6.1 TRANSPORTATION AND CIRCULATION

6.1.1 INTRODUCTION

This section of the EIR presents the results of TJKM's traffic impact analysis of the proposed Greenbriar Development. The analysis includes consideration of automobile traffic impacts on local roadway capacity and capacity on Interstate 5 (I-5) and State Route 70/99 (SR 70/99) and existing and proposed transit, bicycle, and pedestrian facilities.

Quantitative analyses of weekday a.m. and p.m. commuter hour conditions have been conducted for the following five scenarios:

- Existing Conditions
- Baseline Conditions
- Baseline (Existing plus Approved Projects) plus Project Conditions
- Cumulative (2025) Conditions
- Cumulative (2025) plus Project Conditions

These scenarios are described in greater detail in Section 6.1.4, "Impacts and Mitigation Measures," below.

PROPOSED PROJECT

The project would consist of 3,473 residential units (low density: 671; medium density: 2,215; high density: 587), 11.2 acres of village commercial, 16.3 acres of community commercial, a 10.0-acre elementary school, neighborhood parks, a lake/detention basin, and an open space/buffer. The project site is currently vacant and located on the northwestern corner of I-5 and SR 70/99 interchange.

6.1.2 ENVIRONMENTAL SETTING

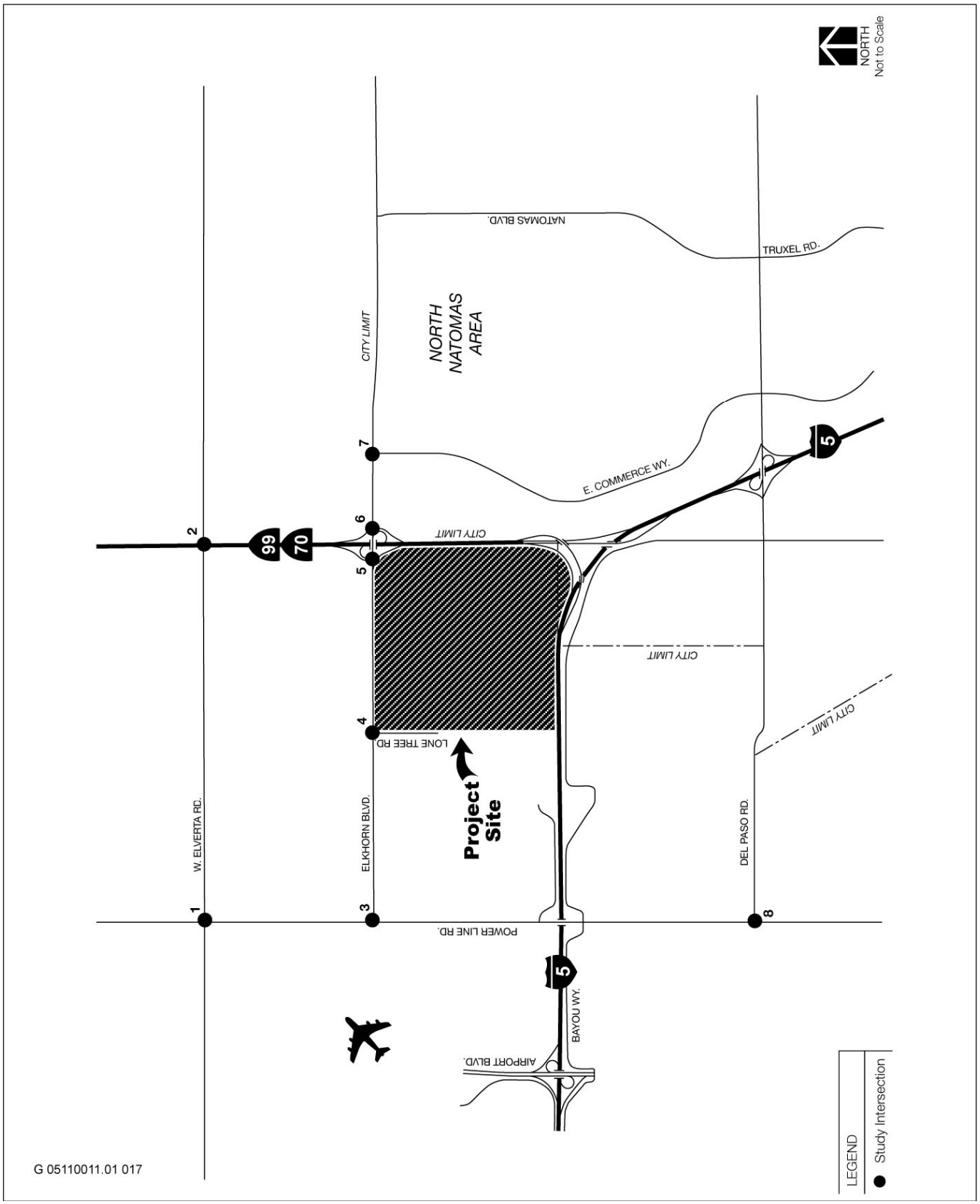
Exhibit 6.1-1 illustrates the roadway system near the project site.

ROADWAY SYSTEM – REGIONAL ACCESS

Regional access to the project site is provided by the freeway system that serves northwest Sacramento including I-5 and SR 70/99.

I-5 is an eight-lane freeway that runs in an east/west direction within the study area. Access to I-5 is currently via State Route 99. I-5 serves as a commute corridor between downtown Sacramento and the northern and southern portions of the City and County. It also provides access to the Sacramento International Airport west of the site and other Central Valley communities (e.g., cities of Woodland and Davis). A future interchange (I-5/ Metro Air Parkway Interchange) is planned approximately one-half mile west of the project site. This interchange would provide direct access to I-5 from the project site through the approved Metro Airpark development (adjacent and west of the project site).

SR 70/99 is a four-lane highway that runs in a north/south direction within the study area. State Route 70/99 serves as a commute corridor between the City of Sacramento and the Yuba City, Marysville, Chico areas and Sutter County to the north of the project site. SR 70/99 provides direct access to the project site via on/off-ramps at Elkhorn Boulevard. North of its interchange with Elkhorn Boulevard, it continues as a divided highway with two travel lanes per direction. It has a grade-level intersection with Elverta Road. North of its interchange with Elkhorn Boulevard, it continues as a divided highway with two travel lanes in each direction. It has a grade-level intersection with Elverta Road.



Source: TJKM 2005

Roadways within the Project Vicinity **Exhibit 6.1-1**

LOCAL ACCESS

Local access to the project site is provided via Elkhorn Boulevard, East Commerce Way, Elverta Road, Powerline Road and Del Paso Road, as described below.

Elkhorn Boulevard is a two-lane road that runs in an east/west direction and serves as the northern boundary to the project site. West of SR 70/99, Elkhorn Boulevard continues to Powerline Road. To the east, it continues to the Rio Linda and North Highlands areas of Sacramento County. Elkhorn Boulevard connects to SR 70/99 at the northeastern corner of the project site via on and off-ramps providing access to northbound and southbound SR 70/99.

East Commerce Way is an existing two-lane roadway that runs in a north/south direction parallel to and about 0.4-mile east of I-5. East Commerce Way is planned to be a six lane arterial. East Commerce Way extends from Elkhorn Boulevard in the north to Del Paso Road to the south. It extends about 0.9-mile south of Del Paso Road where it intersects with Arena Boulevard.

Elverta Road is a two-lane roadway that runs in an east/west direction approximately one mile north of the project site. Elverta Road has a grade-level signalized intersection at State Route 70/99. Elverta Road connects with Powerline Road west of SR 70/99.

Powerline Road is a two-lane roadway that runs in a north/south direction within the project study area. It is located adjacent to the eastern boundary of the Sacramento International Airport approximately one mile west of the project site. Powerline Road extends south of Elverta Road where it crosses I-5 with a two-lane overcrossing and extends south to intersect with Del Paso Road.

Del Paso Road is a two-to-four lane east-west roadway approximately one mile south of the project site that provides access to I-5 via a full interchange. West of I-5, Del Paso Road is a two-lane roadway. Del Paso Road is a six-lane roadway between I-5 and East Commerce Way. East of East Commerce Way, Del Paso Road has three eastbound and two westbound lanes.

PEDESTRIAN AND BICYCLE FACILITIES

Currently, no pedestrian and bicycle facilities exist at the project site or along Powerline Road, Elkhorn Boulevard, or Elverta Road. On street bike lanes exist at several locations along Del Paso Road and six-foot wide bike lanes exist on both sides of East Commerce Way.

TRANSIT SYSTEM

The Sacramento Regional Transit District (RT) operates 80 bus routes and 38 miles of light rail covering a 418 square-mile service area. Buses and light rail run 365 days a year using 97 light rail vehicles, 258 buses powered by compressed natural gas (CNG), and 17 shuttle vans. Buses operate daily from 5:00 a.m. to 11:30 p.m. every 15 to 60 minutes, depending on the route. Light rail trains operate from 4:30 a.m. to 1:00 a.m. daily with service every 15 minutes during the day and every 30 minutes in the evening. No bus or light rail service is currently provided to the project area or between the project site and the Sacramento International Airport. Transit services to the Airport area are provided by Yolo bus, private limousine and taxi services.

EXISTING TRAFFIC CONDITIONS

The following discussion includes a description of the existing conditions of intersections and roadways in the study area.

EVALUATION CRITERIA

Existing Intersection Traffic Volumes

Eight existing study intersections and fourteen future intersections were analyzed. The study area is near the North Natomas area of Sacramento and adjacent and west of the Sacramento International Airport (Exhibit 6.1-1). Two major highways, I-5 and SR 70/99, are within the study area. Specific study intersections, ramps, roadway and freeway segments are listed in Section 6.1.4, "Impacts and Mitigation Measures." A total of four roadway segments, ten existing and twelve future freeway ramps, and five freeway segments were analyzed.

The existing a.m. and p.m. peak-hour traffic volume counts for seven study intersections were conducted in June 2005 by TJKM. The existing peak-hour intersection volumes are shown in Exhibit 6.1-2. The traffic count data are included in Appendix B.

Freeway Mainline Traffic Volumes

The existing a.m. and p.m. peak-hour traffic volume counts for eight study ramps were conducted in June 2005 by TJKM. The freeway mainline counts (2005) used in the analysis were obtained from Caltrans District 3. This traffic data are also included in Appendix B.

