amphibian species.

REGULATORY SETTING

2030 SACRAMENTO COUNTY GENERAL PLAN

The General Plan contains numerous goals, policies, concepts and strategies to protect and/or preserve biological resources. The following provides the goals and policies applicable to the proposed Project:

AG-10. The County shall balance the protection of prime, statewide importance, unique and local importance farmlands and farmlands with intensive agricultural investments with the preservation of natural habitat so that the protection of farmland can also serve to protect habitat.

AG-17 The establishment of conservation easements combining preservation of agricultural uses, habitat values, and open space on the same property should be encouraged where feasible.

CI-60. Encourage maintenance of natural roadside vegetation and landscaping with native plants which usually provide the best habitats for native wildlife.

CO-25. Support the preservation, restoration, and creation of riparian corridors, wetlands and buffer zones.

CO-58. Ensure no net loss of wetlands, riparian woodlands, and oak woodlands.

CO-59. Ensure mitigation occurs for any loss of or modification to the following types of acreage and habitat function:

- vernal pools,

- wetlands,
- riparian,
- native vegetative habitat, and
- special status species habitat.

CO-60. Mitigation should be directed to lands identified on the Open Space Vision Diagram and associated component maps (please refer to the Open Space Element).

CO-61. Mitigation should be consistent with Sacramento County-adopted habitat conservation plans.

CO-62. Permanently protect land required as mitigation.

CO-64. Consistent with overall land use policies, the County shall support and facilitate the creation and biological enhancement of large natural preserves or wildlife refuges by other government entities or by private individuals or organizations.

CO-65. Create a network of preserves linked by wildlife corridors of sufficient size to facilitate the movement of species.

CO-66. Mitigation sites shall have a monitoring and management program including an adaptive management component including an established funding mechanism. The programs shall be consistent with Habitat Conservation Plans that have been adopted or are in draft format.

CO-67. Preserves and conservation areas should have an established funding mechanism, and where needed, an acquisition strategy for its operation and management in perpetuity. This includes existing preserves such as the American River Parkway, Dry Creek Parkway, Cosumnes River Preserve and other plans in progress for riparian areas like Laguna Creek.

CO-68. Preserves shall be planned and managed to the extent feasible so as to avoid conflicts with adjacent agricultural activities (Please also refer to the Agricultural Element).

CO-69. Avoid, to the extent possible, the placement of new major infrastructure through preserves unless located along disturbed areas, such as existing roadways.

CO-70. Community Plans, Specific Plans, Master Plans and development projects shall:

- include the location, extent, proximity and diversity of existing natural habitats and special status species in order to determine potential impacts, necessary mitigation and opportunities for preservation and restoration.
- be reviewed for the potential to identify nondevelopment areas and establish preserves, mitigation banks and restore natural habitats, including those for

special status species, considering effects on vernal pools, groundwater, flooding, and proposed fill or removal of wetland habitat.

- be reviewed for applicability of protection zones identified in this Element, including the Floodplain Protection Zone, Stream Corridor Ordinance, Cosumnes River Protection Combining Zone and the Laguna Creek Combining Zone.

CO-71. Development design shall help protect natural resources by:

- Minimizing total built development in the floodplain, while designing areas of less frequent use that can support inundation to be permitted in the floodplain,
- Ensuring development adjacent to stream corridors and vernal pools provide, where physically reasonable, a public street paralleling at least one side of the corridor with vertical curbs, gutters, foot path, street lighting, and post and cable barriers to prevent vehicular entry.
- Projects adjacent to rivers and streams shall integrate amenities, such as trail connectivity, that will serve as benefits to the community and ecological function.
- Siting of wetlands near residential and commercial areas should consider appropriate measures to minimize potential for mosquito habitation.
- Development adjacent to stream corridors and vernal pools shall be designed in such a manner as to prevent unauthorized vehicular entry into protected areas.

CO-72. If land within river and stream watersheds in existing agricultural areas is developed for non-agricultural purposes, the County should actively pursue easement dedication for recreation trails within such development as a condition of approval.

CO-75. Maintain viable populations of special status species through the protection of habitat in preserves and linked with natural wildlife corridors.

CO-78. Plans for urban development and flood control shall incorporate habitat corridors linking habitat sites for special status species. (Please also refer to the Open Space Element for related policies.)

CO-83. Preserve a representative portion of vernal pool resources across their range by protecting vernal pools on various geologic landforms, vernal pools that vary in depth and size, and vernal pool complexes of varying densities; in order to maintain the ecological integrity of a vernal pool ecosystem.

CO-84. Ensure that vernal pool preserves are large enough to protect vernal pool ecosystems that provide intact watersheds and an adequate buffer, have sufficient number and extent of pools to support adequate species populations and a range of vernal pool types.

CO-85. Utilize proper vernal pool restoration techniques as approved by United States Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDF&G) and the Army Corps of Engineers (CORPS).

CO-86. Limit land uses within established preserves to activities deemed compatible with maintenance of the vernal pool resource, which may include ranching, grazing, scientific study and education.

CO-91. Discourage introductions of invasive non-native aquatic plants and animals.

CO-134. Maintain and establish a diversity of native vegetative species in Sacramento County.

CO-135. Protect the ecological integrity of California Prairie habitat.

CO-147. Increase the number of trees planted within residential lots and within new and existing parking lots.

CO-149. Trees planted within new or existing parking lots should utilize pervious cement and structured soils in a radius from the base of the tree necessary to maximize water infiltration sufficient to sustain the tree at full growth.

LU-15. Planning and development of new growth areas should be consistent with Sacramento County-adopted Habitat Conservation Plans and other efforts to preserve and protect natural resources.

OS-1. Actively plan to protect, as open space, areas of natural resource value, which may include but are not limited to wetlands preserves, riparian corridors, woodlands, and floodplains associated with riparian drainages.

OS-2. Maintain open space and natural areas that are interconnected and of sufficient size to protect biodiversity, accommodate wildlife movement and sustain ecosystems.

OS-9. Open space easements obtained and offered as mitigation shall be dedicated to the County of Sacramento, an open space agency, or an organization designated by the County to protect and manage the open space. Fee title of land may be dedicated to the County, the open space agency, or organization provided it is acceptable to the appropriate department or agency (Please also refer to Section V of the Conservation Element for related policies).

The major goal outlined in the Conservation Element of the General Plan is for the management and protection of natural resources for the use and enjoyment of present and future generations, while maintaining the long-term ecological health and balance of the environment. In addition to the Conservation Element goals and objectives, the Open Space Element further identifies two key concepts that form the basis of the goals, objectives and policies contained in the element: (1) protecting the urban edge and (2) establishing natural area linkages.

The urban edge is defined as the Urban Services Boundary (USB) in the Land Use Element. This boundary is the ultimate boundary of the urban area and is based upon natural and environmental constraints to urban growth. Protection of the urban edge allows accommodation of large scale urban development, while maintaining substantial rural, natural open space areas. Confining urban development within the USB prevents urban sprawl into the rural and open space areas of the County; protecting the urban edge protects the existing open space and rural areas of the County from being lost to development.

Open space linkages increase the ecological value of the open space lands by connecting ecosystems and wildlife habitats. This is beneficial to species higher in the food chain since mammals and birds of prey require considerable supporting territory. When the habitat is reduced to isolated patches, the long term viability of the species is threatened. Furthermore, the establishment of natural habitat corridors facilitates migration of species between breeding populations, thus enlarging the gene pool and helping to ensure genetically diverse and healthy populations of individual species. In the rural areas of the County, contiguous open space already exists, allowing for preservation of larger, high quality natural areas.

SWAINSON'S HAWK IMPACT MITIGATION FEE PROGRAM ORDINANCE

The California Department of Fish and Game requires that mitigation for foraging habitat be provided within the known foraging radius of a nesting Swainson's hawk. In 1997, in response to the need to mitigate for the loss of Swainson's hawk foraging habitat in Sacramento County, the Board of Supervisors adopted an ordinance that established a Swainson's Hawk Impact Mitigation Program (Chapter 16.130 of the Sacramento County Code). The Program has been amended several times; the latest amendment went into effect December 2009. By adopting the Program, the Board of Supervisors found that "the most effective means of mitigation for the loss of suitable Swainson's hawk foraging habitat is the direct preservation, in perpetuity, of equally suitable foraging habitat on an acre-per-acre basis based on the Project's determined acreage impact".

Under the Swainson's Hawk Impact Mitigation Program, only projects which have an impact of less than 40 acres are eligible to pay fees. Projects impacting 40 acres or more of foraging habitat must provide land acceptable to Fish and Game and the County. Land can be provided in fee title or through conservation easement. The Sacramento County Community Planning and Development Department, Planning Division (Planning Division) administers the Swainson's Hawk Impact Mitigation Program and more information on lands likely to be determined as acceptable replacement habitat can be found at their website <http://www.saccounty.net/planning/swainsons-hawk-ordinance/index.html>.

FEDERAL AND STATE REGULATORY AUTHORITY

The two major federal laws regulating impacts to wetlands and wildlife species are the Clean Water Act (Section 404 and 401) and the Endangered Species Act (Section 7, 9,

and 10). The U.S. Army Corps of Engineers (Army Corps) is responsible for administering the Clean Water Act (CWA), Section 404, with the US Environmental Protection Agency serving in an oversight capacity. The US Fish and Wildlife Service (Fish and Wildlife) is responsible for administering the Endangered Species Act, Sections 7, 9, and 10. The state Regional Water Quality Control Board is the regulatory agency that enforces Section 401 of the CWA. The three most important state laws regulating wildlife species, streams, and wetlands are the California Endangered Species Act (Section 2081), Section 1600 of the Fish and Game code, and the Porter-Cologne Water Quality Control Act. The first two are administered by the state Department of Fish and Game (Fish and Game), and the latter is administered by the Regional Water Quality Control Board (Regional Water Board).

CLEAN WATER ACT SECTION 401 AND 404 PERMIT GUIDELINES

The Army Corps regulates discharge of dredged or fill material into waters of the United States under Section 404 of the CWA. Waters of the U.S. are generally defined as “navigable waters,” which are defined as traditional navigable waters that are or were used for commerce, or may be used for interstate commerce; tributaries of navigable waters; and wetlands adjacent to navigable waters. “Discharge of fill material” is defined as the addition of fill material into waters of the U.S., including, but not limited to the following: placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; fill for intake and outfall pipes and subaqueous utility lines [33 C.F.R. §328.2(f)]. The Solid Waste Agency of Northern Cook County (SWANCC) vs. United States Army Corps of Engineers decision made by the Supreme Court in 2001 altered the types of wetlands that can be regulated by Section 404. Isolated wetlands, that is, wetlands that are not hydrologically connected to other “navigable” surface waters (or their tributaries), are not considered to be subject to Federal jurisdiction. However the SWANCC decision only prohibits Federal jurisdiction over isolated waters; State and local jurisdiction still applies.

The California State Regional Water Quality Control Board (Regional Water Board) regulates wetlands pursuant to Section 401 of the CWA. Section 401 of the CWA (33 U.S.C. 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the United States to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards.

FEDERAL ENDANGERED SPECIES ACT

Under the Federal Endangered Species Act (FESA) of 1973, the Secretary of the Interior and the Secretary of Commerce jointly have the authority to list a species as endangered or threatened. FESA defines “endangered” species as any species in danger of extinction throughout all or a significant portion of its range. A “threatened” species is any species that is likely to become an “endangered” species within the

foreseeable future throughout all or a significant portion of its range. Additional special-status species include “candidate” species and “species of concern.” “Candidate” species are those for which Fish and Wildlife has enough information on file to propose listing as endangered or threatened. “Species of concern” are those for which listing is possibly appropriate but for which Fish and Wildlife lacks sufficient information to support a listing proposal. A species that has been “delisted” is one whose population has met its recovery goal target and is no longer in jeopardy of extinction. Taking of federally listed species is prohibited under Section 9 of FESA. To “take” is defined by FESA (Section 2[19]) to mean “to harass, harm, pursue, hunt, shoot, would, kill, trap, capture, or collect, or attempt to engage in any such conduct.”

All government agencies must review their actions and determine if a “may affect” situation occurs with respect to a federally listed or proposed species. If the agency makes a “may affect” determination, it is then required to formally consult with National Oceanic and Atmospheric Administration, Fisheries (NOAA Fisheries).

For federal agencies, the consultation is conducted under Section 7 of FESA. The agency submits a Biological Assessment to Fish and Wildlife that evaluates the potential adverse effects to federally listed species. Fish and Wildlife then prepares a Biological Opinion that addresses the requirements that must be followed to avoid, minimize, and compensate for impacts to federally listed species and their habitats.

For non-federal agencies or individuals (i.e. private applicants), the consultation is conducted under Section 10 of FESA. The agency or individual submits an incidental take¹ permit application to Fish and Wildlife accompanied by a habitat conservation plan (HCP). The purpose of the habitat conservation planning process associated with the permit is to ensure there is adequate minimization and mitigation of the effects of the authorized incidental take. The purpose of the permit is to authorize the incidental take of a listed species, not to authorize the activities that result in take (USFWS 2005).

Further explanation is provided in the following notification, which was submitted to the County by Fish and Wildlife for inclusion² into all environmental documents when threatened or endangered species may be adversely affected:

As a requirement of the Department of Interior, U.S. Fish and Wildlife Service, the following notification is provided to proponents of any Project that has the potential to adversely affect threatened or endangered species:

“The applicant is hereby notified of additional conditions as stipulated by the U.S. Fish and Wildlife Service. Features of the applicant’s Project may adversely

¹ Incidental take is take of listed fish or wildlife species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by a federal agency or applicant (50 CFR 402.2).

² As a condition of the Fish and Wildlife Biological Opinion for the “Fazio Water” 101-514 water contract, the County of Sacramento has agreed to include Fish and Wildlife notification language in Initial Studies and EIRs when endangered and threatened species may be adversely affected.

affect federally listed threatened or endangered species. An applicant must go through one of two processes to obtain authorization to take federally listed species incidental to completing his or her Project. One of the processes is formal consultation. When the authorization or funding of a Federal agency is an aspect of a Project that may affect federally listed species, Section 7 of the Endangered Species Act requires the Federal agency to formally consult with the Service.

Formal consultation is concluded when the Service issues a biological opinion to the Federal agency. The biological opinion includes terms and conditions to minimize the effect of take on listed species. The Federal agency must make the terms and conditions of the biological opinion into binding conditions of its own authorization to the Project applicant. An example of this process is when the U.S. Army Corps of Engineers consults with the Service prior to issuing a permit to fill jurisdictional waters under Section 404 of the Clean Water Act. The terms and conditions of the biological opinion become binding on the Project applicant through the Corps' 404 authorization. When no Federal funding or authorization is involved in a Project, an applicant must prepare a habitat conservation plan and obtain a permit directly from the Service in accordance with Section 10(a)(1)(B) of the Act. For additional information on these processes please contact the Endangered Species Division of the U.S. Fish and Wildlife Service's Sacramento Fish and Wildlife Office at (916) 414-6600".

CALIFORNIA ENDANGERED SPECIES ACT (CESA)

The California Endangered Species Act (established in Fish and Game Code §2050) generally parallels the main provisions of the FESA and is administered by Fish and Game for most terrestrial species, with assistance from the NOAA Fisheries (formerly known as the National Marine Fisheries Services, or NMFS) for most freshwater fishery species. The CESA prohibits the taking of state listed species except as otherwise provided by state law. Unlike the federal ESA, the CESA extends the take prohibitions to not only listed species but also for species petitioned for listing. "Take" is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Section 2081 of the CESA identifies the following criteria that must be met for Fish and Game to authorize the take of endangered, threatened or candidate species:

- The taking of a listed or candidate species can be minimized and fully mitigated.
- The take would not jeopardize the continued existence of the species.
- Authorization for take must be based on the best scientific material that is reasonably available, and that due consideration will be given to the species' ability to survive and reproduce.

*CALIFORNIA FISH AND GAME CODE***ANIMALS AND PLANTS**

Section 3503 makes it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by the Fish and Game Code or any regulation made pursuant thereto. Section 3503.5 make it unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by the Fish and Game Code or any regulation adopted pursuant thereto. Sections 1908, 3511, 4700, 5050 state that Fully Protected plant and animals or parts thereof may not be taken or possessed at any time.

SURFACE WATERS

Fish and Game Code Section 1602 requires any person, state or local governmental agency, or public utility to notify Fish and Game before beginning any activity that will do one or more of the following: 1) substantially obstruct or divert the natural flow of a river, stream, or lake; 2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or 3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake. Fish and Game Code Section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the state.

Notification is generally required for any project that will take place in the vicinity of a river, stream, or lake. Fish and Game will determine whether a Lake or Streambed Alteration Agreement is required for the activity. An agreement will be required if the activity could substantially adversely affect an existing fish and wildlife resource. If an agreement is required, it will be prepared by Fish and Game in coordination with the applicant. The agreement will include measures, as necessary, to protect fish and wildlife resources while conducting the project.

MIGRATORY BIRD TREATY ACT

The Migratory Bird Treaty Act (MBTA) of 1916 established federal responsibilities for the protection of nearly all species of birds, their eggs, and nests. Section 16 U.S.C. 703–712 of the Act states “unless and except as permitted by regulations, it shall be unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill” a migratory bird. A migratory bird is any species or family of birds that live, reproduce or migrate within or across international borders at some point during their annual life cycle. Currently, there are 836 migratory birds protected nationwide by the MBTA, of which 58 are legal to hunt.