Intersection Lane Configurations

The existing lane configurations at the study intersections were determined by TJKM based on field observations. The existing intersection lane configurations are shown in Exhibit 6.1-3.

Definition Level of Service

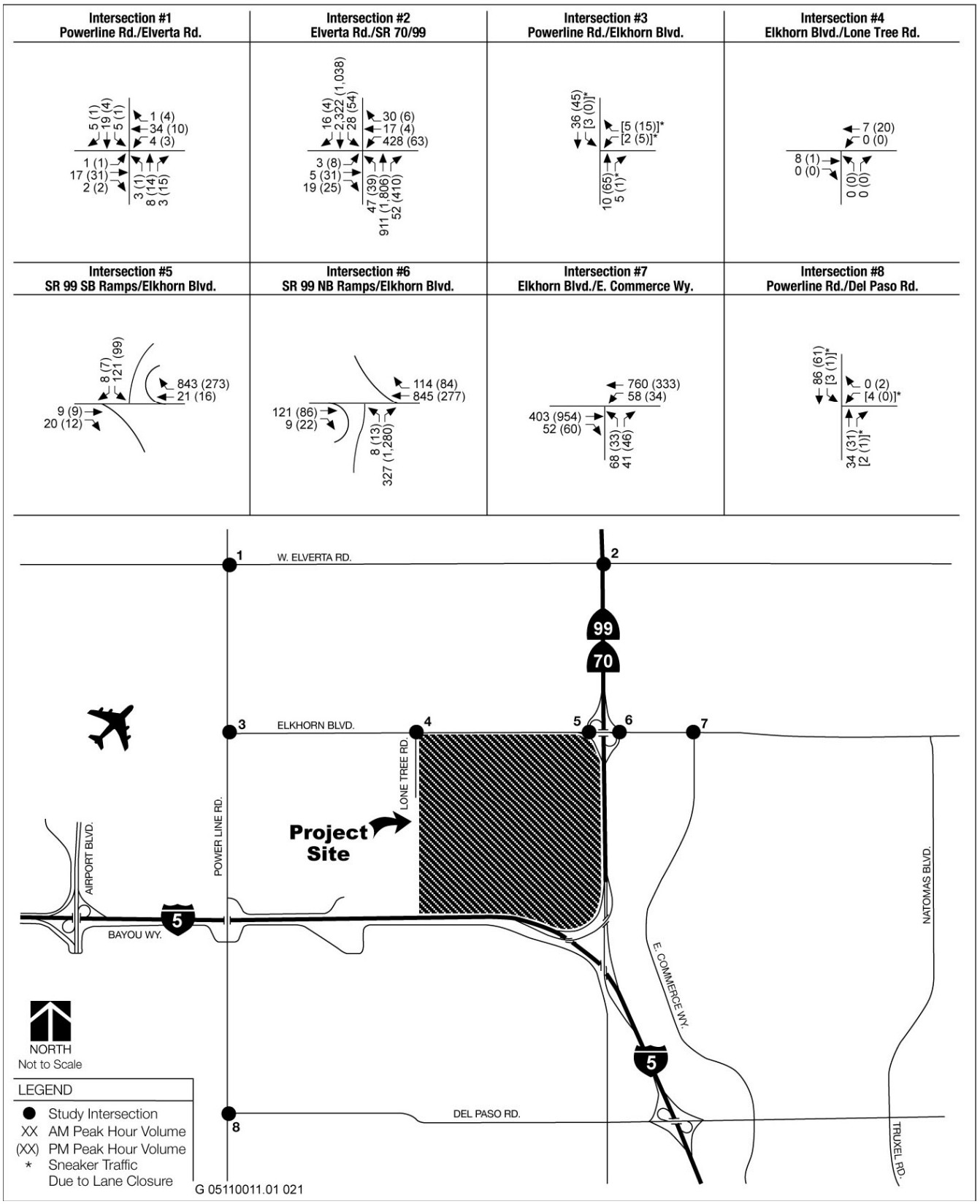
Level of service is a qualitative measure describing operational conditions at an intersection. The level of service generally describes these conditions in terms of average delay per vehicle. Six levels of service are defined and given letter designations from A to F, with Level of Service (LOS) A representing the best operating conditions and LOS F the worst.

Signalized Intersections

The operating conditions at the City study signalized intersections were evaluated using the Highway Capacity Manual (2000 HCM) Operations Method as incorporated into the standard traffic engineering software package SYNCHRO (version 5). Peak-hour intersection conditions are reported as average delay per vehicle with corresponding levels of service for the intersection as a whole and for each approach. The operating conditions at County study signalized intersections were evaluated using volume-to-capacity ratio based on the Intersection Capacity Utilization methodology, which is similar to the Circular 212 methodology. With both methodologies, LOS A indicates free flow conditions with little or no delay, while LOS F indicates jammed conditions with excessive delay and long back-ups. Table 6.1-1 below describes the LOS criteria for signalized intersections.

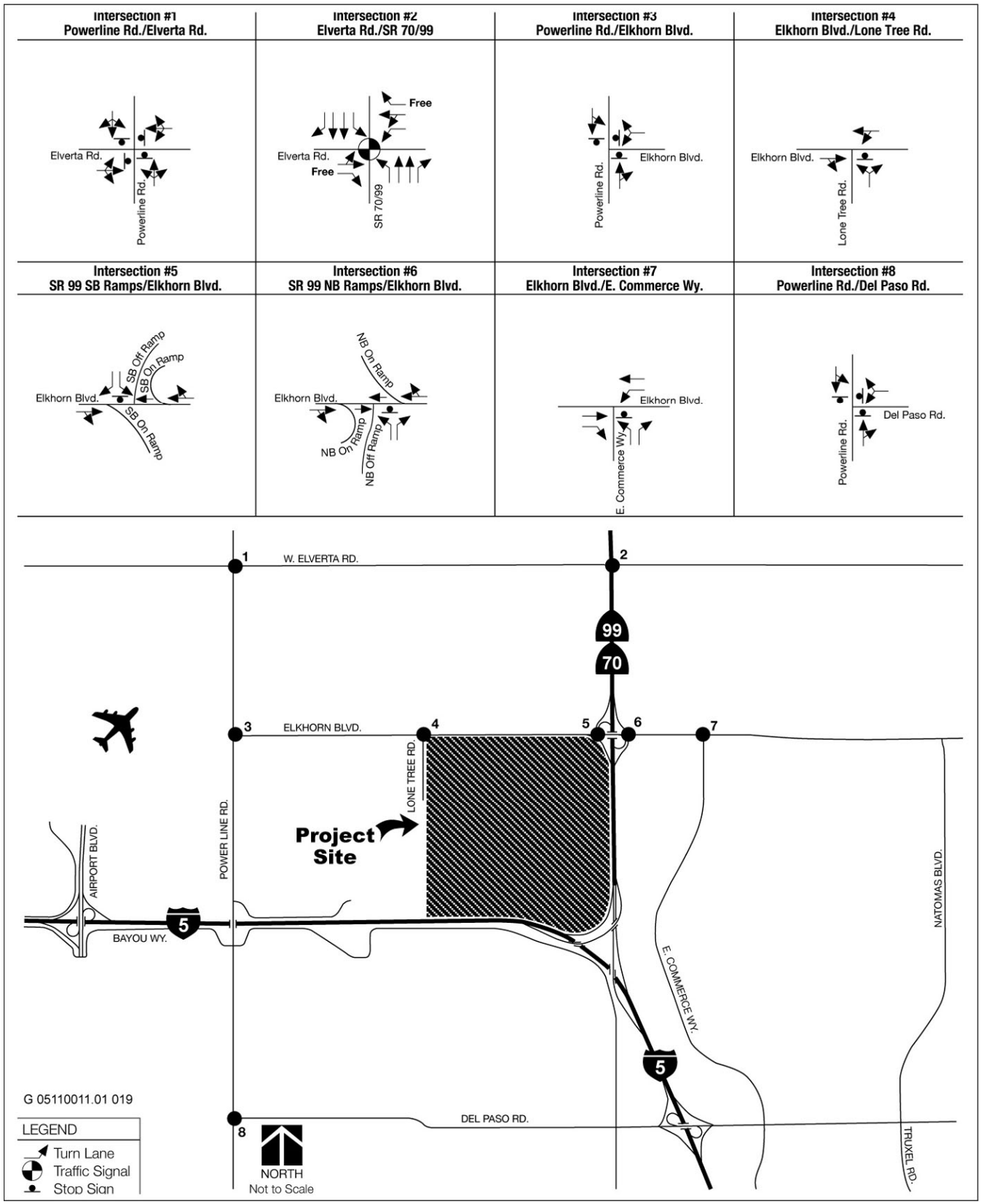
Unsignalized Intersections

The operating conditions at the stop (i.e., unsignalized) controlled intersections were evaluated using the 2000 HCM methodology for unsignalized intersections. This method also ranks the level of service on an A through F scale, and also uses average delay in seconds as its measure of effectiveness. Peak-hour intersection conditions are reported as delay per vehicle with corresponding LOS for the intersection as a whole and for each approach. Table 6.1-2 below lists the LOS criteria for unsignalized intersections.



Source: TJKM 2005

Existing Peak-Hour Turning Movement Volumes **Exhibit 6.1-2**



Source: TJKM 2005

Existing Lane Configurations **Exhibit 6.1-3**

Table 6.1-1 Level of Service Criteria for Signalized Intersections				
Level of Service	Control Delay per Vehicle (seconds/vehicle)	Sum of Critical Lane Volumes by Signal Phasing (vehicles/critical land/hour)		
		2-Phase	3-Phase	4 or more Phase
A	≤ 10	0–990	0–930	0–900
B	> 10–20	991–1,155	931–1,085	901–1,050
C	> 20–35	1,156–1,320	1,086–1,240	1,051–1,200
D	> 35–55	1,321–1,485	1,241–1,395	1,201–1,350
E	> 55–80	1,486–1,650	1,396–1,550	1,351–1,500
F	> 80	> 1,650	> 1,550	> 1,500
Sources: *Highway Capacity Manual*, Transportation Research Board 2000 *Traffic Impact Analysis Guidelines*, County of Sacramento, July 2004				

Table 6.1-2 Level of Service Criteria for Unsignalized Intersections	
Level of Service	Control Delay per Vehicle (seconds/vehicle)
A	≤ 10
B	> 10–15
C	> 15–25
D	> 25–35
E	> 35–50
F	> 50
Source: *Highway Capacity Manual*, Transportation Research Board 2000.	

Roadway Segments

The arterial level of service analysis was conducted based on the Urban Street LOS methodology described in the 2000 Highway Capacity Manual. The maximum daily volume to achieve LOS E on an arterial with moderate access control (2–4 stops/mile, limited driveways and speeds 35–45 miles per hour) are summarized in Table 6.1-3. These values are from Exhibit A of the City of Sacramento *Traffic Impact Guidelines* (1996) and Table 2 of the County of Sacramento *Traffic Analysis Guidelines* (2004).

Table 6.1-3 Level of Service Criteria for Roadways Segments					
Number of Lanes	Maximum Volume for Given Service Level for an Arterial with moderate access control				
	LOS A	LOS B	LOS C	LOS D	LOS E
2	10,800	12,600	14,400	16,200	18,000
4	21,600	25,200	28,800	32,400	36,000
6	32,400	37,800	43,200	48,600	54,000
Sources: *Traffic Impact Guidelines*, City of Sacramento 1996; *Traffic Impact Analysis Guidelines*, County of Sacramento 2004					

Freeway Facilities

The operating conditions at the study ramps were evaluated using the 2000 HCM Operations Method as incorporated into the Highway Capacity Software (HCS 2000). Table 6.1-4 lists the freeway ramps merge and diverge LOS criteria. Tables 6.1-5 and 6.1-6 lists the LOS definitions for freeway ramps and mainline segments, respectively.

Table 6.1-4
Freeway Ramp Merge and Diverge Level of Service Criteria

Level of Service	Description	Density[1]
A	Free-flow speeds prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream.	≤ 10
B	Free-flow speeds are maintained. The ability to maneuver with the traffic stream is only slightly restricted.	> 10–20
C	Flow with speeds at or near free-flow speeds. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more care and vigilance on the part of the driver.	> 20–28
D	Speeds decline slightly with increasing flows. Freedom to maneuver with the traffic stream is more noticeably limited, and the driver experiences reduced physical and psychological comfort.	> 28–35
E	Operation at capacity. There are virtually no usable gaps within the traffic stream, leaving little room to maneuver. Any disruption can be expected to produce a breakdown with queuing.	> 35–43
F	Represents a breakdown in flow.	> 43

Notes: [1] Density in passenger cars per mile per lane.
Source: *Highway Capacity Manual*, Transportation Research Board 2000

Table 6.1-5
Freeway Ramp Level of Service Definitions

Level of Service	Service Flow Rates for Single Lane/Two Lane Ramps Ramp Design Speed (MPH)					Definition
	≤ 20	21–30	31–40	41–50	≥ 51	
A	-	-	-	-	800/ 1,550	Conditions of free flow; speed is controlled by driver's desires, speed limits, or physical conditions.
B	-	-	-	1,150/ 2,250	1,150/ 2,350	Conditions of stable flow; operating speeds beginning to be restricted; little or no restriction on maneuverability from other vehicles.
C	-	-	1,400/ 2,600	1,600/ 3,100	1,700/ 3,350	Conditions of stable flow; speeds and maneuverability more closely restricted.
D	-	1,550/ 2,900	1,700/ 3,200	1,950/ 3,850	2,050/ 4,150	Conditions approach unstable flow; tolerable speeds can be maintained, but temporary restrictions may cause extensive delays; little freedom to maneuver; comfort and convenience low.
E	1,800/ 3,200	1,900/ 3,500	2,000/ 3,800	2,100/ 4,100	2,200/ 4,400	Conditions approach capacity; unstable flow with stoppages of momentary duration; maneuverability severely limited.
F	Widely Variable					Forced flow conditions; stoppages for long periods; low operating speeds.

Notes: - Level of service not attainable due to restricted design speed.
Source: *Highway Capacity Manual*, Transportation Research Board 2000

Table 6.1-6
Freeway Mainline Level of Service Criteria

Level of Service	Maximum Volume to Capacity Ratio	Maximum Density[1]
A	0.29	10
B	0.47	16
C	0.68	24
D	0.85	35
E	1.00	45
F	Varies	Varies

Notes: [1] Density in passenger cars per mile per lane.
Source: *Highway Capacity Manual*, Transportation Research Board 2000

Study Intersections, Roadway Segments, Freeway Ramps, and Mainline Segments

The study focused on evaluating traffic conditions at eight existing intersections and six future intersections in the project vicinity selected in collaboration with the City of Sacramento staff (see Exhibit 6.1-1). The City/County limit line is essentially the centerline of Lone Tree Road, with the County of Sacramento to the west of the centerline and the City to the east.

The study intersections, roadway segments, freeway ramps and freeway mainline segments are as follows:

Existing Study Intersections

1. Powerline Road and Elverta Road (County)
2. Elverta Road and SR 70/99 (Caltrans)
3. Powerline Road and Elkhorn Boulevard (County)
4. Elkhorn Boulevard and Lone Tree Road (City/County)
5. SR 70/99 Southbound Ramps and Elkhorn Boulevard (Caltrans)
6. SR 70/99 Northbound Ramps and Elkhorn Boulevard (Caltrans)
7. Elkhorn Boulevard and East Commerce Way (City)
8. Powerline Road and Del Paso Road (County)

Future Study Intersections

2a. SR 70/99 Southbound Ramps and Elverta Road (Caltrans)
2b. SR 70/99 Northbound Ramps and Elverta Road (Caltrans)
9. Metro Air Parkway and I-5 Northbound Ramps (Caltrans)
10. Metro Air Parkway and I-5 Southbound ramps (Caltrans)
11. Elverta Road and Lone Tree Road (City/County)
12. Metro Air Parkway and Elverta Road (County)
13. Elkhorn Boulevard and Metro Air Parkway (County)
14. Meister Way and Metro Air Parkway (County)
15. Meister Way and Lone Tree Road (City/County)
16. Meister Way and East Commerce Way (City)
17. Metro Air Parkway and Bayou Road (County)
18. Elkhorn Boulevard and Project Street 1 Driveway (City)
19. Elkhorn Boulevard and Project Street 2 Driveway (City)
20. Elkhorn Boulevard and Project Street 3 Driveway (City)

Existing Roadway Segments

1. Elkhorn Boulevard west of SR 70/99 Interchange (City)
2. Lone Tree Road south of Elkhorn Boulevard (City/County)

Future Roadway Segments

1. Metro Air Parkway north of I-5 Interchange (County)
2. Meister Way west of SR 70/99 (City)

Existing Freeway Ramps

1. Elkhorn Boulevard to SR 70/99 Northbound (loop on-ramp)
2. Elkhorn Boulevard to SR 70/99 Northbound (on-ramp)
3. SR 70/99 Northbound to Elkhorn Boulevard (off-ramp)
4. SR 70/99 Southbound to Elkhorn Boulevard (off-ramp)

5. Elkhorn Boulevard to SR 70/99 Southbound (loop on-ramp)
6. Elkhorn Boulevard to SR 70/99 Southbound (on-ramp)
7. SR 70/99 Southbound to I-5 Northbound (off-ramp)
8. I-5 Southbound to SR 70/99 Northbound (off-ramp)
9. SR 70/99 Southbound to I-5 Southbound (on-ramp)
10. I-5 Northbound to SR 70/99 Northbound (off-ramp)

Future Freeway Ramps

11. I-5 Northbound to Metro Air Parkway (off-ramp)
12. Metro Air Parkway to I-5 Northbound (on-ramp)
13. Metro Air Parkway to I-5 Northbound (loop on-ramp)
14. I-5 Southbound to Metro Air Parkway (off-ramp)
15. Metro Air Parkway to I-5 Southbound (on-ramp)
16. Metro Air Parkway to I-5 Southbound (loop on-ramp)
17. Elverta Boulevard to SR 70/99 Northbound (loop on-ramp)
18. Elverta Boulevard to SR 70/99 Northbound (on-ramp)
19. SR 70/99 Northbound to Elverta Boulevard (off-ramp)
20. SR 70/99 Southbound to Elverta Boulevard (off-ramp)
21. Elverta Boulevard to SR 70/99 Southbound (loop on-ramp)
22. Elverta Boulevard to SR 70/99 Southbound (on-ramp)

Freeway Mainline Segments

1. I-5 east of Powerline Road
2. I-5 north of Del Paso Road
3. I-5 north of I-5/I-80 Interchange
4. SR 70/99 between Elverta Road and Elkhorn Boulevard
5. SR 70/99 between Elkhorn Boulevard and I-5/SR 90 Interchange

TRAFFIC SCENARIOS

Traffic conditions were evaluated for the following scenarios:

- *Existing Conditions* – This scenario documents existing conditions at study area intersections, roadways, and freeway facilities based on recent traffic counts and field surveys conducted in 2005.

- *Baseline Conditions* – This scenario documents study intersection, roadway, and freeway conditions by adding projects approved or in process of final approval to the existing conditions scenario. Approved projects consist of developments that are under construction, are built but not fully occupied, or are not built but have final approval from decision-makers.

- *Baseline plus Project Conditions* – This scenario adds traffic from the proposed project to the Baseline Conditions. The estimated project trips are based on the trip rates provided in Trip Generation, 7th Edition, published by the Institute of Transportation Engineers (ITE).

- *Cumulative (2025) Conditions* – This scenario considers future year 2025 traffic conditions based on the North Natomas version of the SACMET Regional Travel Demand Forecasting model. The North Natomas Model assumes the build out of the North Natomas Community Plan (NNCP) and is modified to incorporate all approved projects in the North Natomas area. The following is a list of additional projects assumed in the Cumulative Conditions:

1. Meister Way – SR 70/99 overcrossing would be operational by the build out of the NNCP (Meister Way was assumed in the Metro Airpark project)

2. Metro Airpark project including all adopted mitigation measures and roadway improvements

3. The Extension of the light rail transit (LRT) from Downtown Sacramento to the Sacramento International Airport. A light rail station is assumed to be located in the center of the project along Meister Way.

- *Cumulative (2025) plus Project Conditions* – This scenario adds traffic from the proposed project to the Cumulative (2025) Conditions.