PORTER-COLOGNE WATER QUALITY CONTROL ACT

This Act (State Water Code Section 13020) mandates that all the waters of the state be protected, that activities and factors affecting water quality be regulated to attain the

highest water quality “within reason”, and that the state be prepared to exercise its power and jurisdiction to protect water quality from degradation. Waters of the state are defined as any surface or groundwater within the boundaries of the state. The Regional Water Board issues permits, with varying conditions, to allow the discharge of dredge or fill material or a waiver of waste discharge into waters of the state **(the Project would not qualify for a waiver). Any “isolated” waters not subject to the Clean Water Act as a result of the SWANCC decision are still subject to the Porter-Cologne Water Quality Control Act, and still require mitigation pursuant to the state’s no net-loss policy. In such a case, fill of isolated wetlands would be permitted through Waste Discharge Requirements rather than a Section 401 Water Quality Certification.**

FEDERAL AVIATION ADMINISTRATION REGULATIONS

The Federal Aviation Administration (FAA) is the federal agency responsible for developing and enforcing air transportation safety regulations. Many of these regulations are codified in the Federal Aviation Regulations (FARs). The FAA also publishes a series of guidelines for airport operators to follow called Advisory Circulars (ACs). Advisory Circulars in the 150 series deal with airport safety issues, including wildlife hazards. In addition to FARs and ACs, the FAA periodically issues Certalerts for internal distribution and to provide recommendations on specific issues for inspectors and airport personnel. All of the above-mentioned regulations, Advisory Circulars, and Certalerts are frequently changed or updated, and their current status should be verified on a regular basis. This may be accomplished by contacting the FAA directly or by visiting their website at www.faa.gov/arp/hazard.htm or www.faa.gov/faadocs.htm for the most current revision.

On August 28, 2007, the Federal Aviation Administration (FAA) released a revised Advisory Circular (AC) for Hazardous Wildlife Attractants on or near Airports (AC 150/5200-33B), which among other things addresses stormwater detention facilities as potential hazardous wildlife attractants. The AC states the following:

New storm water management facilities.

The FAA strongly recommends that off-airport storm water management systems located within the separations identified in Sections 1-2 through 1-4 be designed and operated so as not to create above-ground standing water. Stormwater detention ponds should be designed, engineered, constructed, and maintained for a maximum 48-hour detention period after the design storm and remain completely dry between storms. To facilitate the control of hazardous wildlife, the FAA recommends the use of steep-sided, rip-rap lined, narrow, linearly shaped water detention basins. When it is not possible to place these ponds away from an airport’s AOA, airport operators should use physical barriers, such as bird balls, wire grids, pillows, or netting, to prevent access of hazardous wildlife to open water and minimize aircraft-wildlife interactions. When physical barriers are used, airport operators must evaluate their use and ensure they will not

adversely affect water rescue. Before installing any physical barriers over detention ponds on Part 139 airports, airport operators must get approval from the appropriate FAA Regional Airports Division Office. All vegetation in or around detention basins that provide food or cover for hazardous wildlife should be eliminated. If soil conditions and other requirements allow, the FAA encourages the use of underground storm water infiltration systems, such as French drains or buried rock fields, because they are less attractive to wildlife.

According to the FAA, all stormwater facilities must drain within 48 hours of the design storm if they are located within 10,000 feet of all airports' operations areas. Furthermore, for a five mile radius (nearly 20 square miles) the AC discourages hazardous wildlife attractants and therefore detention basins that do not drain within 48 hours. In a January 17, 2008 comment letter on the Natomas Levee Improvement project, the FAA informed the Army Corps that,

FAA Advisory Circular 150/5200-33 recommends a separation distance of 10,000 feet between aircraft movement areas such as runways and taxiways, aircraft loading ramps, aircraft parking areas, and any wildlife attractant at airports normally serving turbine-powered (jet) aircraft. FAA Advisory Circular 150/5200-33 also recommends a distance of 5 statute miles between approach and departure airspace and any wildlife attractant which may cause wildlife movements into or across the approach or departure airspace. An additional resource providing information regarding aircraft-wildlife strike hazards is *Wildlife Hazard Management at Airports: A Manual for Airport Personnel (2005)* available on-line from the University of Nebraska, Lincoln at http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1127&context=icwdm_usdanwrc, or by searching the World Wide Web.

The 10,000 foot separation is considered a critical area where there should be no hazardous wildlife attractants. Out to five miles, the language is less absolute and, according to the Sacramento County Airport System, focuses on how multiple attractant sources may cause wildlife to move across approach and departure airspace. For example, a corn field may in itself not provide a hazard if located 4.5 miles out and not in line with a runway but if a source of water was located such that it caused wildlife to move from the corn field across an approach departure zone to get to the water, the AC advises against the land use.

The AC differentiates between detention ponds and retention ponds as follows:

Detention ponds. Storm water management ponds that hold storm water for short periods of time, a few hours to a few days.

Retention ponds. Storm water management ponds that hold water for several months.

Within Sacramento County, development is required to comply with the Stormwater Quality Design Manual for the Sacramento and South Placer Regions -

<http://www.sactostormwater.org/SSQP/development.asp>. As part of the development process, developers are commonly required to provide stormwater detention facilities. These facilities serve to collect runoff and provide treatment for water quality purposes and additionally they buffer peak stream flows by holding water and discharging after peak events. This detention of water and temporary storm flow storage can conflict with the AC if water is held over 48 hours and the facility is located within five miles of an airport.

SOUTH SACRAMENTO COUNTY HABITAT CONSERVATION PLAN

The anticipated South Sacramento County Habitat Conservation Plan (SSHCP) is a regional approach to conserving species and addressing issues related to urban development, habitat conservation, open space preservation, and agricultural protection. To develop the SSHCP, the County is partnering with Rancho Cordova, Elk Grove, Galt, the Sacramento Regional County Sanitation District, the Connector Joint Powers Authority and the Sacramento County Water Agency. The intent of the anticipated SSHCP is to minimize regulatory hurdles and streamline the permitting process for projects that engage in development-related activities inside the urban development area or UDA. The UDA corresponds to land within the County's Urban Services Boundary (USB), and to land within the city limits of Rancho Cordova, Elk Grove and Galt, and Galt's adopted sphere of influence. As currently envisioned, 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. The intent of the SSHCP is to provide a mechanism by which the County and its partners could be authorized to issue permits that allow landowners to engage in specific development activities (covered activities) that could result in the incidental take of listed species (covered species). The intent is that the 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 anticipated SSHCP.

SIGNIFICANCE CRITERIA

The significance of an environmental impact cannot always be determined through use of a specific quantifiable threshold. CEQA Guidelines Section 15064(b) affirms this by the statement: "An ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting." Significance of an impact to the biological resources discussed in this chapter rely on the policies, codes, and regulations described in the Regulatory Setting section, as well as the following CEQA Sections:

Section 15065:

- (a) A lead agency shall find that a project may have a significant effect on the environment and thereby require an EIR to be prepared for the project where there

is substantial evidence, in light of the whole record, that any of the following conditions may occur:

- (1) The project has the potential to: substantially degrade the quality of the environment; 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; substantially reduce the number or restrict the range of an endangered, rare or threatened species; or eliminate important examples of the major periods of California history or prehistory.

Section 15382:

"Significant effect on the environment" means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.

Standards for determining thresholds of significance were established based on the State CEQA Guidelines and professional standards. Impacts to biological resources were considered significant if the project would result in the following:

1. Have a substantial adverse effect, either directly or through habitat modification, on any species identified as a special-status-species in local or regional regulatory guidance, plans, policies, or regulations or by Fish and Game or Fish and Wildlife;
2. Have a substantial adverse effect on protected surface waters, as defined by the Army Corps of Engineers Wetland Delineation Manual (1987 ed.) and/or as defined by Sections 401 and 404 of the Clean Water Act (including, but not limited to, seeps, vernal pools, swales, drainages, and perennial waterways) through direct removal, filling, hydrological interruption, or other means;
3. 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 native wildlife nursery sites;
4. Conflict with any local policies or ordinances protecting biological resources; or
5. Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or approved local, regional, or state habitat conservation plan.

Note that there are no approved habitat conservation plans applicable to the Project area, and thus criteria five does not apply.

METHODOLOGY

The methodologies used to determine significance rely on documents published by or endorsed by regulatory agencies. The applicable documents and methods are cited and described in the applicable impact discussions below. In absence of such published documents, the analyses rely on the general definitions of significance.

IMPACTS AND ANALYSIS

OVERALL PROJECT IMPACT AREAS AND AVOIDED AREAS

Out of the 2,669-acre Project site, approximately 493 acres will be within areas designated as Avoided Area (Plate BR-1) while the remaining 2,175 acres will be designated for urban uses (residential, commercial, university/college campus center, etc), recreation, and agriculture (Plate BR-2). Those areas to be avoided contain grasslands with large complexes of vernal pools, wetland swales, and seasonal wetlands.

Of the approximately 493 acres that will be avoided, the largest contiguous portion is located near the western boundary and is approximately 298 acres. Two multi-purpose trails will be constructed through this primary avoided area. The trails will be elevated over swales and other linear drainages. There are two avoidance areas adjacent to the primary area, separated from it by internal roads. Together these areas are approximately 84 acres. In the center of the development is an intermittent drainage extending lineally from north to south totaling approximately 94 acres of avoided land. This area is divided by the roadway and pedestrian trail network. Some of these crossings will be overpasses which avoid wetlands. This area is buffered with low-intensity recreational land (Recreation 2), increasing the distance between the Avoidance Area and residential or commercial development. The final avoidance area is approximately 18 acres located on the southeast corner of the university/college campus center.

Approximately 194 acres of the land outside the USB is proposed to be designated as Agriculture. Approximately 49 acres of this Agriculture land is within a Federal Emergency Management Agency 100-year floodplain. The proposed Cordova Hills Special Planning Area (SPA) includes a list of facilities that would be permissible within the Agriculture designation, including a sports park, corporation yard, community garden, and solar facility. The applicant has assumed that several of the areas designated Agriculture which will be outside of the USB will not be impacted. These are the lands on the eastern Project boundary and the area on the southeastern side of the property. If a conservation easement is placed over these areas, then impacts will be avoided and the total urbanized footprint shrinks to 2,120 acres.

Plate BR-1: Proposed Avoided Areas (Project Roadways Shown)

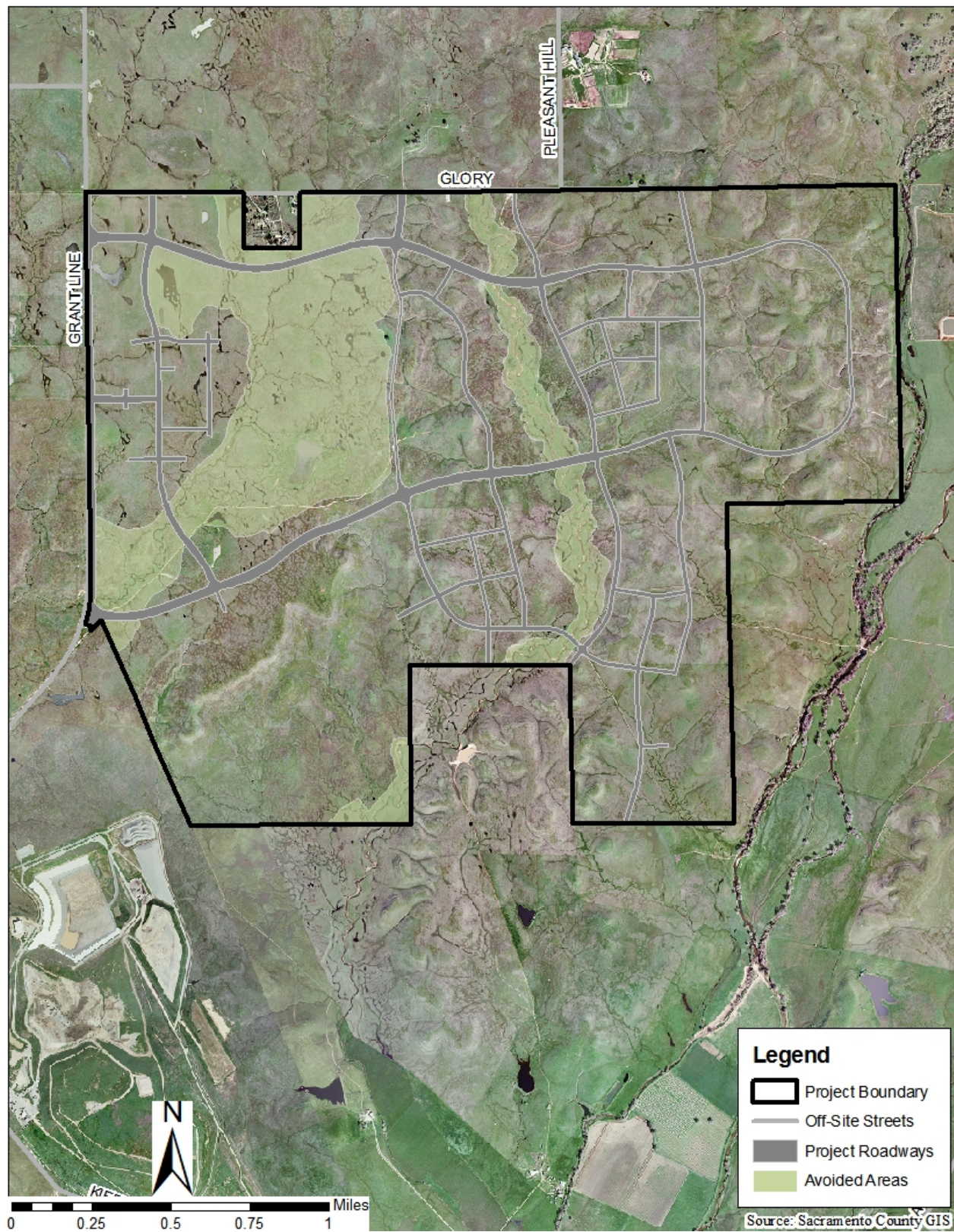
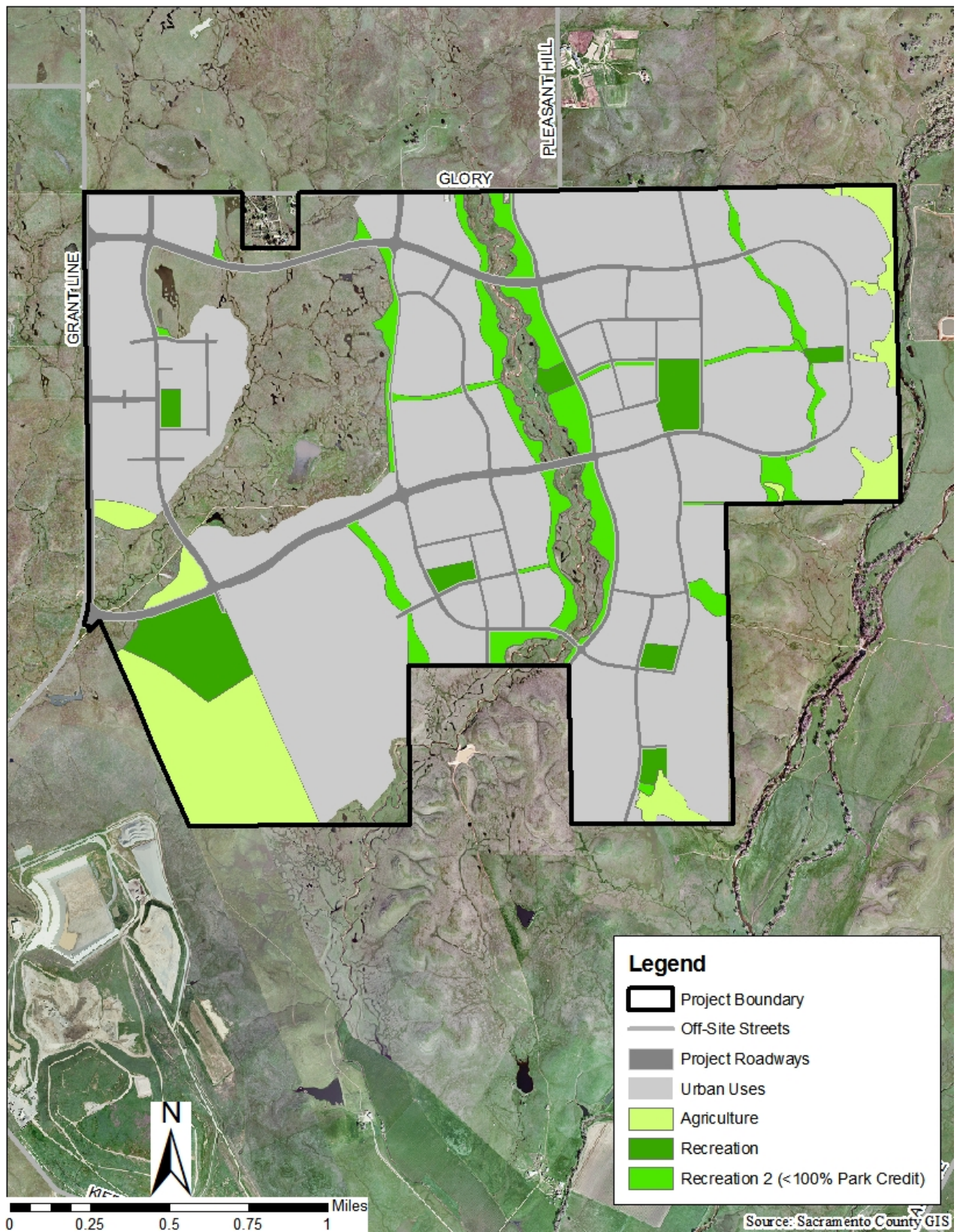


Plate BR-2: Proposed Urban, Recreation, and Agriculture Areas



WETLANDS AND SURFACE WATERS

Wetland delineations were prepared for the proposed Project by ECORP Consulting, Inc (see Appendix BR-1). Due to the changes in the Project boundaries during the planning of the development, there are several delineations that cover different portions of the Project site. **Note that in the case of the Project site, all of the delineated waters are both Waters of the State and Waters of the United States, and are thus subject to both federal and state regulation.** As shown in Plate BR-3, there are three distinct properties: Cordova Hills (Conwy), Grant Line Mesa (bufferlands), and Solitu. The wetland delineation prepared for the Conwy property identified 68.44 acres of jurisdictional wetlands. The delineation was verified by the Army Corps on March 6, 2009. The wetland delineations prepared for the Grant Line Mesa and Solitu properties identified 6.24 and 14.43 acres of jurisdictional wetlands respectively. The delineations were verified by the Army Corps on September 30, 2009. In total, there are approximately 89.1 acres of wetland resources on the Project site (Plate BR-3). Of that, the applicant has estimated that approximately 39.6 acres will be disturbed or removed to accommodate development (Plate BR-4 and Plate BR-5). The wetland resources provide habitat for several endangered or threatened species that are discussed later in this chapter. Wetland resources on the Project site vary from vernal pools to seasonal wetlands, swales, ephemeral drainages, and stock ponds. Table BR-1 identifies the classification and acreage of wetlands present on the Project site and Table BR-2 identifies the impacts.