Trip Generation

Trip generation is defined as the number of vehicle trips produced by a particular land use or project. A trip is defined as a one-direction vehicle movement. The total number of trips generated by each land use includes the inbound and outbound trips. The project and approved project trip generation were estimated based on the trip rates provided in Trip Generation, 7th Edition, published by the ITE.

Trip Distribution and Assignment

Trip distribution is the process of determining in what proportion vehicles would travel between the project site and various destinations within the study area. Trip assignment is the process of determining the various paths vehicles would take from the project site to each destination. Trip distribution assumptions for the proposed project and the approved projects were developed using output from the SACMET Regional Travel Demand Forecasting model, knowledge of the study area, and input from City staff.

EXISTING OPERATIONAL CONDITIONS

Existing Intersections Levels of Service

In general, the operational characteristics of a roadway network are defined by the operations of key intersections within the network. Intersections are typically considered to be the critical analysis locations, because conflicting traffic movements at intersections impose capacity constraints on the overall roadway network.

Eight study intersections were selected with input from City staff for analysis. These intersections are listed in Table 6.1-7, along with the results of the LOS analysis under existing conditions. Appendix B contains the detailed LOS calculation sheets for existing conditions.

Currently, all study intersections operate at acceptable levels of service under Existing Conditions, except for the following intersections:

- Elverta Road and SR 70/99 – LOS E during the a.m. peak hour

- SR 70/99 northbound ramps and Elkhorn Boulevard – LOS F for the SR 70/99 northbound off-ramp approach during the p.m. peak hour

Elkhorn Boulevard and East Commerce Way – LOS E and LOS D for the northbound East Commerce Way (minor approach) during the a.m. and p.m. peak hours, respectively

Table 6.1-7 Existing Peak-Hour Intersection Operating Conditions								
ID	Intersections	Traffic Control	A.M. Peak Hour			P.M. Peak Hour		
			Average Delay*	LOS	Queue Length (feet) [X: Y, Z][1]	Average Delay*	LOS	Queue Length (feet) [X: Y, Z][1]
1	Powerline Road and Elverta Road	All Way Stop	7.2	A	-	7.0	A	-
2	Elverta Road and SR 70/99	Signal	**58.9**	**E**	**[SBT: 1,524, 2,000+]**	14.6	B	[WBL: 62, 425]
3	Powerline Road and Elkhorn Boulevard	All Way Stop	7.0	A	-	7.2	A	-
4	Elkhorn Boulevard and Lone Tree Road	One Way Stop	No Traffic on Lone Tree Road					
5	SR 70/99 Southbound Ramps and Elkhorn Boulevard	One Way Stop	(9.2)	(A)	-	(9.0)	(A)	-
6	SR 70/99 Northbound Ramps and Elkhorn Boulevard	One Way Stop	(11.6)	(B)	[NBR: 46, 485]	**217.9**	**F**	**[NBR: 1,548, 485]**
7	Elkhorn Boulevard and East Commerce Way	One Way Stop	**(36.5)**	**(E)**	**[NBL: 60, 265]**	**(29.7)**	**(D)**	**[NBL: 26, 265]**
8	Powerline Road and Del Paso Road	One Way Stop	(9.2)	(A)	-	(8.5)	(A)	-

Notes: * Seconds per Vehicle; LOS = Level of Service; (X) = LOS for minor approach
(X.X) = Delay in seconds per vehicle for minor approach
Bold = Unacceptable Intersection Operation
[1] X: Y, Z: X= Most critical approach; Y=50th Percentile Queue for unsignalized intersection or 90th Percentile Queue for signalized intersection; Z= Total Segment Length or Storage for Turn Pocket
- = Storage data not reported for those intersections with acceptable LOS conditions
NB = Northbound; SB = Southbound; EB = Eastbound; WB = Westbound; L = Left; T = Through; R = Right
HCM 2000 Methodology does not report the overall intersection LOS for one-way stop intersections

Existing Roadway Segment Levels of Service

Existing roadway traffic volumes and level of service are illustrated on Table 6.1-8.

Currently, Elkhorn Boulevard west of SR 70/99 operates acceptably at LOS A under Existing Conditions.

Table 6.1-8 Existing Roadway Operating Conditions			
Roadway Segment	Lanes (Max. ADT for acceptable LOS in vpd)	Daily Volume (vpd)	LOS
Elkhorn Boulevard west of SR 70/99 Interchange	2 (14,400)	458	A
Lone Tree Road south of Elkhorn Boulevard	No Traffic on Lone Tree Road		
Metro Air Parkway north of I-5 Interchange	NA		
Meister Way west of SR 70/99	NA		

Notes: LOS = Level of Service; vpd = vehicles per day; Max. ADT: Maximum average daily traffic
Bold = Unacceptable Roadway Segment Operation.
NA= Not existing roads

Existing Freeway Facilities

Ramp Levels of Service

Ten freeway ramps were selected with input from City staff and Caltrans for analysis. Existing a.m. and p.m. peak-hour levels of service are illustrated on Table 6.1-9.

Table 6.1-9
Existing Peak-Hour Freeway Ramp Operating Conditions

Ramp	A.M. Peak Hour			P.M. Peak Hour		
	Volume (vph)	LOS	Queue Length (feet) [X: Y, Z][1]	Volume (vph)	LOS	Queue Length (feet) [X: Y, Z][1]
Elkhorn Boulevard to SR 70/99 northbound (Loop on-ramp)	10	B	-	5	B	-
Elkhorn Boulevard to SR 70/99 northbound (On-ramp)	125	B	-	136	B	-
SR 70/99 northbound to Elkhorn Boulevard (off-ramp)	426	C	[NBR: 46, 1,270]	1,197	C	[NBR: 1,548, 1,270]
SR 70/99 southbound to Elkhorn Boulevard (off-ramp)	144	C	[SBL: 12, 1,250]	109	C	[SBL: 9, 1,250]
Elkhorn Boulevard to SR 70/99 southbound (loop on-ramp)	783	B	-	416	B	-
Elkhorn Boulevard to SR 70/99 southbound (on-ramp)	30	B	-	19	B	-
SR 70/99 southbound to I-5 northbound (off-ramp)	879	C	-	64	C	-
I-5 southbound to SR 70/99 northbound (off-ramp)	89	C	-	1,281	C	-
SR 70/99 southbound to I-5 southbound (on-ramp)	3,044	C	-	1,540	B	-
I-5 northbound to SR 70/99 northbound (off-ramp)	1,495	C	-	**3,231**	**E**	-

Notes: LOS – level of service for ramp freeway junction areas of influence
Bold – Unacceptable Ramp Operation
Reference – Highway Capacity Manual 2000 Edition
vph – Vehicles per hour
[1] X:Y,Z = Most critical ramp approach: 95th Percentile Queue Length, Available Segment Length/Storage
- Slip ramps. Requires arrival and departure data to estimate queuing on-ramps. However, the ramps are long enough to contain queues. As shown in the table, traffic volumes are low on the slip ramps.

Currently, all the study ramps operate at acceptable levels of service (LOS D or better) under Existing Conditions except for the following:

- I-5 northbound to SR 70/99 northbound off-ramp – LOS E during the p.m. peak hour.

Existing Freeway Mainline Levels of Service

Five freeway mainline segments were selected with input from City of Sacramento and Caltrans staff for analysis. The freeway and corresponding existing a.m. and p.m. peak-hour levels of service are illustrated in Table 6.1-10.

Currently, the following freeway segments operate unacceptably under Existing Conditions:

- I-5 north of Del Paso Road – LOS F for the northbound approach during the p.m. peak hour

- I-5 north of I-5/I-80 Interchange between I-80 and Arena Boulevard Exit – LOS F for the northbound approach during the p.m. peak hour

- SR 70/99 between Elkhorn Boulevard and I-5/SR 70/99 Interchange – LOS E for the southbound approach during the a.m. peak hour and LOS F for the northbound approach during the p.m. peak hour

Table 6.1-10
Existing Peak-Hour Freeway Mainline Operating Conditions

Freeway Segment	Direction	A.M. Peak Hour			P.M. Peak Hour		
		Volume (vph)	Density (pc/m/l)	LOS	Volume (vph)	Density (pc/m/l)	LOS
I-5 East of Power Line Road	WB/NB	2,771	25.6	C	2,890	26.9	D
	EB/SB	2,557	23.5	C	3,258	31.3	D
I-5 North of Del Paso Road	NB	3,387	20.8	C	6,057	> **45**	**F**
	SB	5,512	38.5	E	3,517	21.6	C
I-5 North of I-5/I-80 Interchange between I-80 and Arena Boulevard Exit	NB	3,252	20.0	C	6,381	> **45**	**F**
	SB	5,780	42.9	E	3,143	19.3	C
SR 70/99 between Elverta Road and Elkhorn Boulevard	NB	1,293	11.9	B	3,456	34.4	D
	SB	3,254	31.3	D	1,278	11.8	B
SR 70/99 between Elkhorn Boulevard and I-5/SR 70/99 Interchange	NB	1,584	14.6	B	4,512	> **45**	**F**
	SB	3,923	**44.8**	**E**	1,604	14.8	B

Notes: vph - vehicles per hour; pc/m/l - passenger cars per mile per lane; LOS = Level of Service;
Bold = Unacceptable Freeway Segment Operation.

6.1.3 REGULATORY SETTING

CALTRANS

Caltrans specifies LOS D as the minimum acceptable level of service standard for the freeway segments, ramps, and ramp intersections. However, LOS E is acceptable for the five freeway segments in the vicinity of the project area and downtown Sacramento area (milepost: 10.8 to 34.7).

CITY OF SACRAMENTO

The City of Sacramento specifies LOS C as the minimum acceptable level of service standard for the intersections that fall under its jurisdiction.

COUNTY OF SACRAMENTO

The County of Sacramento specifies LOS D for rural areas and LOS E for urban areas as the minimum acceptable level of service standards for the roadways and intersections that fall under its jurisdiction. Because the project study area is considered rural, LOS D was used as the minimum acceptable LOS standard for all the study intersections that fall under the County's jurisdiction.

LAFCO

The LAFCo Policies, Procedures, and Guidelines document does not contain any policies related to transportation and circulation.

The detailed significance criteria for the City, County, and Caltrans listed under the "Thresholds of Significance" section of this report were used to determine the project specific impacts and mitigations.