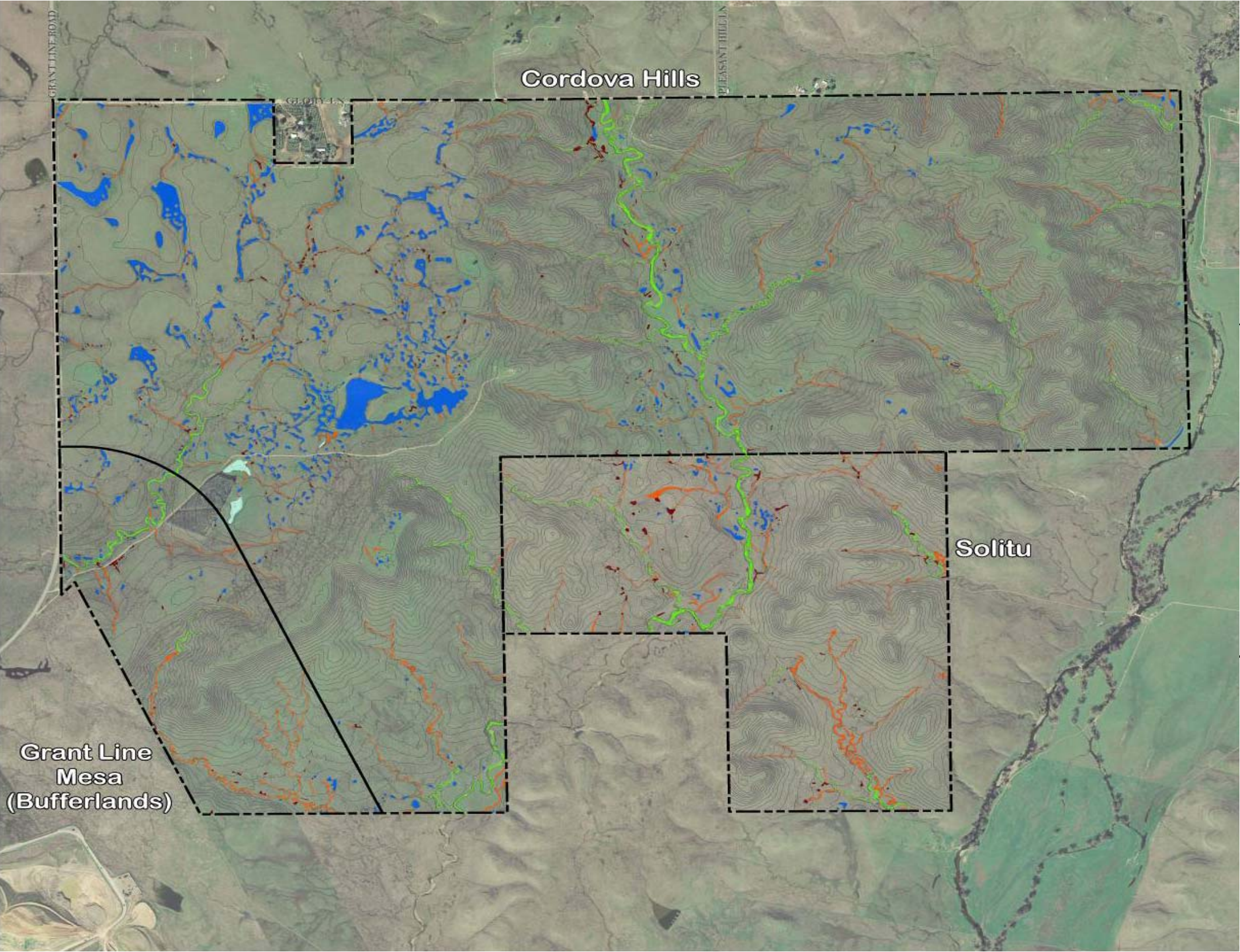
Table BR-1: Wetland Resources

Classification	Acreage
Vernal Pool	47.51
Seasonal Wetland	4.77
Seasonal Wetland Swale	18.22
Intermittent Drainage	16.90
Seep, Stock Pond, Creek	1.71
Total	89.11

Table BR-2: Applicant Estimate of Impacts to Wetland Resources

Classification	Direct Impacts	Temporary Impacts	Total
Vernal Pool	15.644	--	15.644
Seasonal Wetland	3.059	--	3.059
Seasonal Wetland Swale	13.866	--	13.866
Intermittent Drainage	6.361	0.159	6.520
Seep, Stock Pond, Creek	0.700	--	0.700
Total	39.630	0.159	39.646

Plate BR-3: Wetland Delineation



CORDOVA HILLS (CONWY) ³

WATERS OF THE U.S. ACREAGE ¹	
CLASSIFICATION	EXISTING ACREAGE
WETLANDS:	
Vernal Pool	44.499
Seasonal Wetland	2.737
Seasonal Wetland Swale	9.031
OTHER WATERS:	
Intermittent Drainage	10.477
Creek	0.174
Stock Pond	1.522
TOTAL:	68.440

GRANT LINE MESA (BUFFERLANDS) ⁴

WATERS OF THE U.S. ACREAGE ¹	
CLASSIFICATION	EXISTING ACREAGE
WETLANDS:	
Vernal Pool	1.469
Seasonal Wetland	0.477
Seasonal Wetland Swale	3.004
OTHER WATERS:	
Intermittent Drainage	1.286
TOTAL:	6.236

SOLITU ⁵

WATERS OF THE U.S. ACREAGE ¹	
CLASSIFICATION	EXISTING ACREAGE
WETLANDS:	
Vernal Pool	1.541
Seasonal Wetland	1.557
Seasonal Wetland Swale	6.184
Seep	0.012
OTHER WATERS:	
Intermittent Drainage	5.137
TOTAL:	14.431

Plate BR-4: Applicant Estimate of Wetland Avoidance and Impacts

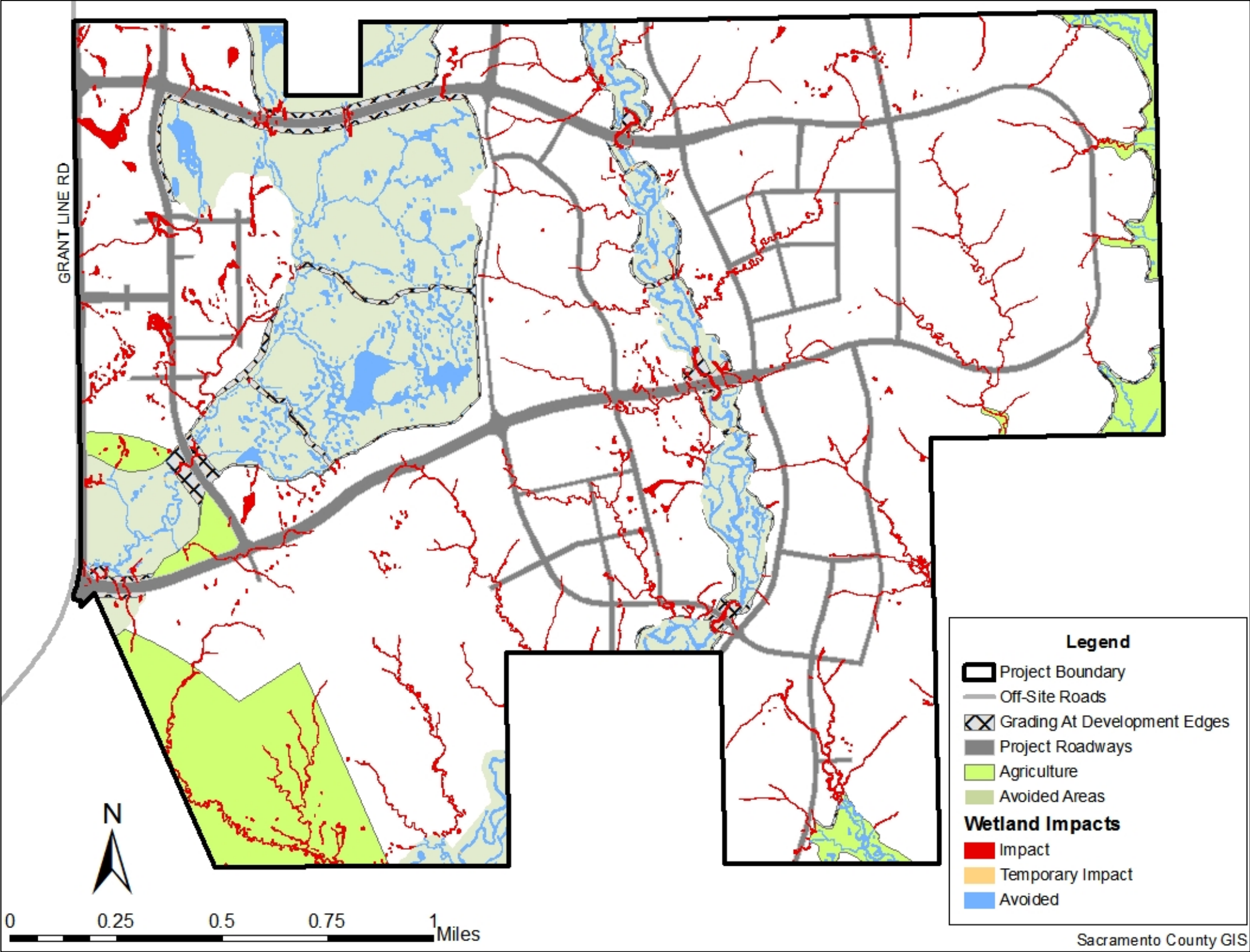
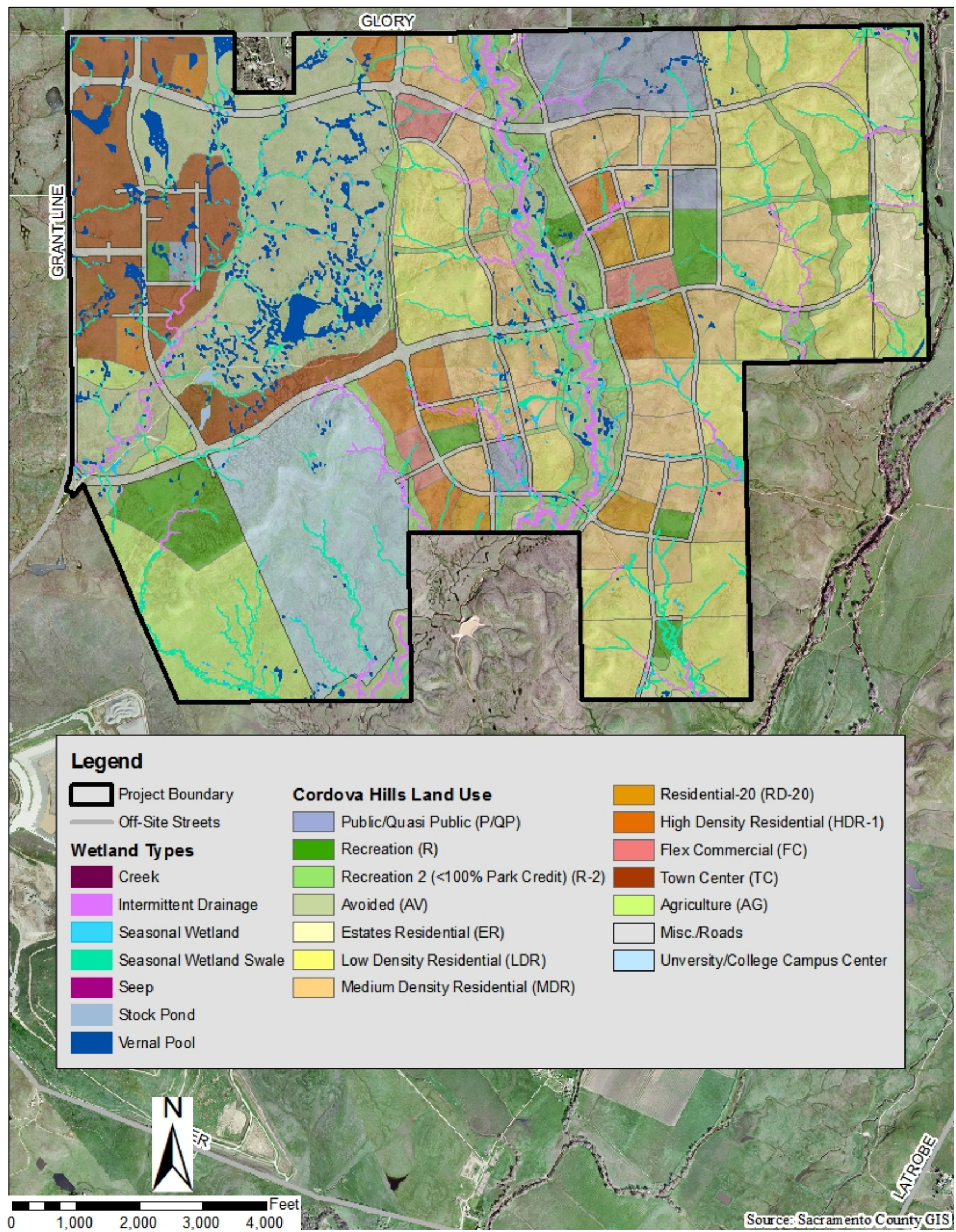


Plate BR-5: Wetlands and Project Land Uses



There are two general types of impact to habitats: direct and indirect. An indirect impact occurs when activities near the wetland cause secondary effects, such as hydrologic changes which reduce the amount of water flowing to the wetland, or drift of pesticides and other pollutants into the wetland. For wetlands which may contain special status species, the rule of thumb for total avoidance of both direct and indirect impacts requires that construction and other activities occur at least 250 feet from the wetland³. For surface waters that do not contain special status species, Environmental Review has established a buffer of 50 feet as a rule of thumb. Note that these rules may be supplanted by site-specific analyses of hydrologic and other conditions. A direct impact occurs when a wetland is destroyed by construction activities within the wetland margin; however, the programmatic consultation for vernal pool resources states that if any part of a vernal pool is destroyed, then the entire pool is directly affected. This statement is applied to all other non-linear wetlands for this analysis. For linear wetlands, this analysis considers all affected areas within 50 feet of the filled area to be directly affected (based on the Environmental Review wetland buffer).

As illustrated by the avoidance plan and land use plan (Plate BR-4 and Plate BR-5), two land use categories are located in areas where on-site wetlands will be avoided. The first is Avoided Area, in which the proposed SPA allows only trails, outdoor classrooms, and interpretive signage. The second land use is agriculturally zoned land, in which the proposed SPA allows a variety of uses such as park and ride lots, detention basins, solar farms, corporation yards, community gardens, and other developed uses. Approximately 2.7 acres of wetlands are shown as avoided within some of the agriculturally designated areas primarily due to the presence of a flood zone. The strategic placement of the Avoided Area encompasses the greatest concentrations of wetland features (including lineal features) on the Project site.

The overarching goals of General Plan Policies CO-64 and -65, OS-1 and -2 are to preserve large, high quality, contiguous pieces of land which support habitat for a large range of plant and animal species. Project design includes large areas of avoided open space that incorporates several types of wetland resources (varying vernal pools, seasonal drainages and associated upland) and species. Project design appears to meet the intent of the General Plan policies.

DIRECT IMPACTS

According to the plan as depicted in Plate BR-4 and as tabulated Table BR-2, the Project will directly impact 39.63 acres of wetland resources, which is 44 percent of the wetlands on the Project site. Conversely, 49.48 acres of wetland resources will be avoided. The wetland delineations have been verified by the Army Corps and an

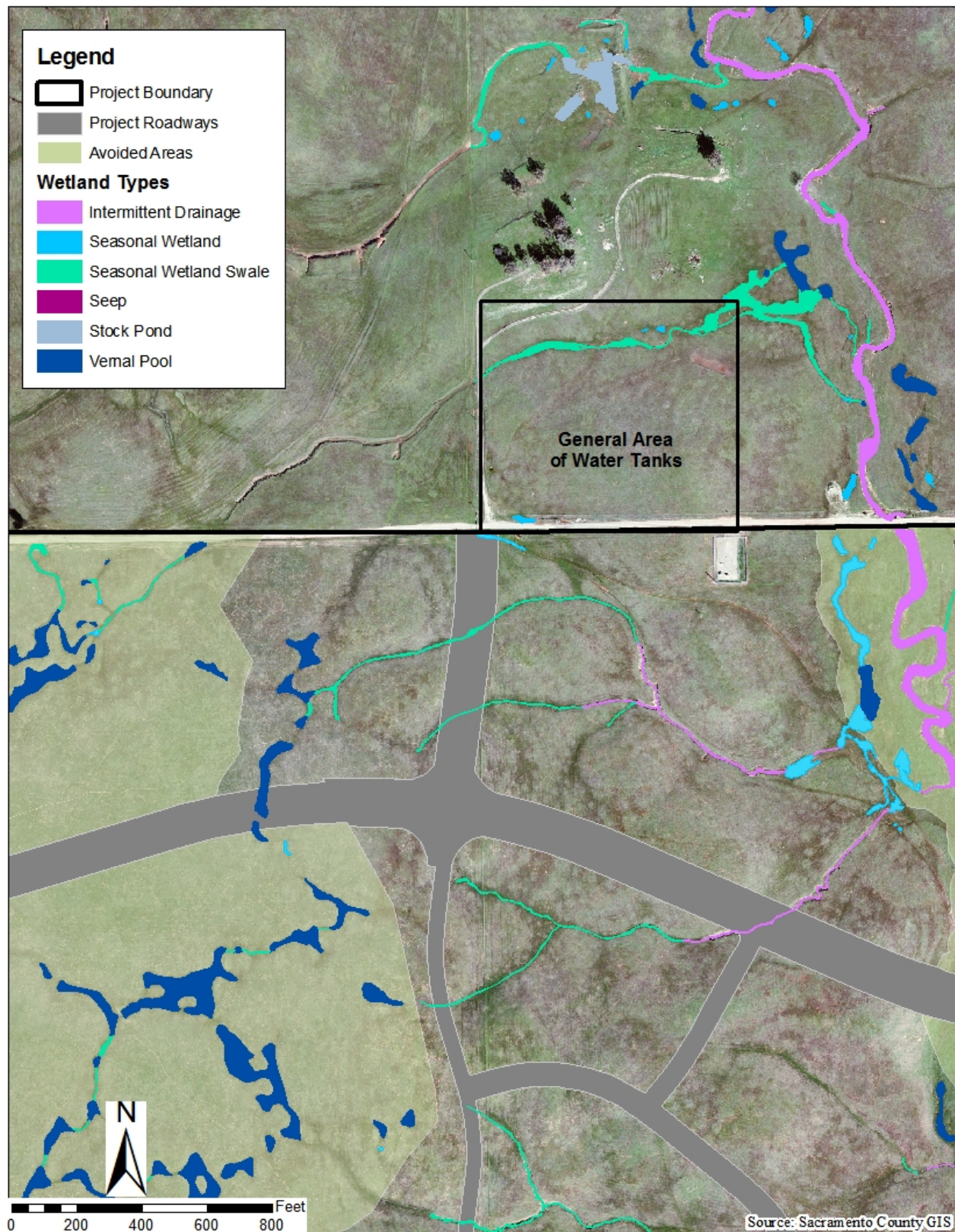
³ Programmatic Formal Endangered Species Act Consultation on Issuance of 404 Permits for Projects with Relatively Small Effects on Listed Vernal Pool Crustaceans Within the Jurisdiction of the Sacramento Field Office, California (February 28, 1996)

application for a Section 404 permit for wetland loss has been submitted, but a permit has not yet been issued. Thus, the amount of wetland area that will require mitigation has not been determined by Army Corps. The applicant has prepared a Wetland Avoidance and Impact Plan exhibit (Impact exhibit), which has been summarized in Plate BR-4. Review of the Impact exhibit indicates that the applicant's analysis properly shows that if any part of a non-linear wetland is destroyed, then the entire pool is directly affected. Linear wetlands, on the other hand, are only shown to be directly impacted where the portion will be destroyed. Further work to supplement the applicant's analysis was performed by Environmental Review, to determine how much additional non-linear wetland would be impacted by applying the 50-foot buffer rule. The analysis found that an additional 0.33 acres of intermittent drainage would be impacted, and an additional 1.11 acres of seasonal wetland swale would be impacted. This brings the total direct impacts to 41.04 acres, and total wetland loss to 46 percent.

In addition to the above, the Project may also involve off-site wetland impacts associated with the construction of water tanks and other utilities. Plate BR-6 depicts the general location of the proposed water tanks, and the wetlands delineated within that area. The area includes three seasonal wetlands of 0.001 acres, 0.006 acres, and 0.019 acres and approximately 0.3 acres of a seasonal wetland swale. The tanks will not be designed until later Project phases, when the infrastructure is needed, so although at this time it is conservatively assumed that all of the wetlands described could be lost, it is likely that this overestimates the impact; the applicant has stated that total avoidance is intended, which is reflected by their current Section 404 permit application. Nonetheless, the conservative estimate brings total impacts to 41.37 acres (46%).

According to Army Corps mitigation guidelines and County mitigation requirements, minimum mitigation requirements are 1:1 (no net loss). Based on the minimum requirements, the Project applicant would have to mitigate for direct impacts to 41.37 acres of wetlands. It should be noted that species habitat mitigation (described later in this chapter) generally requires greater mitigation ratios. If wetland mitigation is pursued through purchasing credits at agency approved mitigation banks or through land dedication outside of the project area, suitable land is first sought within the same watershed that is disturbed, thereby preserving a portion of the micro-ecosystem of the watershed. Some areas to the south of the Project site are already under conservation easements to mitigate landfill activities. However, north of the Project site are extensions of the same drainage swale features and preservation of those features would connect and protect a greater, more contiguous area.

Plate BR-6: Water Tank Wetland Impacts



It should also be noted that Fish and Wildlife has published the “Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon” (Recovery Plan), the purpose of which is to achieve self-sustaining populations of many species which rely on vernal pools. The Recovery Plan identifies “core areas”, which are areas that are vital to achieve the goals of the plan. Core areas are ranked 1, 2, or 3 depending on their overall priority for recovery, with rank 1 being highest priority. The majority of the Project site lies within the Mather core area (Plate BR-7), which is ranked 1. Fish and Wildlife has indicated in comments at the scoping meeting for the Project that preservation of vernal pools in the Mather core area is of high priority, and that any mitigation required for the Project should take place within the core area.

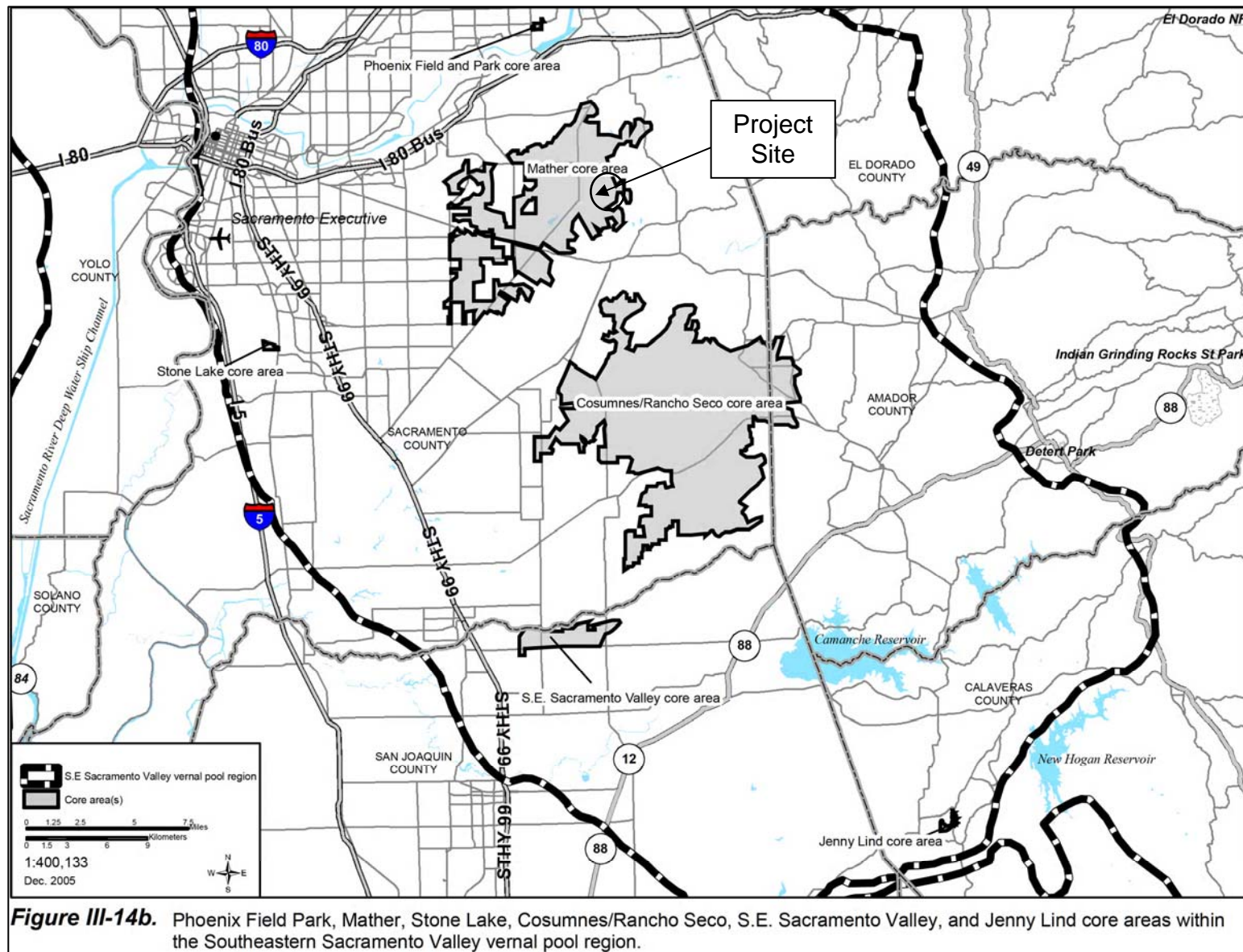
INDIRECT IMPACTS

Avoided areas may not fully protect wetland features if not designed correctly. Among the possible indirect impacts are alterations to existing watersheds that cause a reduction in water flow to the wetland areas. In order to assess potential hydrologic impacts, a watershed analysis for existing wetlands was prepared by ECORP Consulting, Inc in 2011 (incorporated by reference and available for review at the Division of Environmental Review and Assessment, 827 7th Street, Rm. 220, Sacramento, CA). This analysis is helpful to determine if the proposed avoided areas are sufficient to support the wetland features contained within them. Other indirect impacts relate to effects on the species that use the habitat, and thus those impacts are discussed in the Special Status Species section.

The analysis used a LIDAR (light imaging detecting and ranging) based model to develop topographic contours of the Project site. The topographic contours were mapped and the wetland delineation was overlaid. The individual watersheds of the features were then defined and mapped. Seasonal wetlands and their respective watersheds were evaluated to determine the appropriate watershed size to sustain normal hydrologic function. Statistical regression analysis⁴ yielded a linear relationship between the size of a wetland and the corresponding size of the watershed. The modeling concluded that for each acre of seasonal wetland and vernal pool, 1.299 and 1.405 acres, respectively, of upland watershed is required to sustain normal hydrologic function. The impact analysis applied these ratios to wetland features within the avoided areas and determined that two vernal pools would not have the minimum watershed necessary to maintain normal hydrologic function. These two wetlands were included in the assessment of direct impacts. According to the watershed analysis, two vernal pools may be impacted; however, the proposed avoided areas provide adequate watershed area to sustain normal hydrologic functions for the majority of avoided wetland features.

⁴ Regression analysis is used to predict the value of one variable (dependent) based on the value of one or more (independent) variables. For this analysis the size of a wetland (independent variable) is used to predict the size of corresponding micro-watersheds (dependent variable).

Plate BR-7: Recovery Plan Core Areas in Project Vicinity



CONCLUSION OF DIRECT AND INDIRECT IMPACTS

Prior to direct impacts to wetland features the Project applicant will be required to obtain all required permits from the Army Corps, Fish and Wildlife, Fish and Game, and the Regional Water Board. Permits may be obtained through individual permits from the agencies, or if the County adopts the SSHCP and the Project is a covered activity, it would be subject to all requirements of that plan. At the time of writing this document, the small portion of the Project outside of the USB is not in the anticipated Urban Development Area of the SSHCP; therefore, even if the SSHCP were adopted, development activities within this area may still require individual permits from the various agencies. Based on the analysis herein, the County will require 1:1 mitigation for up to 41.37 acres of direct wetland impacts.

Future development within the SPA could include amendments to the SPA which would modify the Avoided Area boundaries. This could result in additional incremental losses of needed uplands and/or wetlands, increasing the severity of what is already a significant impact in an area noted as vital to the recovery of vernal pool resources. For this reason, mitigation is also included which would require the establishment of a permanent conservation easement over all areas designated as Avoided.

Impacts to wetland resources are significant without mitigation. While the Project applicant is proposing to avoid a considerable number of vernal pools, swales and seasonal wetlands, the Project nonetheless will result in the loss of a considerable amount of wetlands – 41.37 total wetland acres, which is approximately 46% of the total wetlands on the site, of which 15.6 acres are vernal pools (which is 33% of the vernal pools on the site). Impacted wetlands will be off-set through permitting replacement credits and requirements; however, the loss of 46% of wetlands located on the Project site, especially given that this is in a rank-1 recovery area, is still considered significant after mitigation. Impacts to wetlands are considered *significant and unavoidable*.

MITIGATION MEASURES:

BR-1. To compensate for the permanent loss of wetlands, the applicant shall perform one or a combination of the following prior to issuance of building permits, **and shall also obtain all applicable permits from the Army Corps of Engineers, the U.S. Fish and Wildlife Service, the Central Valley Regional Water Quality Control Board, and the California Department of Fish and Game:**

- A. Where a Section 404 Permit has been issued by the Army Corps of Engineers, or an application has been made to obtain a Section 404 Permit, the Mitigation and Management Plan required by that permit or proposed to satisfy the requirements of the Corps for granting a permit may be submitted for purposes of achieving a no net-loss of wetlands. The required Plan shall be submitted to the Sacramento County Environmental Coordinator, U.S. Army Corps of Engineers, and U.S. Fish and Wildlife Service for approval prior to its implementation.

- B. If regulatory permitting processes result in less than a 1:1 compensation ratio for loss of wetlands, the Project applicant shall demonstrate that the wetlands which went unmitigated/uncompensated as a result of permitting have been mitigated through other means. Acceptable methods include payment into a mitigation bank or protection of off-site wetlands through the establishment of a permanent conservation easement, subject to the approval of the Environmental Coordinator.
- C. The Project applicant may participate in the South Sacramento Habitat Conservation Plan if it is adopted, and if the Project area and activities are covered. The applicant shall prepare Project plans in accordance with that Plan and any and all fees or land dedications shall be completed prior to construction.

BR-2. Prior to issuance of building permits, all areas designated within the SPA as Avoided shall be placed within a permanent conservation easement, which shall be reviewed and approved by the Environmental Coordinator. At a minimum, the permanent conservation easements must cover all areas which are required to be preserved as part of the Section 404 and Section 401 wetland permits.

SPECIAL STATUS SPECIES

A "special status" species is one which has been identified as having relative scarcity and/or declining populations. Special status species include those formally listed as threatened or endangered, those proposed for formal listing, candidates for federal listing, and those classified as species of special concern. Also included are those species considered to be "fully protected" by Fish and Game, those granted "special animal" status for tracking and monitoring purposes, and those plant species considered to be rare, threatened, or endangered in California by the California Native Plant Society (CNPS).

There are multiple status designations applied to animal and plant species; the relevant definitions are provided below⁵:

Endangered Species: Any species which is in danger of extinction throughout all or a significant portion of its range.

Threatened Species: Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

⁵ Source: California and Federal Endangered Species Acts, <http://www.dfg.ca.gov/wildlife/nongame/ssc/>, http://www.dfg.ca.gov/wildlife/nongame/t_e_spp/fully_pro.html, and <http://www.cnps.org/cnps/rareplants/ranking.php>.

Species of Concern: Any species with declining population levels, limited ranges, and/or other factors that make them vulnerable to extinction and may ultimately qualify the species for threatened or endangered status.

Fully Protected: The classification of Fully Protected was California's initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction. Most have subsequently been defined as endangered or threatened, but there are exceptions.

Special Animals: A general term that refers to all of the taxa that Fish and Game is interested in tracking, regardless of their legal or protection status. Though the species themselves have not declined to the extent that they are listed by one of the classifications noted above (endangered, etc), such species are closely associated with a habitat that is declining in California.

List 1B Plants: Plants that are rare throughout their range, and have declined significantly over the last century. The majority of plants on this list are endemic to California.

List 2 Plants: The same as List 1B plants, except that List 2 plants are common outside of California.

Relevant species for analysis were identified based on species information gathered from the Fish and Wildlife Sacramento office for federally listed species, from Fish and Game, and from CNPS. A Fish and Game California Natural Diversity Database (CNDDDB 2011) search was also conducted. For the initial CNDDDB search the study area was all lands within ten miles of the Project boundary, while the Fish and Wildlife list was based on species present within the Buffalo Creek 7.5-minute United States Geological Survey quadrangle. For plants, the analyses below rely on rare plant surveys performed by ECORP Consulting, Inc (Appendix BR-3).

Table BR-3 reports the species identified in the species searches and rare plant surveys. The table reports the likelihood of occurrence based on habitat presence either on the site or in proximity of the site, survey results (if any), and nearby recorded species occurrences. Habitat proximity is based on published buffers established by a regulatory agency. For instance, guidance for the Swainson's hawk establishes a nesting buffer of ½-mile, and includes mitigation requirements for construction activities in that range. Note that some species are listed for loss of foraging habitat, while others may be listed for loss of breeding habitat. If the species is listed for loss of a particular habitat, it is so reported in Table BR-3 and the likelihood of occurrence will be based specifically on that habitat type. Likelihood of occurrence is rated as Not Present, Low Potential, Moderate Potential, High Potential, or Present, which are defined as:

Not Present: A survey was performed by a qualified biologist, and the species was not found or habitat is absent both on the site and within one mile of the site.

Low Potential: Absence cannot be definitively stated because no surveys were performed, but habitat is near-absent or marginal.

Moderate Potential: Habitat is present, but the species has not been observed within five miles of the site.

High Potential: Habitat is present and the species has been observed within five miles of the site.

Present: The CNDDDB contains a recorded occurrence on the site, or the species was found during site-specific surveys.

Species which are not present or were found to have a low potential of occurrence are not discussed further in subsequent analysis sections.

Table BR-3: Special Status Species Matrix

Species	Status ¹	Habitat ¹	Potential for Occurrence
BIRDS			
Bald Eagle <i>Haliaeetus leucocephalus</i>	FSC	Bald eagles generally nest near coastlines, rivers, large lakes or streams that support an adequate food supply. Bald eagles are opportunistic feeders. Fish comprise much of their diet, but they also eat waterfowl, shorebirds/colonial waterbirds, small mammals, turtles, and carrion.	Low Potential. There are no large trees, cliffs, or other structures for nesting. There are no large impoundments or rivers within the Project site. Carson Creek flows nearby, but the creek is not very large or deep.
Bank Swallow <i>Riparia riparia</i>	ST	Requires vertical banks and cliffs with fine-textured or sandy soils near streams, rivers, ponds, lakes, and the ocean for nesting. Feeds primarily over grassland, shrubland, savannah, and open riparian areas. Primarily listed for destruction of nesting habitat.	Low Potential. There is no nesting habitat on the Project site, nor does Carson Creek provide nesting habitat in the vicinity of the Project.
Burrowing Owl <i>Athene cunicularia hypugea</i>	FSC, CSC	Frequents open grasslands and shrublands with perches and burrows. Nests and roosts in old burrows of small mammals and rubble piles (Zeiner et. al., 1990).	Present. Two recorded occurrences in the CNDDDB in the northwestern portion of the Project site; presence was also noted during a site visit. Suitable nesting and foraging habitat exists over the entire Project site.
Cooper's hawk <i>Accipiter cooperii</i>	SA	Frequents landscapes with wooded patches and groves, along with woodland edge habitats. Nests in riparian areas. Listed for nesting impacts.	Moderate Potential. Foraging habitat is not present on the site, but the site is within 500 feet of suitable nesting trees. Impacts are addressed in the "Nesting Raptors" section.
Double-crested cormorant <i>Phalacrocorax auritus</i>	SA	Associated with estuaries, rivers, and oceans, the species is known to occur along major rivers in the Central Valley. A colonial nester, the species prefers cliffs, rugged slopes, or tall trees beside water. Range is restricted to 5 – 10 miles of the nesting area. Listed for the protection of nesting colonies.	Not Present (nesting). Carson Creek does not provide suitable foraging area, as it is not a large or deep enough open water habitat. The nearest recorded nesting colony is along the American River, over six miles to the north. During the site visit Carson Creek was investigated for the presence of nesting colonies and none were observed. The point of observation was at an elevation that allowed observation of the tree tops.