6.1.4 IMPACTS AND MITIGATION MEASURES

METHOD OF ANALYSIS

The analysis considered the impacts of the proposed project on the transportation system; vehicles, transit, bicycle, and pedestrians. The proposed project was evaluated using the significance criteria specified for the City, County, and Caltrans as applicable, to determine impacts on existing and proposed facilities.

BASELINE CONDITIONS ANALYSIS

There are seven projects in the project vicinity that are considered under Baseline Conditions as determined by the City. These projects are listed in Table 6.1-11. The locations of the baseline projects are illustrated in Exhibit 6.1-4. These projects are consistent with land uses envisioned by the general plan, have been approved by the City, and are either built out or in the process of building out in the near term (i.e., within 2-4 years)**.** The baseline project trip generation was estimated based on trip rates provided in Trip Generation, 7th Edition, published by ITE. This scenario establishes a baseline for analyzing the traffic impacts of the proposed project. Exhibit 6.1-5 shows the Baseline Conditions peak-hour turning movement volumes.

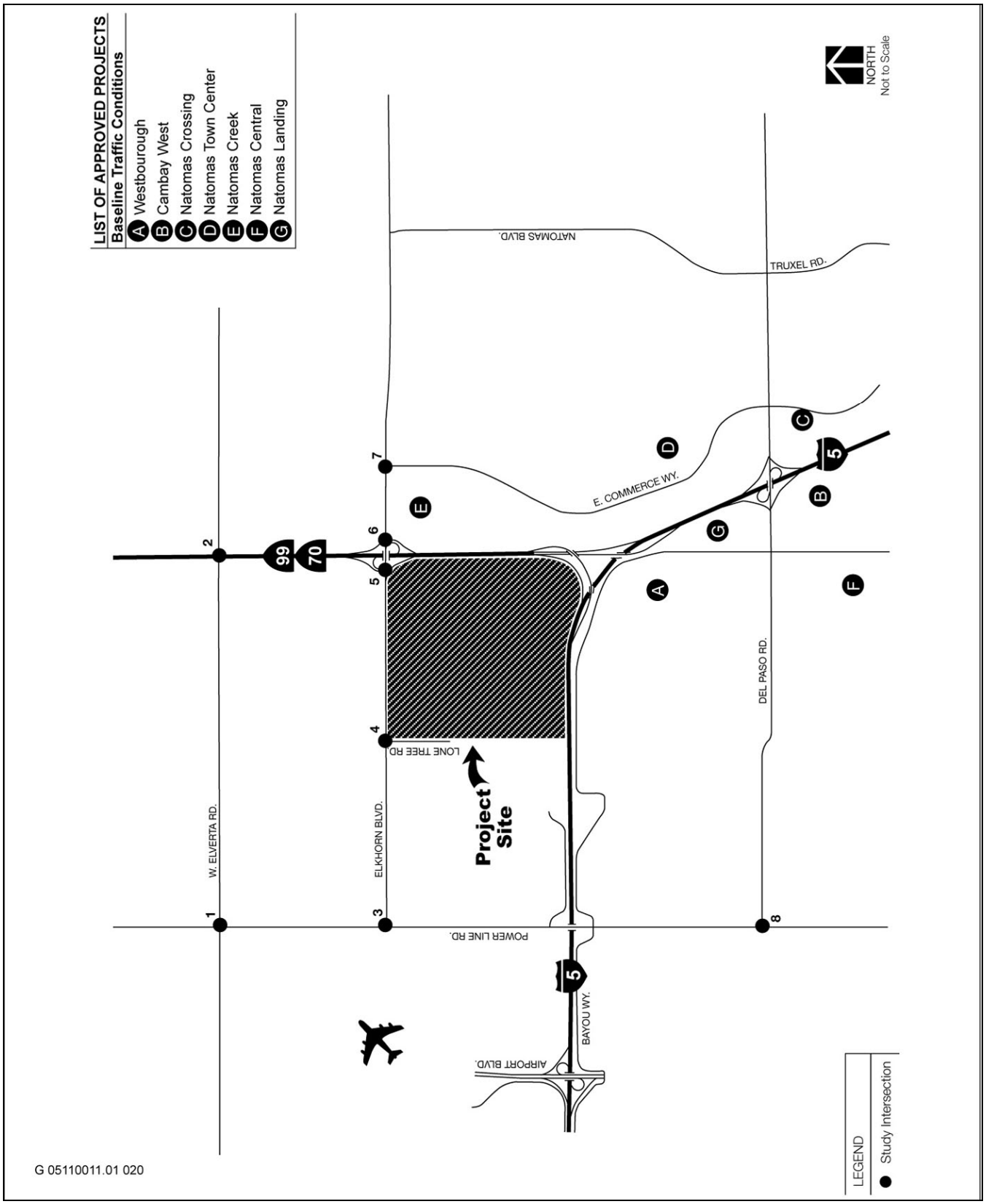
Table 6.1-11
Approved Projects Trip Generation

Project	Land Use	Size	Daily Trips	A.M. Peak Hour			P.M. Peak Hour		
				In	Out	Total	In	Out	Total
Westborough	Single Family Residential General Office Building Light Industrial Shopping Inst. (Med./Dental office)	102 du[1] 267 em[2] 248 em 96 ksf[3] 157 ksf	15,417	664	239	903	545	943	1,488
Cambay West	General Office Building	1,070 em	3,260	451	61	512	78	378	456
Natomas Crossing	Shopping Center	2,256 ksf	51,482	619	396	1,015	2,350	2,546	4,896
Natomas Town Center	Shopping Center	188 ksf	10,233	140	89	229	456	493	949
Natomas Creek	Single Family Residential Elementary School	390 du 700 stud[4]	4,540	202	319	521	310	232	542
Natomas Central	Single Family Residential Single Family Residential Apartment General Office Building Elementary School	728 du 1,047 du 976 du 340 ksf 349 ksf	28,667	1,765	2,083	3,848	1,715	1,584	3,299
Natomas Landing	Shopping Center General Office Building	550 ksf 162 em	21,235	355	182	537	946	1,102	2,048
Total			134,834	4,196	3,369	7,565	6,400	7,278	13,678

Notes: [1] du – Dwelling Unit; [2] em – employees; [3] ksf – 1,000 square feet; [4] Stud. – Students

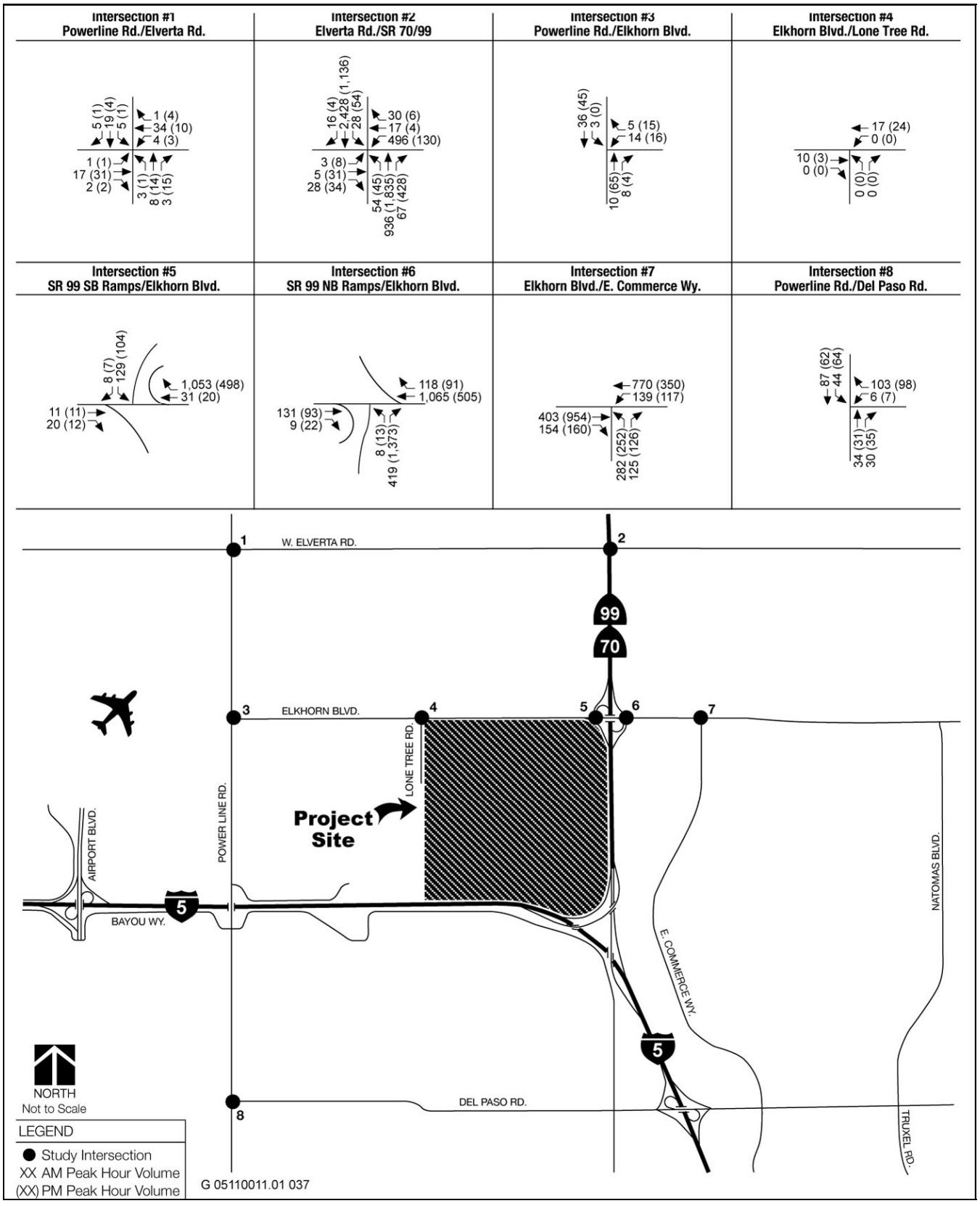
Results of Level of Service Analysis

Tables 6.1-12, 6.1-13, 6.1-14, and 6.1-15 summarize the intersection, roadway segment, freeway ramp and freeway mainline segments levels of service, respectively, under the Baseline conditions. Detailed calculations are contained in Appendix B.