Species	Status ¹	Habitat ¹	Potential for Occurrence
Ferruginous hawk <i>Buteo regalis</i>	SA	Frequents open grasslands, sagebrush flats, desert scrub, low foothills surrounding valleys, and fringes of pinyon-juniper habitats. Listed for preservation of wintering habitat.	Moderate Potential. The nearest recorded occurrence is just under six miles west of the site. The site contains foraging habitat for the species.
Golden Eagle <i>Aquila chrysaetos</i>	CFP	Found in rolling foothills with open grasslands, scattered trees, and cliff-walled canyons. Nests on cliffs and in large trees in open areas (Zeiner et. al., 1990).	Moderate Potential. Land to the east of the site provides the rolling wooded foothills suitable to the species, and may provide nesting habitat – though the species does prefer cliffs. The species could forage on the grassland of the site. There are no recorded occurrences for this species within ten miles.
Grasshopper sparrow <i>Ammodramus savannarum</i>	SA	Occurs in dry, dense grasslands, especially those with a variety of grasses and tall forbs and scattered shrubs for singing perches. Builds nest of grasses and forbs in a slight depression in ground, hidden at base of an overhanging clump of grasses or forbs. Listed for loss of nesting habitat.	Moderate High Potential. The nearest recorded occurrence is approximately 2.5 miles east of the site. The site contains potential foraging and nesting habitat, although there is a lack of shrubs or other singing perches which may inhibit use of the site.
Great blue heron <i>Ardea herodias</i>	SA	Associated with estuaries, rivers, and oceans, the species is known to occur along major rivers in the Central Valley. A colonial nester, the species prefers tall trees beside water. The range is restricted to within 10 miles of the nesting area. Listed for the protection of nesting colonies.	Not Present (nesting). The species was observed foraging in Carson Creek during a site visit. The point of observation was at an elevation that allowed observation of the tree tops, and no nesting colonies were observed along Carson Creek in the vicinity of the site. The site itself does not contain habitat, and the nearest recorded nesting colonies are over six miles to the north, along the American River.
Great egret <i>Ardea alba</i>	SA	Associated with estuaries, rivers, and oceans, the species is known to occur along major rivers in the Central Valley. A colonial nester, the species prefers cliffs, rugged slopes, or tall trees beside water. Listed for the protection of nesting colonies.	Not Present (nesting). The site itself does not contain habitat, and the nearest recorded nesting colonies are over six miles to the north, along the American River. During the site visit Carson Creek was investigated for the presence of nesting colonies and none were observed. The point of observation was at an elevation that allowed observation of the tree tops.

Species	Status ¹	Habitat ¹	Potential for Occurrence
Loggerhead Shrike <i>Lanius ludovicianus</i>	CSC	Listed for loss of breeding habitat, the species breed mainly in shrublands or open woodlands with a fair amount of grass cover and areas of bare ground.	Low Potential. Though the site contains foraging habitat, there are no shrublands or open woodlands on the site, and thus no breeding habitat. The nearest recorded occurrence is just over three miles to the west.
Northern Harrier <i>Circus cyaneus</i>	FSC, CSC	Frequents meadows, grasslands, open rangelands, desert sinks, and fresh and saltwater emergent wetlands (Zeiner et. al., 1990). Nests on ground in shrubby vegetation, usually at marsh edge.	Moderate High Potential. Foraging habitat is present on the site, and though no occurrences are recorded within ten miles the species was observed foraging during a site visit . The site lacks the shrubby vegetation preferred for nesting, though dense, tall grasses on the site could be used .
Swainson's Hawk <i>Buteo swainsoni</i>	ST	Breeds in stands with few trees in juniper-sage flats, riparian areas, and oak savannah. Requires adjacent suitable foraging areas such as grasslands or grain fields supporting rodent populations (Zeiner et. al., 1990).	High Potential. Species recorded nesting less than ½-mile from the site, along Deer Creek. On this basis, the species is highly likely to forage on the Project site.
Tricolored Blackbird <i>Agelaius tricolor</i>	FSC, CSC	The species is listed for breeding habitat. Known to nest near marshes in large (several hundred to several thousand birds) breeding colonies in habitat made up of blackberry thickets, bulrush (<i>Scirpus</i> sp.) or cattails (<i>Typha</i> sp.) patches.	Moderate Potential. No breeding habitat is present on the site, but portions of the site are within 300 feet of the nearest potential habitat alongside Carson Creek. This places portions of the Project within the typical buffer established to avoid construction disturbance of nesting birds.
White-tailed Kite <i>Elanus leucurus</i>	CFP	Inhabit low-elevation grasslands, wetlands dominated by grasses, oak woodlands, and agricultural and riparian areas (Dunk 1995).	High Potential. Foraging habitat is present on the Project site and nesting habitat is available within ½-mile along Carson and Deer Creeks. The nearest recorded nest site is just over one mile to the southwest.
MAMMALS			
American Badger <i>Taxidea taxus</i>	CSC	Occurs in a variety of habitats, including grasslands and oak woodlands with friable soils for digging (Zeiner et. al., 1990).	Low Potential. The nearest recorded occurrence is approximately 2.5 miles to the west. The only suitable denning habitat is possible along the banks of Carson and Deer Creeks to the east and south of the Project site. There is no proposed development within the floodplain of the creek.

Species	Status ¹	Habitat ¹	Potential for Occurrence
REPTILES			
Northwestern Pond Turtle <i>Clemmys marmorata</i>	FSC, CSC	Occurs in perennial ponds, lakes, rivers, and streams with suitable basking habitat (mud banks, mats of floating vegetation, partially submerged logs) and submerged shelter (Zeiner et. al., 1990). Require some slack- or slow-water aquatic habitat. Nests upland, on unshaded south-facing slopes with friable soils that have a high percentage of clay or silt (Jennings and Hayes, 1994).	Low Potential. There is one recorded observance of the species less than a mile to the east of the Project site, within the Carson Creek floodplain. The Project does not propose any development within the Carson Creek floodplain, and the areas of the site that are upland to the floodplain are on steep eastward-facing slopes. There is no suitable habitat on the Project site. Rathburn et. al. (1992) recommended protecting at least 500 meters (approximately 1,600 feet) from known occupied aquatic habitat. The project is beyond this distance from known habitat.
Giant Garter Snake <i>Thamnophis gigas</i>	FT, ST	Endemic to valley floors of the Sacramento and San Joaquin Valleys. Prefers freshwater marsh and low gradient streams. Has adapted to rice agriculture, drainage channels, and irrigation ditches. Requires permanent water, emergent vegetation, and upland habitat for basking and cover (USFWS, 1999).	Low Potential. The Project site is located north of the Cosumnes River and east of Grant Line Road. Streams north of Jackson Highway and east of Sunrise Boulevard are not considered Giant Garter Snake habitat as noted in the Giant Garter Snake Recovery Plan and in consultation with Fish and Wildlife staff. Further, the snake is not known to travel major rivers due to predatory species, lack of cover and basking habitat. The species would need to travel up the Cosumnes River, a major waterway, in order to reach Carson Creek.
AMPHIBIANS			
California Tiger Salamander <i>Ambystoma californiense</i>	FT, ST	Endemic to annual grasslands and valley-foothill habitats in California. Adults spend most time in subterranean refugia, particularly in ground squirrel burrows (CDFG, 2005). Seasonal ponds or vernal pools are required for breeding.	Moderate Potential. The nearest recorded occurrence is nearly nine miles south of the site. The site contains suitable breeding habitat and upland habitat for the species.
California Red-legged Frog <i>Rana draytonii</i>	FT, CSC	Adults prefer dense, shrubby or emergent riparian vegetation near deep (at least two feet), still, or slow-moving water. The species aestivate in upland burrows and in leaf litter. (Jennings and Hayes 1994)	Low Potential. The nearest confirmed, documented breeding population is located approximately 30 miles northeast of the Project near Pollock Pines in El Dorado County (CNDDDB occurrence 586). There are no occurrences documented in Sacramento County, and the species is considered extirpated in the Central Valley (USFWS 2002).

Species	Status ¹	Habitat ¹	Potential for Occurrence
Western Spadefoot Toad <i>Scaphiopus (Spea) hammondi</i>	FSC, CSC	Occurs primarily in grasslands but occasionally populates valley-foothill hardwood woodlands (Zeiner et. Al., 1990). Almost entirely terrestrial, but requires temporary rain pools that lack predators (fish, bullfrogs, crayfish) for breeding. Also needs burrows for refuge.	Present. Populations of western spadefoot toad have been documented to the west of the Project site. Species was observed on the Project site during rare plant surveys. Appropriate breeding and aestivation habitat is present throughout the Project site.
FISH			
Delta Smelt <i>Hypomesus transpacificus</i>	FT, CE	The delta smelt is a small, slender-bodied fish with a typical adult size of two to three inches that is found only in the Sacramento-San Joaquin Estuary. This species occurs in the Sacramento River as far upstream as the confluence with the American River. Delta smelt may also be found in the Cosumnes River and San Joaquin River.	Low Potential. Carson Creek, which borders the eastern portion of the property, is hydrologically connected to the Sacramento Delta via the Cosumnes River. It is possible that some smelt exist within Carson Creek, but based on their relative scarcity at the confluence with the Cosumnes River, the population's levels would be very low. The Project will not result in any direct impacts to Carson Creek, or hydromodification of Carson Creek, and thus the species does not occur within the Project impact area.
Central Valley Steelhead <i>Oncorhynchus mykiss</i>	FT	Most of Sacramento County is within the distinct population segment area for this species. Critical habitat has been designated within Sacramento County on the Sacramento River, American River, Mokelumne River, and Dry Creek (both north and south creeks). Spawning has been documented on the Cosumnes River. (NMFS 2009)	Low Potential. Some spawning may occur within Carson Creek, which is ultimately connected to the Cosumnes River. The Project will not result in any direct impacts to Carson Creek, or hydromodification of Carson Creek, and thus the species does not occur within the Project impact area.
Central Valley Spring and Winter-run Chinook Salmon <i>Oncorhynchus tshawytscha</i>	FT, FE	Distribution occurs throughout the Sacramento River and through a portion of the American River, but the distribution maps do not include the Cosumnes River as habitat. (NMFS 2009)	Low Potential. Habitat is not present within or adjacent to the Project site.

Species	Status ¹	Habitat ¹	Potential for Occurrence
INVERTEBRATES			
California Linderiella <i>Linderiella occidentalis</i>	FSC	A fairy shrimp which most often occupies pools that are vegetated and contain clear water. Not uncommon to observe the species in mud-bottomed pools with slightly turbid water. (Eriksen and Belk, 1999).	High Potential. The nearest recorded occurrence is approximately 1.5 miles to the southwest. The vernal pools and seasonal wetlands on the Project site provide suitable habitat.
<u>Molestan Blister Beetle</u> <u><i>Lytta molesta</i></u>	<u>None</u>	<u>Flowers and uplands of vernal pools.</u>	<u>Low Potential. Though the species is found within vernal pool areas, there are no recorded occurrences in Sacramento County, San Joaquin, or Placer counties, and thus the site falls outside of the known distribution or range of the species.</u>
Ricksecker's Water Scavenger Beetle <i>Hydrochara rickseckeri</i>	FSC	The Ricksecker's water scavenger beetle is an aquatic beetle that lives in weedy, shallow, open water, associated fresh water seeps, springs, farm ponds, vernal pools, and slow moving stream habitats. The beetle is known to occur with other vernal shrimp species.	High Potential. The nearest recorded occurrence is just over three miles to the west. Vernal pools, seasonal wetlands, seasonal wetland swales within the Project site provide suitable habitat.
Valley Elderberry Longhorn Beetle <i>Desmocerus californicus dimorphus</i>	FT	Associated with mature elderberry (<i>Sambucus</i> spp.) trees found in riparian forests in the Central Valley (USFWS, 2003a).	Not Present. Elderberry host plant not present in the Project site.
Midvalley Fairy Shrimp <i>Branchinecta mesoatlantica</i>	FSC	Inhabit shallow vernal pools, vernal swales, and various artificial ephemeral wetland habitats in the Sacramento, Solano, Contra Costa, San Joaquin, Madera, Merced, and Fresno Counties (USFWS, 2003a).	High Potential. The nearest recorded occurrence is just over three miles to the west. Vernal pools, seasonal wetlands, seasonal wetland swales within the Project site provide suitable habitat.

Species	Status ¹	Habitat ¹	Potential for Occurrence
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i>	FT	Inhabit alkaline pools, ephemeral drainages, rock outcrop pools, ditches, stream oxbows, stockponds, vernal pools, vernal swales, and other seasonal wetlands. Also found in basalt flow depression pools in unplowed grasslands (Eriksen and Belk, 1999).	High Potential. The nearest recorded occurrence is just over three miles to the west. Vernal pools, seasonal wetlands, seasonal wetland swales within the Project site provide suitable habitat.
Vernal Pool Tadpole Shrimp <i>Lepidurus packardii</i>	FE	Inhabits small to large vernal pools containing clear to highly turbid water (USFWS, 2003a).	High Potential. The nearest recorded occurrence is just over three miles to the west. Vernal pools, seasonal wetlands, seasonal wetland swales within the Project site provide suitable habitat.
PLANTS			
lone Manzanita <i>Arctostaphylos myrtifolia</i>	FE, List 1B	Native to the sandy clay soils of the lone formation in the western Sierra Nevada foothills.	Not Present. This species requires serpentinite, volcanic, or gabbroic soils or soils of the lone formation, none of which are present on-site. Further, species occur within chaparral cismontane woodlands; this habitat is not present on the Project site.
Bandage's Clarkia <i>Clarkia biloba</i> app. <i>Brandegeeae</i>	List 1B	Chaparral and cismontane woodlands; elevation 240 – 3,000ft	Not Present. Habitat type not present within the Project site or vicinity.
lone Buckwheat <i>Eriogonum apricum</i> var. <i>apricum</i>	FE, CE, List 1B	Native to the sandy clay soils of the lone formation in the western Sierra Nevada foothills.	Not Present. This species requires serpentinite, volcanic, or gabbroic soils or soils of the lone formation, none of which are present on-site. Further, species occur within chaparral cismontane woodlands; this habitat is not present on the Project site.
Irish Hill Buckwheat <i>Eriogonum apricum</i> var. <i>prostratum</i>	FE, CE, List 1B	Native to the sandy clay soils of the lone formation in the western Sierra Nevada foothills.	Not Present. This species requires serpentinite, volcanic, or gabbroic soils or soils of the lone formation, none of which are present on-site. Further, species occur within chaparral cismontane woodlands; this habitat is not present on the Project site.
Tuolumne Button-Celery <i>Eryngium pinnatisectum</i>	CE, List 1B	Mesic areas within cismontane woodland and lower montane coniferous forests; elevation 230 – 3,000ft	Not Present. Habitat type not present within the Project site.

Species	Status ¹	Habitat ¹	Potential for Occurrence
Dwarf downingia (<i>Downingia pusilla</i>)	List 2	Vernal pools and mesic areas in valley and foothill grasslands; elevation 3 – 1,460 ft (blooms Mar. – May)	Not present. Suitable habitat present on the Project site. Nearest occurrence is approximately 11.4 miles southwest of the site. Rare plant surveys conducted in 2008 and 2010 did not observe the species.
Boggs Lake Hedge-Hyssop <i>Gratiola heterosepala</i>	SE, List 1B	Marshes and swamps, vernal pools/clay; elevation 30 – 7,790ft (blooms Apr. – Aug.)	Not Present. Suitable habitat present on the Project site. Nearest occurrence is approximately ¼-mile southwest of the Project site. Rare plant surveys conducted in 2008 and 2010 did not observe the species.
Parry's Horkelia <i>Horkelia parryi</i>	List 1B	Native to the sandy clay soils of the lone formation in the western Sierra Nevada foothills.	Not Present. This species requires serpentinite, volcanic, or gabbroic soils or soils of the lone formation, none of which are present on-site. Further, species occur within chaparral cismontane woodlands; this habitat is not present on the Project site.
Northern California Black Walnut <i>Juglans hindsii</i>	List 1B	Riparian scrub, riparian woodland; elevation 0 – 1,320ft (blooms Apr. – May)	Not Present. There are no trees present on the Project site.
Ahart's Dwarf Rush <i>Juncus leiospermus</i> var. <i>ahartii</i>	List 1B	Valley and foothill grassland/mesic; elevation 100 – 330ft (blooms Mar. – May)	Not Present. The vernal pools, seasonal wetlands and seasonal swales on-site provide suitable habitat for this species. The plant surveys in 2008 and 2010 did not observe the species within the Project boundary and the nearest occurrence listed in the CNDDB is approximately 4.5 miles to the west.
Legenere <i>Legenere limosa</i>	List 1B	Vernal pools; elevation 0 – 2,900ft (blooms Apr. – Jun.)	Present. Species were observed in two vernal pools during the plant surveys in 2008 and 2010. The vernal pools, seasonal wetlands, seasonal wetland swales, drainages, ditches, and stock pond represent suitable habitat.
Pincushion Navarretia <i>Navarretia myersii</i>	List 1B	Vernal pools; elevation 65 – 1,100ft (blooms May)	Not Present. The vernal pools, seasonal wetlands and seasonal swales on-site provide suitable habitat for this species. The plant surveys in 2008 and 2010 did not observe the species within the Project boundary and the nearest occurrence is 5.9 miles to the southeast.