Source: TJKM 2005

Location of Approved Projects **Exhibit 6.1-4**



Source: TJKM 2005

Baseline Peak-Hour Turning Movement Volumes **Exhibit 6.1-5**

Table 6.1-12
Baseline Peak-Hour Intersection Operating Conditions

ID	Intersections	Traffic Control	A.M. Peak Hour			P.M. Peak Hour		
			Average Delay*	LOS	Queue Length (feet) [X: Y, Z][1]	Average Delay*	LOS	Queue Length (feet) [X, Y, Z][1]
1	Powerline Road and Elverta Road	All Way Stop	7.2	A	-	7.0	A	-
2	Elverta Road and SR 70/99	Signal	**76.3**	**E**	**[SBT: 1,625, 2,000+]**	18.2	B	[WBL: 106, 425]
3	Powerline Road and Elkhorn Boulevard	All Way Stop	7.1	A	-	7.3	A	-
4	Elkhorn Boulevard and Lone Tree Road	One Way Stop	No Traffic on Lone Tree Road					
5	SR 70/99 SB Ramps and Elkhorn Boulevard	One Way Stop	(9.3)	(A)	-	(9.1)	(A)	-
6	SR 70/99 NB Ramps and Elkhorn Boulevard	One Way Stop	(13.2)	(B)	[NBR: 72, 485]	**270.0**	**(F)**	**[NBR: 1,869, 485]**
7	Elkhorn Boulevard and E. Commerce Way.	One Way Stop	**6,932.0**	**(F)**	**[NBL: >600, 265]**	**6,676.0**	**(F)**	**[NBL: >600, 265]**
8	Powerline Road and Del Paso Road	One Way Stop	(9.1)	(A)	-	(9.0)	(A)	-

Notes: * Seconds per Vehicle; LOS = Level of Service; (X) = LOS for minor approach
(X.X) = Delay in seconds per vehicle for minor approach
Bold = Unacceptable Intersection Operation
[1] X:Y,Z = Most critical approach: 50th/95th Percentile Queue Length for unsignalized/signalized intersections respectively, Available Segment Length/Storage
- Storage data not reported for those intersections with acceptable LOS Conditions
NB = Northbound; SB = Southbound; EB = Eastbound; WB = Westbound; L = Left; T = Through; R = Right
HCM 2000 Methodology does not report the overall intersection LOS for one-way stop intersections

Under Baseline Conditions, all study intersections are expected to continue to operate at acceptable levels of service, except for the following intersections:

- Elverta Road and SR 70/90 – LOS E during the a.m. peak hour
- SR 70/99 northbound ramps and Elkhorn Boulevard – LOS F for the SR 70/99 northbound off-ramp approach during the p.m. peak hour
- Elkhorn Boulevard and East Commerce Way – LOS F for the northbound East Commerce Way (minor approach) during the a.m. and p.m. peak hours, respectively

Under Baseline Conditions, Elkhorn Boulevard west of SR 70/99 is expected to continue to operate at an acceptable level of service LOS A (Table 6.1-13).

Table 6.1-13
Baseline Roadway Operating Conditions

Roadway Segment	Lanes (Max. ADT for acceptable LOS in vpd)	Daily Volume (vpd)	LOS
Elkhorn Boulevard west of SR 70/99 Interchange	2 (14,400)	2,103	A
Lone Tree Road south of Elkhorn Boulevard	No Traffic on Lone Tree Road		
Metro Air Parkway north of I-5 Interchange	NA		
Meister Way west of SR 70/99	NA		

Notes: LOS = Level of Service; vpd = vehicles per day; Max. ADT: Maximum average daily traffic
Bold = Unacceptable Roadway Segment Operation.
NA = not a baseline road

Baseline Ramp Levels of Service

Table 6.1-14 summarizes baseline a.m. and p.m. peak-hour levels of service at the study area freeway ramps.

Table 6.1-14
Baseline Peak-Hour Freeway Ramp Operating Conditions

Ramp	A.M. Peak Hour			P.M. Peak Hour		
	Volume (vph)	LOS	Queue Length (feet) [X: Y, Z][1]	Volume (vph)	LOS	Queue Length (feet) [X: Y, Z][1]
Elkhorn Boulevard to SR 70/99 northbound (Loop on-ramp)	10	B	-	5	B	-
Elkhorn Boulevard to SR 70/99 northbound (On-ramp)	129	B	-	143	B	-
SR 70/99 northbound to Elkhorn Boulevard (off-ramp)	518	C	[NBR: 72, 1,270]	1,290	C	[NBR: 1,869, 1,270]
SR 70/99 southbound to Elkhorn Boulevard (off-ramp)	152	C	[SBL: 13, 1,250]	114	C	[SBL: 10, 1,250]
Elkhorn Boulevard to SR 70/99 southbound (loop on-ramp)	993	B	-	641	B	-
Elkhorn Boulevard to SR 70/99 southbound (on-ramp)	30	B	-	19	B	-
SR 70/99 southbound to I-5 northbound (off-ramp)	935	C	-	126	C	-
I-5 southbound to SR 70/99 northbound (off-ramp)	111	C	-	1,303	C	-
SR 70/99 southbound to I-5 southbound (on-ramp)	3,374	D	-	1,871	B	-
I-5 northbound to SR 70/99 northbound (off-ramp)	1,608	C	-	**3,347**	**E**	-

Notes: LOS – level of service for ramp freeway junction areas of influence
Bold – Unacceptable Ramp Operation
Reference – Highway Capacity Manual 2000 Edition
vph – Vehicles per hour
[1] X:Y,Z = Most critical ramp approach: 95th Percentile Queue Length, Available Segment Length/Storage
- Slip ramps. Requires arrival and departure data to estimate queuing on-ramps. However, the ramps are long enough to contain queues. As shown in the table, traffic volumes are low on the slip ramps.

All the study ramps are expected to operate at acceptable levels of service (LOS D or better) under Baseline Conditions (same as Existing Conditions) except for the following:

Interstate 5 northbound to SR 70/99 northbound off-ramp – LOS E during the p.m. peak hour

Baseline Freeway Mainline Levels of Service

Table 6.1-15 summarizes baseline a.m. and p.m. peak-hour levels of service at the freeway mainline segments.

The following freeway segments are expected to operate unacceptably under Baseline Conditions:

- I-5 north of Del Paso Road – LOS F for the southbound approach during the a.m. peak hour and the northbound approach during the p.m. peak hour
- I-5 north of I-5/I-80 Interchange between I-80 and Arena Boulevard exit – LOS F for the southbound approach during the a.m. peak hour and the northbound approach during the p.m. peak hour

- SR 70/99 between Elverta Road and Elkhorn Boulevard – LOS E for the northbound approach during the p.m. peak hour.

- SR 70/99 between Elkhorn Boulevard and I-5/SR 70/99 Interchange – LOS E for the southbound approach during the a.m. peak hour and LOS F for the northbound approach during the p.m. peak hour

Table 6.1-15
Baseline Peak-Hour Freeway Mainline Operating Conditions

Freeway Segment	Direction	A.M. Peak Hour			P.M. Peak Hour		
		Volume (vph)	Density (pc/m/l)	LOS	Volume (vph)	Density (pc/m/l)	LOS
I-5 East of Power Line Road	NB	2,984	27.9	D	3,114	29.4	D
	SB	2,692	24.8	C	3,354	32.7	D
I-5 North of Del Paso Road	NB	3,657	22.4	C	6,335	> **45**	**F**
	SB	5,954	> **45**	**F**	3,922	24.1	C
I-5 North of I-5/I-80 Interchange between I-80 and Arena Boulevard Exit	NB	4,465	27.8	D	7,639	> **45**	**F**
	SB	6,894	> **45**	**F**	4,232	26.1	D
SR 70/99 between Elverta Road and Elkhorn Boulevard	NB	1,340	12.3	B	3,509	**35.3**	**E**
	SB	3,437	34.0	D	1,451	13.4	B
SR 70/99 between Elkhorn Boulevard and I-5/SR 70/99 Interchange	NB	1,719	15.8	B	4,650	> **45**	**F**
	SB	4,308	> **45**	**F**	1,997	18.4	C

Notes: vph - vehicles per hour; pc/m/l - passenger cars per mile per lane; LOS = Level of Service;
Bold = Unacceptable Freeway Segment Operation.

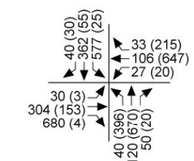
Cumulative (2025) Conditions Analysis

The future cumulative conditions are based on traffic projections from the SACMET Regional Travel Demand Forecasting model. It should be noted that the cumulative projects in the model included all the Baseline approved projects, the West Lakeside project, and buildout of the NNCP. Based on the City's input, three additional projects were incorporated into the model for the cumulative scenario: North Natomas Shopping Center, Metro Air Park, and Panhandle. The Metro Air Park project is an approved project and is expected to be built by the year 2025. The West Lakeside, Natomas Shopping Center, and Panhandle projects are under review by the City. Exhibit 6.1-6 shows the Cumulative (2025) peak-hour turning movement volumes. Exhibit 6.1-7 illustrates the lane configurations and controls assumed for the Cumulative Conditions (2025). The Meister Way – SR 70/99 overpass is assumed to be constructed by Year 2025.

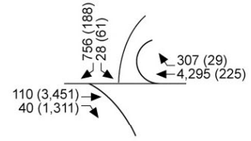
Results of Level of Service Analysis

Tables 6.1-16, 6.1-17, 6.1-18, and 6.1-19 summarize the intersection, roadway segment, freeway ramp and freeway mainline segment levels of service under Cumulative Conditions. Detailed calculations are contained in Appendix B.

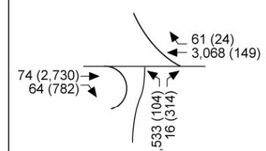
Intersection #1
Powerline Rd./Elverta Rd.