Species	Status ¹	Habitat ¹	Potential for Occurrence
Slender Orcutt Grass <i>Orcuttia tenuis</i>	FT, SE List 1B	Vernal pools; elevation 115 – 5,775ft (blooms May – Oct.)	Not Present. The vernal pools, seasonal wetlands and seasonal swales on-site provide suitable habitat for this species. The nearest listed occurrence in the CNDDDB is 2.3 miles west of the Project site. The plant surveys in 2008 and 2010 did not observe the species within the Project boundary.
Sacramento Orcutt Grass <i>Orcuttia viscida</i>	FE, SE, List 1B	Vernal pools; elevation 100 – 330ft (blooms Apr. – Jul.)	Present. Species observed along the northern boundary of the site during plant surveys (ECORP, 2007 and 2008). The vernal pools, seasonal wetlands and seasonal swales on-site provide suitable habitat for this species.
Sanford's Arrowhead <i>Sagittaria sanfordii</i>	List 1B	Marshes and swamps; elevation 0 – 2,000ft (blooms May – Oct.)	Not Present. The vernal pools, seasonal wetlands and seasonal swales on-site provide suitable habitat for this species. The nearest listed occurrence in the CNDDDB is 2.2 miles east of the Project site. The plant surveys in 2008 and 2010 did not observe the species within the Project boundary.

Source: California Dept. of Fish and Game Natural Diversity Data Base (2011) and the U.S. fish and Wildlife Service Species List for the Buffalo Creek U.S.G.S. 7.5-minute quad.

1. Listing status sources and some habitat description sources (life history accounts) are:

California Species: <http://www.dfg.ca.gov/wildlife/nongame/list.html>

Federal Species: http://www.fws.gov/sacramento/ES_Species/Accounts/Home/es_species.htm and http://www.fws.gov/sacramento/y_old_site/es/spp_concern.htm

California Native Plant Society: <http://www.rareplants.cnps.org/>

FE = Federal Endangered; FT = Federal Threatened; FC = Federal Candidate, FSC= Federal Species of Concern

SE = State of California Endangered; ST = State of California Threatened; CSC = State of California Species of Special Concern; CFP = State of California Fully Protected; SA = Special Animal

List 1B = California Native Plant Society Endangered, Threatened, or Rare in California

List 2 = California Native Plant Society Endangered, Threatened, or Rare in California but more common elsewhere

BIRDS

Based on the species table and types of habitat present on or near the Project site, the following special status avian species are identified as having potential to occur on or near the Project site: burrowing owl, Cooper's hawk, ferruginous hawk, golden eagle, grasshopper sparrow, northern harrier, Swainson's hawk, tricolored blackbird, and white-tailed kite. The section also addresses nesting raptors in general, which are afforded minimum protections pursuant to the Fish and Game code regardless of status.

SWAINSON'S HAWK

The Swainson's hawk (*Buteo swainsoni*) is listed as a Threatened species by the State of California and is a candidate for federal listing as threatened or endangered. It is a migratory raptor typically nesting in or near valley floor riparian habitats during spring and summer months. Swainson's hawks were once common throughout the state, but various habitat changes, including the loss of nesting habitat (trees) and the loss of foraging habitat through the conversion of native Central Valley grasslands to certain incompatible agricultural and urban uses has caused an estimated 90% decline in their population.

Swainson's hawks feed primarily upon small mammals, birds, and insects. Their typical foraging habitat includes native grasslands, alfalfa and other hay crops that provide suitable habitat for small mammals. Certain other row crops and open habitats also provide some foraging habitat. The availability of productive foraging habitat near a Swainson's hawk's nest site is a critical requirement for nesting and fledgling success. In central California, about 85% of Swainson's hawk nests are within riparian forest or remnant riparian trees. CEQA analysis of impacts to Swainson's hawks consists of separate analyses of impacts to nesting habitat and foraging habitat.

The CEQA analysis provides a means by which to ascertain impacts to the Swainson's hawk. When the analysis identifies impacts, mitigation measures are established that will reduce impacts to the species to a less than significant level. Project proponents are cautioned that the mitigation measures are designed to reduce impacts and do not constitute an incidental take permit under the California Endangered Species Act (CESA). Anyone who directly or incidentally takes a Swainson's hawk, even when in compliance with mitigation measures established pursuant to CEQA, may violate the California Endangered Species Act.

NESTING HABITAT

For determining impacts to and establishing mitigation for nesting Swainson's hawks in Sacramento County, Fish and Game recommends implementing the measures set forth in the Fish and Game Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsoni*) in the Central Valley of California (November 1, 1994). These state that no intensive new disturbances, such as heavy equipment operation associated with construction, should be initiated within ¼ mile of an active Swainson's

hawk nest in an urban setting or within ½ mile in a rural setting between March 1 and September 15.

FORAGING HABITAT

Swainson's hawks are known to forage up to 18 miles from their nest site; however, that is the extreme range of one individual bird's daily movement. It is more common for a Swainson's hawk to forage within 10 miles of its nest-site. Therefore it is generally accepted and Fish and Game recommends evaluating projects for foraging habitat impacts when they are within 10 miles of a known nest site.

Statewide, Fish and Game recommends implementing the measures set forth in the Fish and Game Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsoni*) in the Central Valley of California (November 1, 1994) for determining impacts to Swainson's hawk foraging habitat unless local jurisdictions develop an individualized methodology designed specifically for their location. Sacramento County has developed such a methodology and received confirmation from Fish and Game in May of 2006 that the methodology is a better fit for unincorporated Sacramento County and should replace the statewide, generalized methodology for determining impacts to foraging habitat.

Swainson's hawk foraging habitat value is greater in large expansive open space and agricultural areas than in areas which have been fragmented by agricultural-residential or urban development. The methodology for unincorporated Sacramento County is based on the concept that impacts to Swainson's hawk foraging habitat occur as properties develop to increasingly more intensive uses on smaller minimum parcel sizes. Therefore, the methodology relies mainly on the minimum parcel size allowed by zoning to determine habitat value. For the purpose of the methodology, properties with zoning of AG-40 and larger are assumed to maintain 100% of their foraging habitat value and properties with AR-5 zoning and smaller are assumed to have lost all foraging habitat value. Table BR-4 below illustrates the continuum between AG-40 and AR-5 that represents the partial loss of habitat value that occurs with fragmentation of large agricultural land holdings. The large, 50% loss of habitat value between AG-20 and AR-10 is due to the change in land use from general agriculture to agricultural-residential. The methodology does allow case-by-case analysis for projects with unique characteristics.

Table BR-4: Swainson's Hawk Foraging Habitat Value by Zoning Category

Zoning Category	Habitat Value Remaining
AG-40 and above (e.g., AG-80, 160 etc.)	100%
AG-20	75%
AR-10	25%
AR-5 and smaller (e.g., AR-2, 1 or RD-5, 7, 10, 15, 20 etc.)	0%

CONCLUSION

According to the CNDDDB, 2008, the nearest recorded species occurrence for the Swainson's hawk, #660, is approximately ½ mile to the east of the Project site along Deer Creek. According to the information provided in the CNDDDB Rare Find program, a nesting pair was observed in 1993. The Project site provides foraging habitat for the hawk and development of the site would result in a potentially significant loss of that habitat. The entire Project site is zoned AG-80 and therefore retains 100 percent of foraging habitat value. The Project will be rezoning the entire 2,669 acres to urban uses (AG-80 to SPA). According to the impact methodology, the habitat value of all 2,669 acres would be lost, but it is acknowledged that there are areas of the site which are designated as Avoided Areas under the proposed SPA zoning and therefore would not be subject to typical urban development. For this reason, a case-by-case analysis has been used for these areas. The analysis below relies upon the known habitat needs of the species, and compares that to what will be remaining on the site.

The Project includes some Avoided Areas which can be removed from the total impact area, but this depends on the size and structure of the area to be avoided. Reported mean home ranges in the Central Valley range from 6,820 acres (Estep 1989) to 9,978 acres (Babcock 1995). Swainson's hawk forage only incidentally in edge habitats or areas such as orchards which have narrow zones of available forage (Estep 1989), and prefer agricultural fields with row crops and open grassland areas. The need for large areas of open habitat makes the species sensitive to habitat fragmentation (Estep and Teresa 1992). The species must have suitable foraging habitat within three to five miles from the nest tree to successfully fledged young (England et al. 1995).

On the basis of the above research, the 298-acre Avoided Area on the western side of the site, plus two adjacent Avoided Areas to the north and south, will remain suitable habitat; this collective area is 382 acres, which will be connected to thousands of acres of open space to the north and west **in the existing condition. The onsite Avoided Areas will also be connected to the Kiefer Landfill preserves, which provides a permanent linkage to thousands of acres of grassland and cropland south of Kiefer Landfill and the Project – land which all lies outside of the USB.** In this way, it is like and similar to large contiguous properties zoned AG-80. There are also multiple areas on the site which are on the edge of the property bordering the USB, and as such these areas will also be connected to large, agriculturally zoned properties. These areas include an 18.4-acre Avoided Area to the south of the University/College Campus Center which will remain connected to open space and agriculture outside of the USB to the west and south. This drops the total mitigation requirement from 2,669 acres to 2,269 acres. In addition, the areas on the eastern and southeastern side of the site which are designated Agriculture by the SPA are located outside of the USB, and will remain connected to large areas of contiguous habitat. Provided that these areas are not developed with some of the industrial uses unconditionally allowed by the Agriculture designation of the SPA, these areas can also be considered retained. Mitigation has been written such that if the applicant establishes conservation easements over these areas, that the areas – which total 37.3 acres – will not be considered impacted. This would drop the total mitigation requirement to 2,231 acres.

The Avoided Area surrounding the central linear drainage will not maintain full habitat value, because it is narrow (less than 600 feet wide and averages approximately 400 feet wide), is often steeply sloped, and will be surrounded by urban uses. This area will functionally be edge habitat; Swainson's hawk may continue to forage incidentally in this linear Avoided Area, but based on observed habitat preferences will no longer rely on this area. Applying the intent of the methodology leads to the same conclusion. Though this area includes 93.6 acres, it is not configured in the manner of an AG-40 or AG-80 parcel. The minimum width for an AG-80 parcel stipulated in the zoning code is 1,000 feet, and the minimum width for an AG-40 or AG-20 parcel is 500 feet. The central linear Avoided Area is less than 500 feet wide for most of its length. The minimum width in an AR-10 zone is 300 feet, and there are multiple locations where the Avoided Area drops well below this width also. Furthermore, the methodology considers an AR-10 designation as retaining a fractional amount of habitat because the larger AR-10 zoning category tends to occur on urban fringes, where the majority of the land so designated occurs adjacent to larger agricultural properties. In the case of the Project, the linear Avoided Area will be surrounded by dense urban development for approximately 1.5 miles on either side, which is entirely uncharacteristic of an AR-10 property.

Preconstruction surveys will be required to determine if there are nesting Swainson's hawk within ½-mile of the Project site. The purpose of the survey requirement is to ensure that construction activities do not agitate nesting hawks, potentially resulting in nest abandonment or other harm to nesting success. If Swainson's hawk nests are found, the developer is required to contact Fish and Game to determine what measures need to be implemented in order to ensure that nesting hawks remain undisturbed. The measures selected will depend on many variables, including the distance of activities from the nest, the types of activities, and whether the landform between the nest and activities provides any kind of natural screening. According to the Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsoni*) in the Central Valley of California (November 1, 1994), the mitigation described above will ensure that impacts to nesting Swainson's hawk will be less than significant.

The Project will require 2,231 acres of mitigation to compensate for the loss of Swainson's hawk foraging habitat. This can be done by utilizing the County's Swainson's Hawk Impact Mitigation Program or by implementing a mitigation plan acceptable to CDFG. Alternatively, if the SSHCP is approved, mitigation as specified in the SSHCP would be available. Mitigation measures that compensate for the loss of Swainson's hawk foraging habitat will reduce singular and cumulative impacts to *less than significant* levels. Note that additional analysis and mitigation requirements are included in the Cumulative and Growth Inducing Impacts chapter.

SWAINSON'S HAWK IMPACT MITIGATION PROGRAM

In 1997, in response to the need to mitigate for the loss of Swainson's hawk foraging habitat in Sacramento County, the Board of Supervisors adopted an ordinance that established a Swainson's Hawk Impact Mitigation Program (Chapter 16.130 of the

Sacramento County Code). The Program has been amended several times; the latest amendment went into effect in December of 2009.

By adopting the Program, the Board of Supervisors found that “the most effective means of mitigation for the loss of suitable Swainson’s hawk foraging habitat is the direct preservation, in perpetuity, of equally suitable foraging habitat on an acre-per-acre basis based on the project’s determined acreage impact”. On an individual basis, the acquisition of lands for habitat conservation may not always be feasible or prudent and many small, disconnected preserves do not benefit the species as well as large, connected preserve systems. Therefore, the ordinance provides for the establishment of impact mitigation fees, which in some circumstances, may be paid in-lieu of providing habitat lands. These fees accumulate and are held in trust by the County until used for the acquisition of foraging habitat of a size large enough to be biologically and economically viable. The current fee is \$12,925 per acre. In addition, there is a one time administrative fee of \$500. These fees may be amended from time to time to ensure they accurately reflect market-rate land prices.

Under the Swainson’s Hawk Impact Mitigation Program, only projects which have an impact of less than 40 acres are eligible to pay fees. Projects impacting 40 acres or more of foraging habitat must provide land acceptable to CDFG and the County. Land can be provided in fee title or through conservation easement. The Sacramento County Planning and Community Development Department (Planning) administers the Swainson’s Hawk Impact Mitigation Program and more information on lands likely to be determined as acceptable replacement habitat can be found at their website <http://www.msa2.saccounty.net/planning/Pages/Swainsons-Hawk-Ordinance.aspx>.

NESTING RAPTORS

Raptors are defined as members of the order Falconiformes (vultures, eagles, hawks, and falcons) and the order Strigiformes (owls). Common species of raptors found locally include Cooper’s hawk (*Accipiter cooperii*) red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), American kestrel (*Falco sparverius*), barn owl (*Tyto alba*), and great horned owl (*Bubo virginianus*).

Raptors and their active nests are protected by the California Fish and Game Code Sections 3503.5, 3511, and 3513. The Code states the following: “It is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird.” Because most raptors migrate they are also protected by the Federal Migratory Bird Treaty Act of 1918, which states “unless and except as permitted by regulations, it shall be unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill” a migratory bird. Section 3(18) of the Federal Endangered Species Act defines the term “take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Causing a bird to abandon an active nest may cause harm to egg(s) or chick(s) and is therefore considered “take.”

The Project site predominately contains open annual grassland. Mature trees of sufficient size to support tree-nesting raptors are located along the banks of Carson Creek outside of the eastern Project boundary. Some hawk species less susceptible to human disturbance may also use some of the taller trees near the home sites just outside of the northern property boundary. There are no trees within the Project boundary, and thus no tree-nesting habitat on the site. Raptors, in general, build nests in large mature trees, though there are some ground-nesting species such as the northern harrier and the burrowing owl (refer to species-specific discussions, below).

Since the Project is adjacent to suitable tree nesting habitat, construction activities may impact nesting raptors if they occur within 500 feet of suitable nesting trees; 500 feet is the buffer used by Sacramento County and other nearby jurisdictions as a screening tool, and has been accepted by Fish and Game. To avoid impacts to tree-nesting raptors, mitigation is recommended requiring pre-construction nesting surveys. The purpose of the survey requirement is to ensure that construction activities do not agitate nesting raptors, potentially resulting in nest abandonment or other harm to nesting success. If raptor nests are found, the developer is required to contact Fish and Game to determine what measures need to be implemented in order to ensure that nesting raptors remain undisturbed. The measures selected will depend on many variables, including the distance of activities from the nest, the types of activities, whether the landform between the nest and activities provides any kind of natural screening, and other variables.

Prior to construction or land clearing activities which occur during nesting season (generally March through mid-September), all mature trees within 500 feet of Project construction activities shall be surveyed for nesting raptors. If nesting raptors are observed, the Project developer shall consult with Fish and Game and determine the appropriate measures that must be implemented. If no nesting raptors are observed, no further mitigation will be required. With implementation of recommended mitigation, impacts to nesting raptors are *less than significant*.

BURROWING OWL

The burrowing owl (*Athene cunicularia hypugea*) is a California Species of Concern. Burrowing owl habitat can be found in annual and perennial grasslands, deserts, and arid scrublands characterized by low-growing vegetation (Zarn 1974). Suitable owl habitat may also include trees and shrubs if the canopy covers less than 30 percent to the ground surface. Burrows are the essential component of burrowing owl habitat. Both natural and artificial burrows provide protection, shelter, and nesting habitat for burrowing owls (Henny and Blus 1981). Burrowing owls typically use burrows made by fossorial mammals, such as ground squirrels or badgers, but also use man-made structures such as cement culverts; cement, asphalt, or wood debris piles; or openings beneath cement or asphalt pavement.

Burrowing owls may use a site for breeding, wintering, foraging, and/or migration stopovers. Breeding season takes place from February 1 to August 31 and wintering takes place from September 1 to January 31. Occupancy of suitable burrowing owl

habitat can be verified at a site by detecting a burrowing owl, its molted feathers, cast pellets, prey remains, eggshell fragments, or excrement at or near a burrow entrance. Burrowing owls exhibit high site fidelity, reusing burrows year after year (Rich 1984, Feeney 1992).

Burrowing owls have been documented on the Project site and are listed in the CNDDB (occurrence #91). The recorded occurrence was listed in 1989 and identified two active burrows. The owls are located within the northern portion of the 298-acre avoided area, and were observed during a site visit. There is another recorded occurrence, #307 just south of the Project site. This occurrence details the observation of one active burrow in 1994 within the footprint of the ultimate landfill boundaries. During the field visit by Environmental Review staff the presence of rodent burrows that could be suitable for nesting was observed throughout the landscape. ECORPs special status species evaluation also identified burrowing owl within the central linear Avoided Area.

The Fish and Wildlife "Status Assessment and Conservation Plan for the Western Burrowing Owl in the United States, Biological Technical Publication" (BTP-R6001-2003) indicates that the protocols set forth in the "Burrowing Owl Survey Protocol and Mitigation Guidelines" published by The California Burrowing Owl Consortium (April 1993) should be used. Fish and Game published a "Staff Report on Burrowing Owl Mitigation" on October 17, 1995, which is to be used to assess impacts. Though there is some variation, these documents generally mirror one another. To avoid impacts to nesting birds, surveys should be performed for all potential habitat areas within 500 feet of construction activities. The protocols recommend both wintering and breeding season surveys. Avoidance is defined as maintaining a minimum distance of 250 feet from an occupied burrow in addition to preserving a minimum of 6.5 acres of habitat around the occupied burrow for each pair or unpaired resident. If avoidance is not possible, recommended mitigation includes enhancement or creation of burrows in adjacent suitable habitat that is contiguous with the affected habitat. Relocation techniques to move owls out of the affected area are also permitted. If habitat replacement must occur off-site, the mitigation recommendation is increased from 6.5 acres per pair or single resident to between 9.75 and 19.5 acres (depending on the quality and location of the habitat).

The existing documented burrowing owl nest on the site is within an avoided area and will result both in an adequate buffer and adequate retained habitat. It should also be noted that all of the Avoided Areas are large enough to support multiple pairs of burrowing owls, so unlike for the Swainson's hawk, all of the Avoided Area can be considered to be retained habitat. In order to reduce potential impacts to owl nests which may be undiscovered, the applicant shall have a qualified biologist perform a focused survey, prior to the construction of improvements or buildings, for burrowing owls according to the "Burrowing Owl Survey Protocol and Mitigation Guidelines" published by The California Burrowing Owl Consortium (April 1993). If no active burrows are found during the focused survey, no further mitigation will be required. If active burrows are found, mitigation shall be implemented consistent with the Fish and Game staff report recommendations. Both Fish and Game and Environmental Review shall be contacted and provided with an avoidance and mitigation plan. With mitigation,

the development of the Project site would not result in substantial negative effects to the sustainability of the species and thus impacts to burrowing owls are *less than significant*.

FERRUGINOUS HAWK

According to the Fish and Game Life History Account for the ferruginous hawk, the species is an uncommon winter resident and migrant at lower elevations and open grasslands in the Central Valley. The species requires large, open tracts of grasslands, sparse shrub, or desert habitats with elevated structures for nesting. The species is migratory, and generally arrives in California in September and departs by mid-April. The Life History Account also indicates that the species has a tendency to displace red-tailed hawks and Swainson's hawks. There is no published regulatory guidance on mitigation of foraging habitat for this species.

Any species wintering in the general Project area would likely be in competition with the known Swainson's hawk that forage in the vicinity of the site. The fact that Swainson's hawk are successfully occupying the area makes it less likely that ferruginous hawk use the site. Nonetheless, the Project has the potential to remove winter foraging habitat for the species. Mitigation for foraging habitat loss has already been required as part of Swainson's hawk impacts, and since the two species use the same habitats, additional mitigation is unnecessary. The development of the Project site would not result in substantial negative effects to the sustainability of the species and thus impacts to ferruginous hawk habitat are *less than significant*.

GOLDEN EAGLE

According to the Fish and Game Life History Account for the golden eagle, the species is an uncommon permanent resident migrant throughout California, but does not occur in the center of the Central Valley. The species uses rolling foothills and mountain terrain, wide arid plateaus deeply cut by streams and canyons, open mountain slopes, and cliffs and rock outcrops – features that are not present in the center of the Central Valley. The Project is located at the edge of the foothills, where this rolling terrain just begins, and thus may provide some foraging habitat for the species. There is no published regulatory guidance on mitigation of foraging habitat for this species.

The Project has the potential to remove foraging habitat for the species. Mitigation for foraging habitat loss has already been required as part of Swainson's hawk impacts, so additional mitigation for the golden eagle is unnecessary. The development of the Project site would not result in substantial negative effects to the sustainability of the species and thus impacts to golden eagle habitat are *less than significant*.

GRASSHOPPER SPARROW

According to the Fish and Game Life History Account for the grasshopper sparrow, the species is an uncommon and local summer resident and breeder in foothills and lowlands, arriving in California from March to May and migrating south in August or

September. The species occurs in dry, dense grasslands, 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 the ground, hidden at the base of an overhanging clump of grasses or forbs. There is no published regulatory guidance on mitigation of foraging habitat for this species.

The Project has the potential to remove foraging and nesting habitat for the species. Unlike impacts for landscape-level predators such as the Swainson's hawk, all of the Avoided Areas on the site are considered to be retained habitat for more localized foragers such as the grasshopper sparrow. Mitigation for grassland habitat loss has already been required as part of Swainson's hawk impacts, so additional mitigation for the grasshopper sparrow is unnecessary. The development of the Project site would not result in substantial negative effects to the sustainability of the species and thus impacts to grasshopper sparrow habitat are *less than significant*.

NORTHERN HARRIER

According to the Fish and Game Life History Account for the northern harrier the species occurs in a wide range of habitat types and elevations, from grasslands in the Central Valley to alpine meadows as high as 10,000 feet. The species is a widespread winter resident and migrant, though an uncommon nesting season resident in the Central Valley. The population has declined in California, largely due to destruction of breeding habitat. The species is mostly found in flat or hummocky open areas of tall, dense grasses, moist or dry shrubs, with edges for nesting, cover, and feeding. There is no published regulatory guidance on mitigation of foraging habitat for this species.

The Project has the potential to remove foraging habitat for the species. Mitigation for foraging habitat loss has already been required as part of Swainson's hawk impacts, so additional mitigation for the northern harrier is unnecessary. The development of the Project site would not result in substantial negative effects to the sustainability of the species and thus impacts to northern harrier are *less than significant*.

TRICOLORED BLACKBIRD

According to the Fish and Game Life History Account for the tricolored blackbird, the species is mostly a resident in California, and common locally throughout the Central Valley. The species is a colonial nester which breeds near fresh water, preferably in emergent wetland with tall, dense cattails or tules, but also in thickets of willow, blackberry, wild rose, and tall herbs. Nesting colonies usually support a minimum of 50 pairs. The species feeds in grassland and cropland habitats. The usual breeding season is mid-April into late July.

According to the CNDDDB, the nearest CNDDDB recorded species occurrence (#178) is approximately 2.3 miles to the south. This occurrence was documented in 1994 and noted the nesting of approximately 60 pairs in blackberries. The nearest available nesting habitat is located along Carson Creek just outside of the eastern boundary of

the Project site. Due to known occurrences of nesting colonies in the vicinity it is possible that tricolored blackbirds may have nesting colonies near the Project site.

In order to reduce potential impacts to nesting tricolored blackbirds, mitigation measures have been included. Equipment operation and noise associated with construction activities may disturb nesting birds. If construction activities are proposed during the breeding season (March 1 through July 15) pre-construction surveys shall be conducted where suitable nesting habitat is present within 300 feet of the Project site. If tricolored blackbirds are found nesting within 300 feet of the survey area, the California Department of Fish and Game shall be contacted and appropriate avoidance and impact minimization measures shall be implemented. This may include establishing a buffer or postponing construction until fledging of all nestlings (about July 15). Specific measures cannot be outlined at this time, because the extent and type of measures required are highly situational, depending on distance to the nest, the number of nesting individuals, the type of nesting substrate, and other factors. If no tricolored blackbirds are found during the pre-construction survey, no further mitigation would be required.

In addition to potential impacts to nesting birds, the Project site provides suitable foraging habitat. The loss of 2,120 acres of grassland habitat would decrease the availability of foraging habitat. However, to the east of the Project site is open habitat that will continue to provide suitable foraging habitat. In addition, even though foraging habitat mitigation for the tricolor blackbird is not required, the Project does require foraging habitat mitigation for Swainson's hawk impacts. This mitigation will benefit all other species which may forage in this same habitat type. The development of the Project site would not result in substantial negative effects to the sustainability of the species and thus impacts to tricolored blackbirds are *less than significant*.

WHITE-TAILED KITE

According to the Fish and Game Life History Account for the white-tailed kite, the species is a resident in coastal and valley lowlands which is rarely found away from agricultural areas. The species forages in undisturbed grasslands, meadows, farmlands, and emergent wetlands. Substantial groves of dense, broad-leaved deciduous trees are used for nesting and roosting. The species is listed as Fully Protected due to nesting impacts.

The loss of 2,120 acres of grassland habitat would decrease the availability of foraging habitat. Mitigation for foraging habitat loss has already been required as part of Swainson's hawk impacts, so additional mitigation for the white-tailed kite is unnecessary. The development of the Project site would not result in substantial negative effects to the sustainability of the species and thus impacts to white-tailed kite are *less than significant*.

MITIGATION MEASURES:

BR-3. If construction, grading, or Project-related improvements are to occur between March 1 and September 15, a focused tree survey for tree- or ground-nesting

raptors within 500 feet of the **construction site (1/2-mile for Swainson's hawk) and for ground-nesting grasshopper sparrow** shall be conducted by a qualified biologist within 14 days prior to the start of construction work (including clearing and grubbing). If active nests are found, the California Department of Fish and Game shall be contacted to determine appropriate protective measures. If no active nests are found during the focused survey, no further mitigation will be required.

- BR-4.** Prior to the approval of improvement plans, building permits, or recordation of the final map, whichever occurs first, implement one of the options below to mitigate for the loss of Swainson's hawk foraging habitat on the Project site; based on current Project designs this is 2,267 acres. Based on current designs, this can be reduced to 2,231 acres of mitigation if the applicant establishes a permanent conservation easement over the areas designated Agriculture on the eastern and southeastern sides of the site (these are areas outside of the Urban Services Boundary). Foraging habitat preserved shall consist of grassland or similar habitat open habitat, not cropland, because this mitigation measure also offsets impacts to other species that do not use cropland habitat.
- A. The project proponent shall utilize one or more of the mitigation options (land dedication and/or fee payment) established in Sacramento County's Swainson's Hawk Impact Mitigation Program (Chapter 16.130 of the Sacramento County Code).
 - B. The Project proponent shall, to the satisfaction of the California Department of Fish and Game, prepare and implement a Swainson's hawk mitigation plan that will include preservation of Swainson's hawk foraging habitat.
 - C. Should the County Board of Supervisors adopt a **new** Swainson's hawk mitigation policy/program (which may include a mitigation fee payable prior to issuance of building permits) prior to the implementation of one of the measures above, the Project proponent may be subject to that program instead.

If the design of the primary avoided area on the western plateau (currently 382 acres in size) is increased in size in response to Section 404 wetland permitting requirements, the total amount of mitigation land required may be adjusted downward to reflect this increased avoidance, at the discretion of the Environmental Coordinator.

- BR-5.** Prior to construction activity (including site improvements, and building construction) focused surveys shall be conducted by a qualified biologist for burrowing owls in the construction area and within 500 feet of the construction area. Surveys shall be conducted no less than 14 days and no more than 30 days prior to commencement of construction activities. Surveys shall be conducted in accordance with "Burrowing Owl Survey Protocol and Mitigation

Guidelines” published by The California Burrowing Owl Consortium (April 1993). The following shall also apply:

- A. If no occupied burrows are found in the survey area, a letter report documenting survey methods and findings shall be submitted to the County and no further mitigation is necessary.
- B. If an occupied burrow is found the applicant shall contact the Environmental Coordinator and consult with the California Department of Fish (CDFG), prior to construction, to determine if avoidance is possible or if burrow relocation will be required.
- C. If owls are to remain on-site, a minimum of 6.5 acres of foraging habitat for each occupied burrow needs to be permanently preserved according to California Department of Fish and Game guidelines. In addition, no activity shall take place within 160 feet of an active burrow from September 1 to January 31 (wintering season) or 250 feet from February 1 through August 31 (breeding season). Protective fencing shall be placed, at the distances above, around the active burrows and no activity shall occur within the protected buffer areas. Permanent improvements shall be a minimum of 250 feet from an occupied burrow.
- D. Any impact to active owl burrows, relocation of owls, or mitigation for habitat loss shall be done in accordance with the Fish and Game “Staff Report on Burrowing Owl Mitigation” (October 17, 1995) or the version current at the time of construction. Written evidence from Fish and Game staff shall be provided to the Environmental Coordinator attesting to the permission to remove burrows, relocate owls, or mitigate for lost habitat, and shall include a plan to monitor mitigation success.

BR-6. If construction occurs between March 1 and July 31 pre-construction surveys for nesting tricolored blackbirds shall be performed by a qualified biologist. Surveys shall include the ~~project~~ construction site and areas of appropriate habitat within 300 feet of the construction site. The survey shall occur no longer than 14 days prior to the start of construction work (including clearing, grubbing or grading). The biologist shall supply a brief written report (including date, time of survey, survey method, name of surveyor and survey results) to the Environmental Coordinator prior to ground disturbing activity. If no tricolored blackbird were found during the pre-construction survey, no further mitigation would be required. If an active tricolored blackbird colony is found on-site or within 300 feet of the ~~project~~ construction site the project proponent shall do the following:

- A. Consult with the California Department of Fish and Game to determine if project activity will impact the tricolored blackbird colony(s), and implement appropriate avoidance and impact minimization measures if so directed. Provide the Environmental Coordinator with written evidence of the

consultation or a contact name and number from the California Department of Fish and Game.

- B. The applicant may avoid impacts to tricolored blackbird by establishing a 300-foot temporary setback with fencing that prevents any project activity within 300 feet of the colony. A qualified biologist shall verify that setbacks and fencing are adequate and will determine when the colonies are no longer dependent on the nesting habitat (i.e. nestling have fledged and are no longer using habitat), which will determine when the fencing may be removed. The breeding season typically ends in July.

AMPHIBIANS

As identified on Table BR-3 the Project site supports suitable habitat for two amphibian species: the California tiger salamander (*Ambystoma californiense*) and the western spadefoot toad (*Spea hammondi*).

WESTERN SPADEFOOT TOAD

The western spadefoot (*Scaphiopus (Spea) hammondi*) occurs in shallow, seasonal wetlands in valley and foothill habitats such as grasslands, open chaparral, sage scrubland, short-grass plains, and pine woodlands. Spadefoot occur in both grazed and ungrazed habitat. Adult spadefoot occupy burrows up to three feet in depth in upland habitat during dry periods to avoid desiccation (Zeiner et al., 1990). Individuals may remain in these burrows for eight to nine months. Most surface activity is nocturnal. The spadefoot leave their upland burrows for wetlands during the breeding season, which lasts from January to August, depending on rainfall. It appears that vernal pools and other temporary wetlands may be optimal for breeding due to the absence or reduced abundance of both native and nonnative predators (bullfrogs, fish, and crawfish), many of which require more permanent water sources. Current research on amphibian conservation suggests that average habitat utilization falls within 1,200 feet of aquatic habitats (USFWS 2005).

During the rare plant surveys western spadefoot toad was observed on the Project site. Wetland and vernal pool complexes on the Project site vary in size and depth and some retain water for several months. The surrounding upland area is grassland with many burrows. The Project site provides suitable breeding and non-breeding habitat to support the toad. There is no published regulatory guidance on habitat mitigation for this species.

Project development will remove potential habitat and may involve possible take of the species. According to the Vernal Pool Recovery Plan (USFWS, 2005), the western spadefoot was added as a Species of Concern in 2004. Western spadefoot has been observed in several counties across the state, and a number of sites with suitable habitat for western spadefoot are already being protected through National Wildlife Refuges, National Monuments, State Parks, State Ecological Reserves, private preserves, mitigation banks, and conservation easements. Additionally, 23 vernal pool

species are federally protected; preservation efforts for those species and associated habitats will contribute to the conservation of the western spadefoot.

While a localized population of the toad may be reduced through development of the Project site, the regional population will not be reduced significantly for the reasons stated above. Locally, conservation lands which provide habitat for the western spadefoot toad include the Mather Regional Park, Burke Ranch (1,000 acres), Gill Ranch Conservation bank (1,800 acres) and Sunrise Douglas Preservation Bank (480 acres). Further, Project preservation of 450 acres of vernal pool and associated upland habitat and other preservation/creation requirements included in mitigation for vernal pool invertebrates and wetland habitats will contribute to the local and regional conservation of western spadefoot habitat. Project impacts to the western spadefoot toad are *less than significant*.

CALIFORNIA TIGER SALAMANDER

California tiger salamander (*Ambystoma californiense*) is a Threatened species which breeds within longer-lasting vernal pools, some permanent and semi-permanent ponds, and slow-moving sections of streams. Juveniles and adults migrate from these pools to rodent burrows (ground squirrel, voles, and gopher) where they enter a dormant state during the dry months. However, in very dry years breeding may not take place at all.

California tiger salamander larvae require significantly more time to transform into juvenile adults than other species of amphibians. Ponds that can support California tiger salamander should typically sustain ponding into June, although this can be influenced by the month during which inundation began. If inundation occurs earlier in the season, the wetland need not last through June. The larval stage of the species lasts 3 to 6 months, and the larvae will die if they have not metamorphosed into adults before the pond dries. Therefore, in order to be considered potential habitat, ponding must be maintained for a minimum of approximately 90 days (USFWS, 2004). Water bodies that do not dry during the summer months are typically not considered habitat, because such persistent water bodies support bullfrogs (*Rana catesbeiana*) and other predators. A strong negative association between bullfrogs and California tiger salamanders has been documented.

The Project site contains vernal pools, which is suitable breeding habitat, and the surrounding grasslands are suitable as upland habitat for California tiger salamander. Although suitable habitat is present, the Project site is outside of the current known range of the species; California tiger salamander have only been observed south of the Cosumnes River. ECORPs Consulting Incorporated provided a memorandum discussing the probability of species occurrence on the Project site, which included a review of surveys conducted north of the Cosumnes River and east of the Sacramento River, as well as a review of Fish and Wildlife Biological Opinions (BO) covering projects occurring north of the Cosumnes River. None of the surveys detected the species, and all eight BOs reviewed indicated that the projects were outside of the species' range (the memorandum dated 11-1-11 and BOs are contained in Appendix BR-4). On this

basis, it is concluded that the species does not occur on the site, and that no mitigation is required; impacts are *less than significant*.