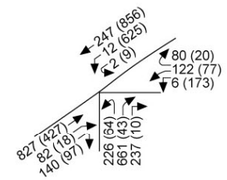
Intersection #2a
Elverta Rd./SR 70/99 SB Ramps



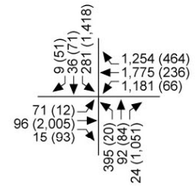
Intersection #2b
Elverta Rd./SR 70/99 N Ramps



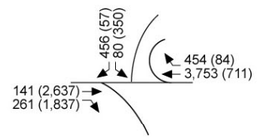
Intersection #3
Powerline Rd./Elkhorn Blvd. Redesigned



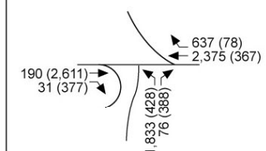
Intersection #4
Elkhorn Blvd./Lone Tree Rd.



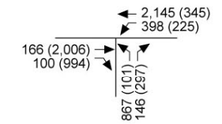
Intersection #5
SR 99 SB Ramps/Elkhorn Blvd.



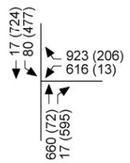
Intersection #6
SR 99 NB Ramps/Elkhorn Blvd.



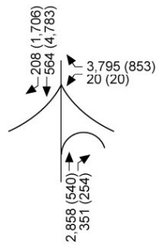
Intersection #7
Elkhorn Blvd./E. Commerce Wy.



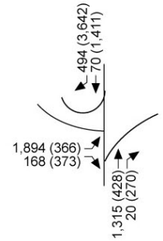
Intersection #8
Powerline Rd./Del Paso Rd.



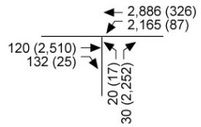
Intersection #9
I-5 NB Ramps/Metro Air Pkwy.



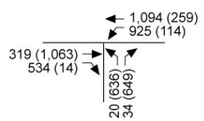
Intersection #10
I-5 SB Ramps/Metro Air Pkwy.



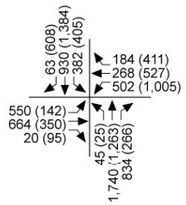
Intersection #11
Elverta Rd./Lone Tree Rd.



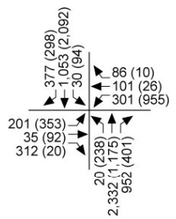
Intersection #12
Metro Air Pkwy./Elverta Rd.



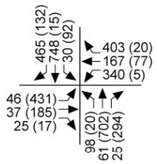
Intersection #13
Metro Air Pkwy./Elkhorn Blvd.



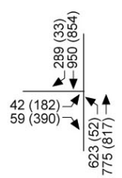
Intersection #14
Metro Air Pkwy./Meister Wy.



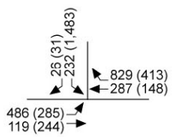
Intersection #15
Meister Wy./Lone Tree Rd.



Intersection #16
Meister Wy./E. Commerce Wy.



Intersection #17
Metro Air Pkwy./S. Bayou Rd.



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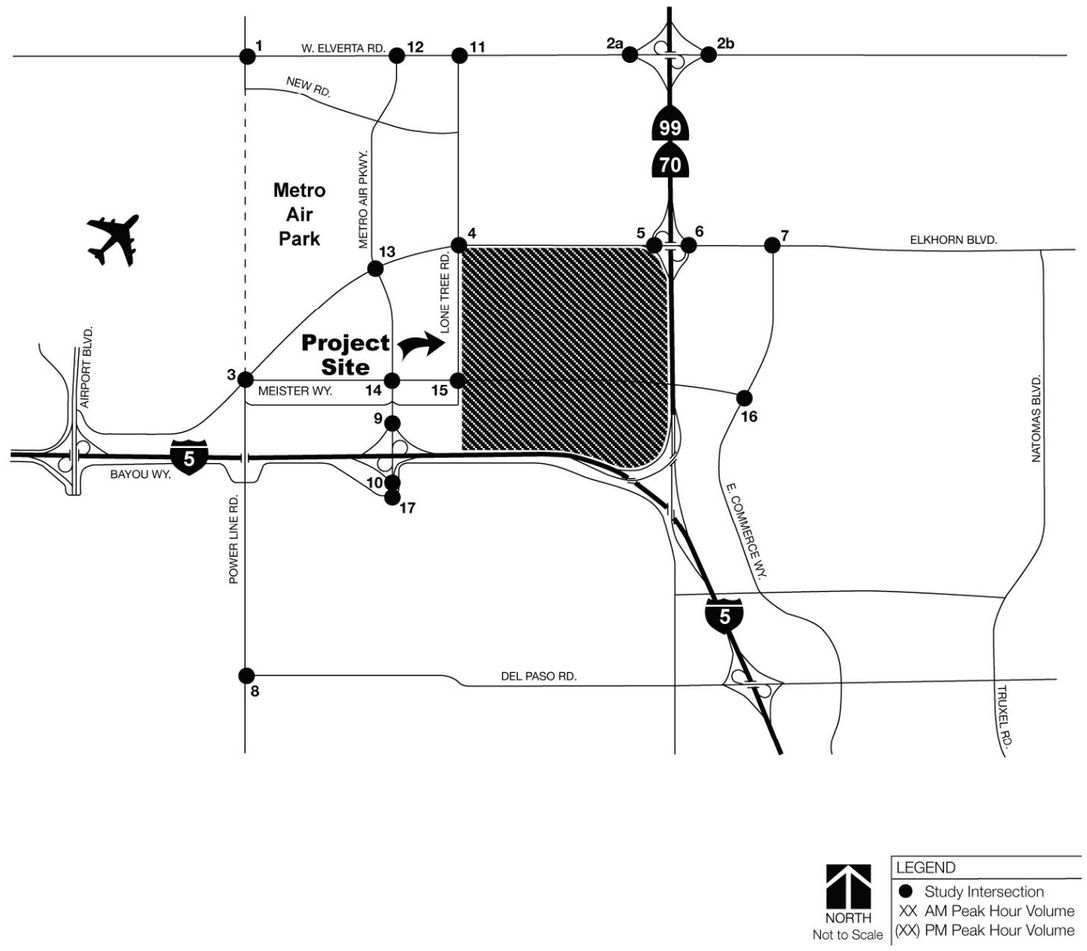
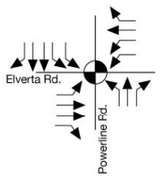


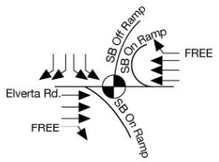
Source: TJKM 2005

Cumulative (2025) Peak-Hour Turning Movement Volumes **Exhibit 6.1-6**

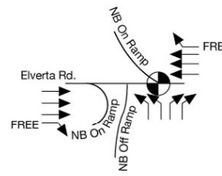
Intersection #1
Powerline Rd./Elverta Rd.



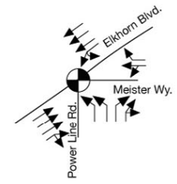
Intersection #2a
Elverta Rd./SR 70/99 SB Ramps



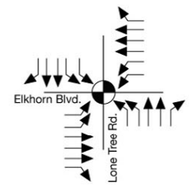
Intersection #2b
Elverta Rd./SR 70/99 N Ramps



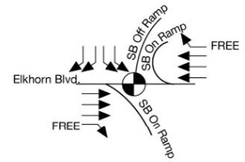
Intersection #3
Powerline Rd./Elkhorn Blvd. Realigned



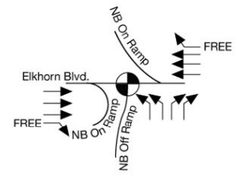
Intersection #4
Elkhorn Blvd./Lone Tree Rd.



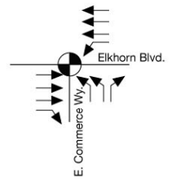
Intersection #5
SR 99 SB Ramps/Elkhorn Blvd.



Intersection #6
SR 99 NB Ramps/Elkhorn Blvd.

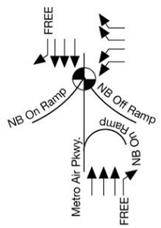


Intersection #7
Elkhorn Blvd./E. Commerce Wy.

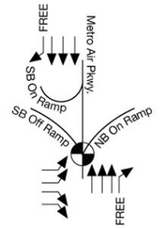


Intersection #8
Powerline Rd./Del Paso Rd.

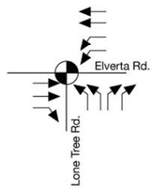
Intersection #9
I-5 NB Ramps/Metro Air Pkwy.



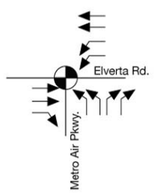
Intersection #10
I-5 SB Ramps/Metro Air Pkwy.



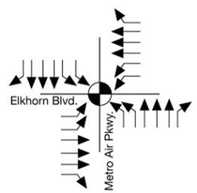
Intersection #11
Elverta Rd./Lone Tree Rd.



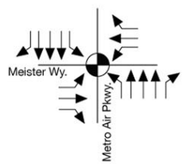
Intersection #12
Metro Air Pkwy./Elverta Rd.



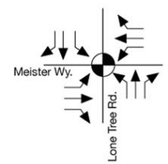
Intersection #13
Metro Air Pkwy./Elkhorn Blvd.



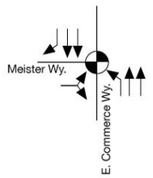
Intersection #14
Metro Air Pkwy./Meister Wy.



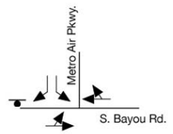
Intersection #15
Meister Wy./Lone Tree Rd.