INVERTEBRATES

The Project site contains vernal pool complexes and seasonal wetlands that support a variety of species. However, the following invertebrates have either been observed on the site or have a high potential to exist on the Project site: California linderiella, midvalley fairy shrimp, Ricksecker's water scavenger beetle, vernal pool fairy shrimp, and vernal pool tadpole shrimp. All of these species are associated with vernal pool and wetland environments and are not readily observed through casual observation. Thus, lack of recorded sightings is not cause to conclude that the species is not present.

If suitable habitat is present, the species must be assumed to be present unless surveys have found the species to be absent. Discussion of the California linderiella, midvalley fairy shrimp, vernal pool fairy shrimp, and vernal pool tadpole shrimp are grouped under the heading of Vernal Pool Crustaceans, because the survey protocols and mitigation requirements are applied to all four species.

VERNAL POOL CRUSTACEANS

California linderiella, midvalley fairy shrimp, vernal pool fairy shrimp, and vernal pool tadpole shrimp use the same habitat types, though California linderiella tends to prefer deeper pools. The shrimp feed on algae, bacteria, protozoa, rotifers and bits of detritus. The females carry their eggs in a ventral brood sac until they are dropped to the bottom of the pool, or the mother dies and sinks. At the end of the rainy season, as the pool dries up, the eggs remain in a dormant stage in the dried pool until the rains of the next season, or other environmental stimuli cause them to hatch. Cysts will hatch when the pool refills, although not all cysts present will hatch during the following rainy season, and they may remain dormant in the soil for multiple seasons.

Survey requirements and mitigation protocols published by Fish and Wildlife ("Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods" published April 19, 1996 and the Programmatic Formal Endangered Species Act Consultation published on February 28, 1996) are only required by Fish and Wildlife for the two species listed under the ESA: vernal pool fairy shrimp and vernal pool tadpole shrimp. However, the discussions and mitigation below apply them to the two Species of Concern, California linderiella and midvalley fairy shrimp.

All four crustacean species are recorded in the CNDDDB as occurring within 1.5 miles of the site, while the nearest CNDDDB record (#128, vernal pool tadpole shrimp) is adjacent to the southwestern Project boundary (tadpole shrimp were observed in pools within the footprint for the landfill expansion Project in 1994). Based on the proximity of recorded sightings, it is reasonable to assume that the various shrimp species are present on the site as well. Furthermore, protocol surveys have not been performed for the site.

Surveys to determine presence of absence of ESA-listed crustaceans must include either 2 years of wet season surveys completed within a 5-year period or consecutive

wet season and dry season surveys. In the absence of surveys, presence should be assumed.

A Fish and Wildlife programmatic consultation was published for ESA-listed vernal pool crustaceans on February 28, 1996. Programmatic consultation can only be used by Projects involving a maximum impact of one acre, and thus the Project must be individually permitted through the Army Corps and the Fish and Wildlife. Individual permit requirements are varied, depending upon the quality of the habitat lost, the nature of the impact, and the quality of the mitigation land offered – among other factors. This variation can be observed through review of the BOs in Appendix BR-4, which were included as part of the California Tiger Salamander discussion, but which also cover special status branchiopods.

The programmatic consultation indicates that all habitats within 250 feet of proposed development may be subject to indirect impacts, though this buffer distance can be smaller as part of the individual permitting process. In absence of the permit, for complete avoidance vernal pools must be avoided by a minimum of 250 feet. Encroachment within this buffer may only occur if approved by Fish and Wildlife. Based on this guidance all vernal pools within 250 feet of proposed roads, trails, and land development will be indirectly impacted. Further, the watershed analysis described in the wetland impacts section noted that some vernal pools on the fringe of the Avoided Areas may have shorter inundation durations. Shorter inundation durations may mean a change in the pools temperature, depth, and pH. Features that may have been utilized by species that required specific inundation durations for the completion of breeding cycles may no longer provide suitable habitat. While the features will likely retain some function for other special status species and plants, the loss of suitable habitat for other species would constitute an indirect loss for the local biological community. The Project will both remove some wetlands and encroach within the 250-foot buffer of other wetlands not removed.

Ultimately, mitigation requirements will be defined through the individual permitting process, but consistent with Sacramento County General Plan policy the mitigation below stipulates a minimum of 1:1 mitigation for habitat lost. It is probable that the individual permit requirements will require a larger amount of mitigation, and it is also possible that Fish and Wildlife will require that mitigation occurs within the Mather core area. The Project will reduce local populations of California linderiella, midvalley fairy shrimp, vernal pool fairy shrimp, and vernal pool tadpole shrimp. Though in-kind mitigation will be required for the loss of habitat on the site, the loss of 46% of the wetlands on the site within an area described as vital to the recovery for vernal pool habitats and their dependent species is significant even with mitigation; impacts are *significant and unavoidable*.

RICKSECKER'S WATER SCAVENGER BEETLE

The Ricksecker's water scavenger beetle is an aquatic beetle that lives in weedy, shallow, open water, associated fresh water seeps, springs, farm ponds, vernal pools, and slow-moving stream habitats. The Fish and Wildlife species profile⁶ only contains listing status and a general map, as little is known about the life history of the species. It is listed primarily due to its association with in-decline habitats, rather than based on known population trends. The beetle is known to co-occur with vernal pool fairy shrimp. There are no recorded occurrences of Ricksecker's water scavenger beetle in the Project vicinity, but they are assumed to be present in the Project area due to the presence of suitable habitat.

Neither survey nor mitigation protocols for this species have been published by Fish and Wildlife. Since population trends have not been well established, it is unclear to what extent the species relies on the rarer vernal pool and seasonal wetland habitats versus more abundant surface water types. For the purposes of this analysis, it is assumed that local populations of the species have at least some dependency on vernal pool and seasonal wetland habitats, since this is the more conservative assumption. Since the Project is within an area described as vital for the conservation of vernal pool habitats, loss of 46% of the wetlands on the site will result in *significant and unavoidable* impacts to the species.

Mitigation below indicates that if protocol surveys indicate absence of all four species of crustacean, as described in the section above, then it may also be assumed that Ricksecker's water scavenger beetle is absent. Since the species occupies the same habitat as listed crustaceans, mitigation for wetland crustaceans will also serve as feasible mitigation for impacts to the Ricksecker's water scavenger beetle.

MITIGATION MEASURE:

BR-7. Presence of California linderiella, midvalley fairy shrimp, vernal pool fairy shrimp and vernal pool tadpole shrimp shall be assumed unless determinate surveys that comply with U.S. Fish and Wildlife protocol conclude that the species are absent. If the protocol surveys are performed and all listed crustacean species are absent, Ricksecker's water scavenger beetle may also be presumed absent, and no further mitigation shall be required for listed vernal pool invertebrates. If species are found, one or a combination of the following shall apply:

- A. *Total Avoidance: Species are present or assumed to be present.* Unless a smaller buffer is approved through formal consultation with the Fish and Wildlife Service, construction fencing shall be installed a minimum of 250 feet from all delineated vernal pool margins. All construction activities are

⁶ <http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=I0FE>

prohibited within this buffer area. For all vernal pools where total avoidance is achieved, no further action is required.

- B. *Compensate for habitat removed.* Obtain all applicable permits from the U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, California Department of Fish and Game, and the Central Valley Regional Water Quality Control Board for any proposed modifications to vernal pools and mitigate for habitat loss in accordance with the Biological Opinion and Section 404 permits obtained for the Project. At a minimum, mitigation ratios shall be consistent with County General Plan Policy, which requires no net loss of wetland resources. Any vernal pool loss not mitigated through the permitting process shall be mitigated for by payment into a mitigation bank or protection of off-site wetlands through the establishment of a permanent conservation easement, subject to the approval of the Environmental Coordinator.

PLANTS

Plant species that have been known to occur within the Project area, based on databases maintained by Fish and Wildlife and Fish and Game, are noted in Table BR-3. The Project site was surveyed for special status plant species in May 2007, April and June 2008, and May and July 2010 by ECORP Consulting Inc. The surveys were conducted in accordance with guidelines developed by Fish and Wildlife (2000), Fish and Game (1983), and the California Native Plant Society (CNPS, 2001). The special status plant surveys revealed two special status species present on the Project site: *Legenere* (*Legenere limosa*) and Sacramento Orcutt grass (*Orcuttia viscida*). Species for which habitat is present but that were not observed on the Project site include: dwarf downingia (*Downingia pusilla*), Boggs Lake hedge-hyssop (*Gratiola heterosepala*), pincushion navarretia (*Navarretia myserii*), slender Orcutt grass (*Orcuttia tenuis*), and Sanford's arrowhead (*Sagittaria sanfordii*).

Sacramento Orcutt grass was previously observed on the Project site in 1995 (described in further detail below). Based on the comparison between location information and population size of the original species observation as detailed in the CNDDB and the recent surveys conducted for the proposed Project, the species has not successfully migrated from this known source pool to colonize other pools in the survey area. Thus, the probability of this species colonizing other pools over the life of the phased Project is low. However, Fish and Wildlife may require new surveys if the original surveys become outdated (defined as more than five years old).

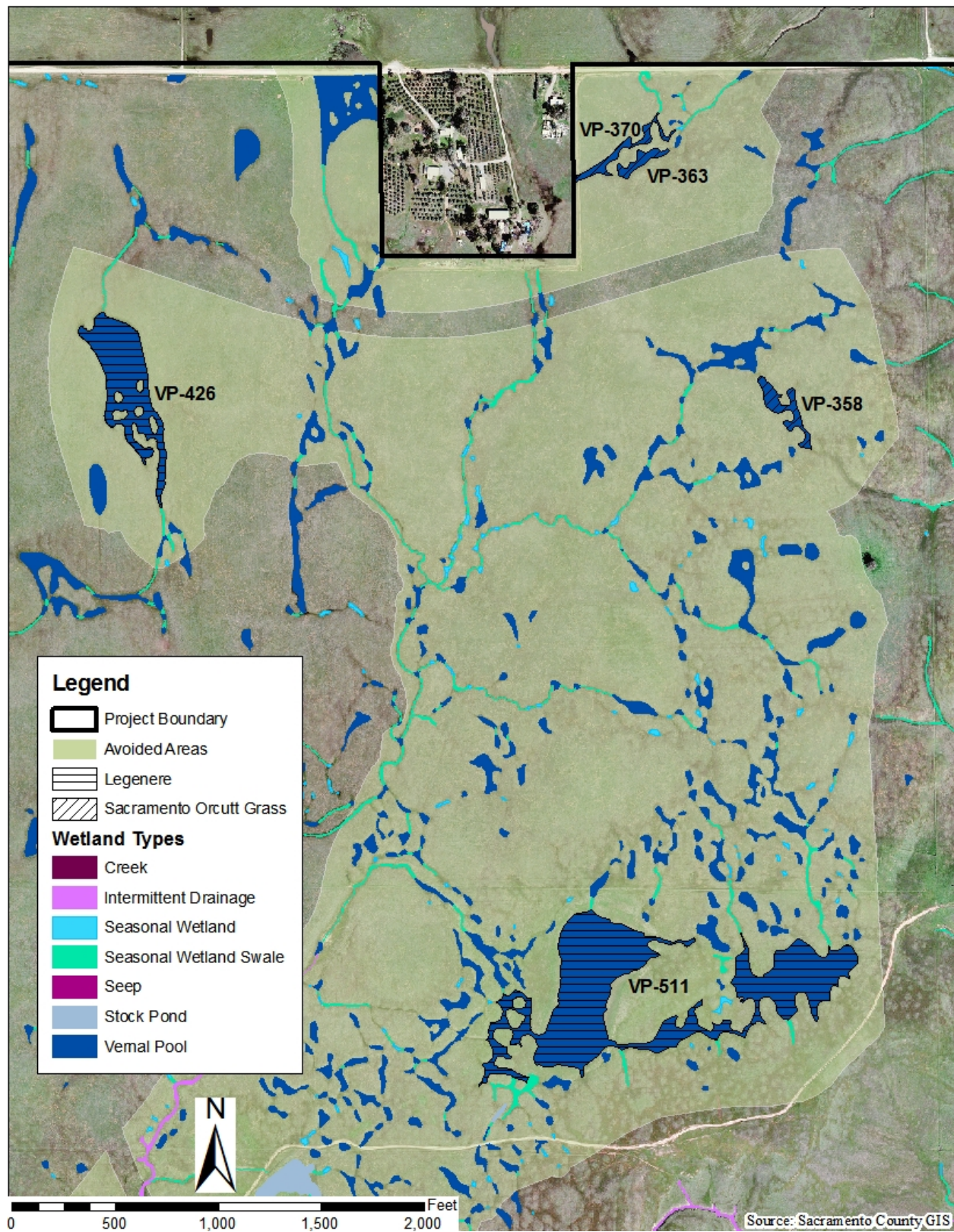
LEGENERE

Legenere is a weakly erect or decumbent annual herb that grows in moist or wet ground. The plant has yellow flowers, which are produced between May and June and extend from the main body of the plant on long, slender pedicels. This species occurs in drying beds of vernal pools in valley grassland ranging from sea level to 1,400 feet in elevation. It has been found throughout the Sacramento Valley.

During the rare plant survey in 2008, legenere was observed on the Project site. The plant was found in two vernal pools (VP-426 and VP-511; Plate BR-8). According to the survey, several hundred individuals were estimated to occur within each vernal pool. Both the avoidance/impact plan and the open space overlay clearly indicate that the pools containing legenere will be avoided. However, based on rough measurements using the aerial photo overlay, ground disturbing activities may occur within the 250 ft avoidance buffer for VP-426. Possible indirect impacts to legenere may include pollution run-off and pesticide drift. Mitigation is recommended to either remain outside of the 250 foot buffer, or if development occurs within the 250 foot buffer to prepare a pesticide and pollution prevention plan to mitigate for any indirect impacts to legenere, subject to Fish and Wildlife approval.

It is recognized that the SPA does indicate that landscaping design requirements will ensure that the Avoided Area interface with urban areas will include landscaping and stormwater treatments that are designed to protect natural resources (SPA Section 4.14.6). Details have not been provided at this time, so a determination of the sufficiency of these measures cannot be made. Mitigation has been added to ensure impacts to legenere are *less than significant*.

Plate BR-8: Location of Legenere and Sacramento Orcutt Grass



SACRAMENTO ORCUTT GRASS

Sacramento Orcutt is a small, densely tufted annual grass. It grows to about one to four inches tall. The plant is covered with small glandular hairs and is sticky. The plant has few to many stems and spike-like inflorescence clustered near the apex (USFWS, 2010). Orcutt grasses are strongly adapted to the more extreme hydrological cycles encountered in the spectrum of vernal pool types, e.g., they are typically associated with larger and/or deeper vernal pools. Orcutt grass plants are able to produce most of their aboveground vegetative growth, as well as flowers and seed as the vernal pools dry down in late spring and early to mid-summer (Crampton 1959). Sacramento Orcutt grass seeds germinate during the later spring months after cessation of winter rains as the shallow water at the pool margins begins to warm and recede (Griggs 1974, Holland 1987, Stone et al. 1988). Sacramento Orcutt grass plants flower and set seed as the margins and basin of the vernal pools dry from April through July.

Several occurrences of Sacramento Orcutt grass have been reported within 10 miles of the site (CDFG 2003) including two CNDDDB recorded occurrences, #19, just south of Glory Lane along the northern boundary of the site and #1, immediately southwest of the Project. Occurrence #1 was originally observed in 1998 with an estimated population of several thousand. Occurrence #19 was originally observed in 1995 with an estimated population of 1.2 million individuals. In 2008, the plant was observed in three vernal pools during Project specific plant surveys. These features coincide with the general area that was previously documented in the CNDDDB.

The vernal pools in which the plant was found are VP-358, VP-363, and VP-370 (Plate BR-8). According to the 2008 report, approximately 200 – 400 individuals were estimated within VP-370 and VP-363, and several thousand individuals were estimated within VP-358. ECORP botanists noted that manna grass (*Glyceria declinata*) appears to be invading VP-370 and that Sacramento Orcutt did not grow where manna grass was present. According to the Fish and Wildlife Five Year Review report prepared as part of the Recovery Plan, this population of Sacramento Orcutt grass is one of eight identified populations within the county. The greatest threats to Sacramento Orcutt are development and invasive species. Both the avoidance/impact plan and the open space overlay clearly indicate that the pools containing Sacramento Orcutt grass will be avoided. However, invasive species, primarily manna grass, are present within pool VP-370. Invasive species may also be introduced from private gardens and landscaping that surround preserved areas. Measures should be taken to reduce the threat of invasive species to existing wetland complexes. Mitigation is recommended to develop an invasive species prevention plan which includes provisions for restoration of vernal pools should preventive measures fail. Avoidance of direct impacts coupled within mitigation for potential indirect impacts will ensure that impacts to Sacramento Orcutt grass are *less than significant*.

MITIGATION MEASURES:

BR-8. If construction activities encroach within the 250-foot buffer for vernal pools 358, 363, 370, 426 or 511 the applicant shall prepare a pesticide and pollution

prevention plan. The plan shall include measures to reduce pollution run-off, pesticide drift, and other similar potential contaminants, to protect surrounding preserve areas from urban contaminants. Measures shall include the implementation of best management practices (e.g. straw wattles, silt fencing, and soil stabilization) for stormwater control. The plan shall be incorporated in the Operations and Management Plan which is a requirement of the Section 404 permit process.

- BR-9.** The project applicant shall prepare an invasive species removal and prevention plan. The plan shall provide methods to remove invasive species from preservation areas and to restore the affected wetland features. The plan shall include methods for the prevention of the introduction of new invasive species from landscapes associated with the development. Minimum components of such a plan shall include: mapping of existing invasive plant populations within the avoided areas, with the map being updated a minimum of every five years; a description of acceptable methods for removing invasive species, examples of which include hand removal or biological controls (e.g. natural parasites); and a prohibition on the use of non-native plants within either the avoided areas or the Recreation-2 areas. The plan shall be incorporated in the Operations and Management Plan which is a requirement of the Section 404 permit process.

ACKNOWLEDGEMENTS

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