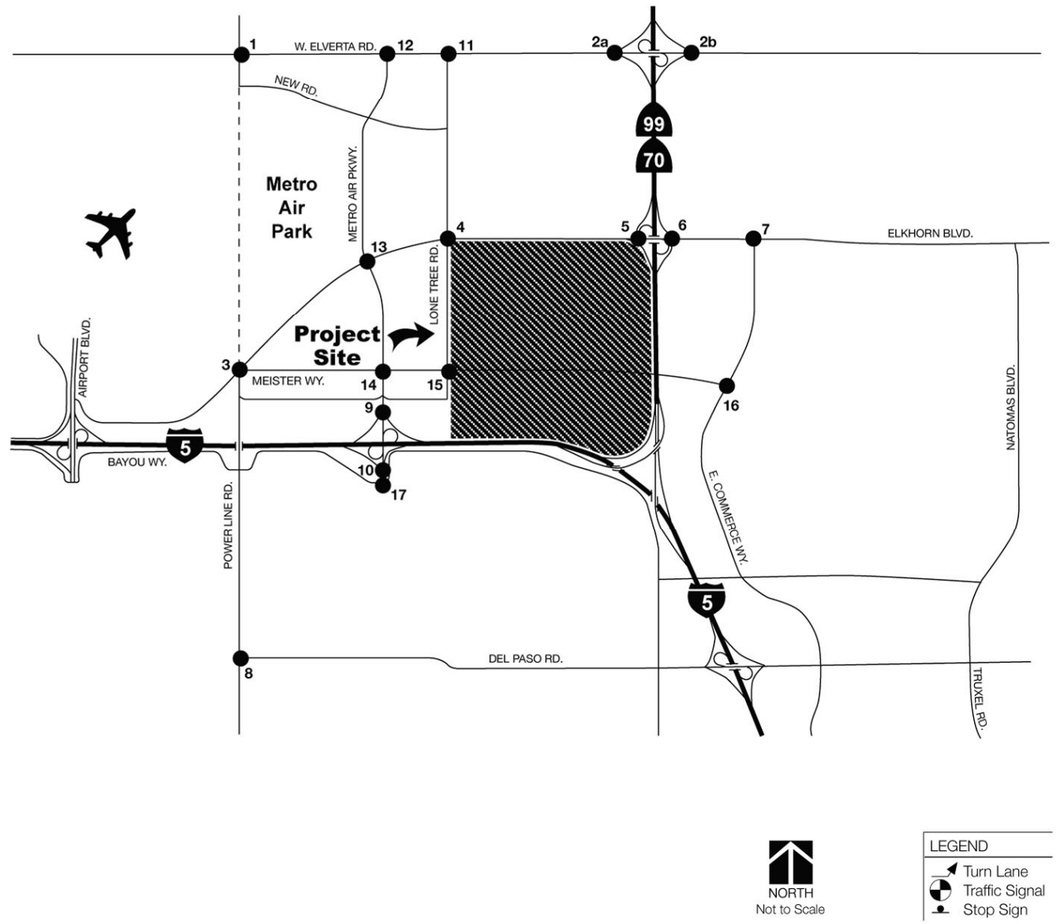


Intersection #16
Meister Wy./E. Commerce Wy.



Intersection #17
Metro Air Pkwy./S. Bayou Rd.





G 05110011.01 031

Source: TJKM 2005

Cumulative (2025) Lane Configurations **Exhibit 6.1-7**

Table 6.1-16
Cumulative (2025) Peak-Hour Intersection Operating Conditions

ID	Intersections	Traffic Control	A.M. Peak Hour			P.M. Peak Hour		
			Average Delay or V/C*	LOS	Queue Length (feet) [X: Y][1]	Average Delay or V/C*	LOS	Queue Length (feet) [X: Y][1]
1	Powerline Road and Elverta Road (County)	Signal	0.70	B	-	0.82	D	-
2a	SR 70/99 SB Ramps and Elverta Road	Signal	**140.6**	**F**	**[WBT: 2,154]**	7.7	A	[EBT: 520]
2b	SR 70/99 NB Ramps and Elverta Road	Signal	**120.1**	**F**	**[WBT: 1,348]**	12.4	B	[EBT: 445]
3	Powerline Road and Elkhorn Boulevard and Meister Way (County)	Signal	0.75	C	-	0.79	C	-
4	Elkhorn Boulevard and Lone Tree Road	Signal	**37.4**	**D**	**[WBR: 1,484]**	**219.0**	**F**	**[SBL: 957]**
5	SR 70/99 SB Ramps and Elkhorn Boulevard	Signal	44.5	D	-	10.8	B	-
6	SR 70/99 NB Ramps and Elkhorn Boulevard	Signal	**96.4**	**F**	**[WBT: 1,029]**	13.8	B	[EBT: 467]
7	Elkhorn Boulevard and E. Commerce Way	Signal	17.4	B	-	16.2	B	-
8	Powerline Road and Del Paso Road (County).	Signal	0.89	D	-	0.51	A	-
9	I-5 NB Ramps and Metro Air Parkway	Signal	**256.6**	**F**	**[WBR: 2,655]**	**92.1**	**F**	**[SBT: 2,278]**
10	I-5 SB Ramps and Metro Air Parkway	Signal	31.2	C	-	7.8	A	-
11	Elverta Road and Lone Tree Road (County)	Signal	**0.97**	**E**	[WBT: 1,675]	**1.68**	**F**	**[NBR: 1,495]**
12	Elverta Road and Metro Air Parkway (County)	Signal	0.71	C	-	0.65	B	-
13	Elkhorn Boulevard and Metro Air Parkway (County)	Signal	0.85	D	-	0.85	D	-
14	Meister Way and Metro Air Parkway (County).	Signal	0.81	D	[WBL: 477]	**1.32**	**F**	**[WBL: 1,264]**
15	Meister Way and Lone Tree Road	Signal	22.4	C	-	30.4	C	-
16	Meister Way and E. Commerce Way	Signal	20.6	C	-	13.3	B	-
17	Bayou Road and Metro Air Parkway	One Way Stop	**8,993.0**	**(F)**	**[SBL: >600]**	**9,795.0**	**(F)**	**[SBL: >600]**

Notes: * volume/capacity for County intersections; Seconds per Vehicle; LOS = Level of Service; (X) = LOS for minor approach
(X.X) = Delay in seconds per vehicle for minor approach
Bold = Unacceptable Intersection Operation
[1] X: Y = Most critical approach: 50th/95th Percentile Queue Length for unsignalized/signalized intersections respectively
- Queue length not reported for those intersections with acceptable LOS conditions
Storage length not available for future lane configurations/study intersections
NB = Northbound; SB = Southbound; EB = Eastbound; WB = Westbound; L = Left; T = Through; R = Right
HCM 2000 Methodology does not report the overall intersection LOS for one-way stop intersections

Under Cumulative Conditions, the following study intersections are expected to operate unacceptably:

- SR 70/99 Southbound Ramps and Elverta Road (LOS F during the a.m. peak)
- SR 70/99 Northbound Ramps and Elverta Road (LOS F during the a.m. peak)

- Elkhorn Boulevard and Lone Tree Road (LOS D and LOS F during the a.m. and p.m. peaks, respectively)
- SR 70/99 Northbound Ramps and Elkhorn Boulevard (LOS F during the a.m. peak)
- Metro Air Parkway and I-5 Northbound Ramps (LOS F during the a.m. and p.m. peaks)
- Elverta Road and Lone Tree Road (LOS E and LOS F during the a.m. and p.m. peak, respectively)
- Meister Way and Metro Air Parkway (LOS F during the p.m. peak)
- Metro Air Parkway and Bayou Road (LOS F during the a.m. and p.m. peaks)

It should be noted that the cumulative scenario lane configuration includes all planned improvements provided in the environmental impact report for the Metro Air Park General Plan Amendment and Rezone project (1993) in addition to all roads and freeway improvements as of the 2025 Metropolitan Transportation Plan (MTP) (SACOG 2002) and NNCP (1994).

As shown in Table 6.1-17, under Cumulative Conditions the following roadway segments are expected to operate unacceptably:

- Elkhorn Boulevard west of SR 70/99 Interchange – LOS E
- Metro Air Parkway north of I-5 Interchange – LOS F

Table 6.1-17
Cumulative (2025) Roadway Operating Conditions

Roadway Segment	Lanes (Max. ADT for acceptable LOS in vpd)	Daily Volume (vpd)	LOS
Elkhorn Boulevard west of SR 70/99 Interchange	6 (43,200)	**52,409**	**E**
Lone Tree Road south of Elkhorn Boulevard	4 (28,800)	13,655	A
Metro Air Parkway north of I-5 Interchange	6 (48,600)	**78,823**	**F**
Meister Way west of SR 70/99	2 (14,400)	6,559	A

Notes: LOS = Level of Service; vpd = vehicles per day; Max. ADT: Maximum average daily traffic
Bold = Unacceptable Roadway Segment Operation.

As shown in table 6.1-18, the following ramps are expected to operate unacceptably under Cumulative (2025) Conditions:

- SR 70/99 northbound to Elkhorn Boulevard off-ramp – LOS E during the a.m. peak hour
- I-5 northbound to SR 70/99 northbound off-ramp – LOS E during the a.m. peak hour
- I-5 northbound to Metro Air Parkway off-ramp – LOS F during the a.m. peak hour
- I-5 southbound to Metro Air Parkway off-ramp – LOS F during the a.m. peak hour
- Metro Air Parkway to I-5 southbound loop on-ramp – LOS F during the p.m. peak hour

As shown in Table 6.1-19, the following freeway segments are expected to operate unacceptably under Cumulative (2025) Conditions:

- I-5 East of Powerline Road – LOS F for the northbound approach during the a.m. peak hour and the southbound approach during the p.m. peak hour

- I-5 north of Del Paso Road – LOS F for the northbound approach during the a.m. peak hour and the southbound approach during the p.m. peak hour

- I-5 north of I-5/I-80 Interchange between I-80 and Arena Boulevard Exit – LOS F for the northbound approach during the a.m. peak hour and the southbound approach during the p.m. peak hour

Table 6.1-18
Cumulative (2025) Peak-Hour Freeway Ramp Operating Conditions

Ramp	A.M. Peak Hour			P.M. Peak Hour		
	Volume (vph)	LOS	Queue Length (feet) [X: Y, Z][1]	Volume (vph)	LOS	Queue Length (feet) [X: Y, Z][1]
Elkhorn Boulevard to SR 70/99 northbound (Loop on-ramp)	31	B	-	377	B	-
Elkhorn Boulevard to SR 70/99 northbound (On-ramp)	638	B	-	78	B	-
SR 70/99 northbound to Elkhorn Boulevard (off-ramp)	**1,908**	**E**	**[NBL: 1,156, 1,270]**	815	C	[NBL: 112, 1,270]
SR 70/99 southbound to Elkhorn Boulevard (off-ramp)	536	C	[SWR: 383, 1,250]	408	C	[SWL: 92, 1,250]
Elkhorn Boulevard to SR 70/99 southbound (loop on-ramp)	454	B	-	84	B	-
Elkhorn Boulevard to SR 70/99 southbound (on-ramp)	261	B	-	1,837	D	-
Elverta Boulevard to SR 70/99 northbound (Loop on-ramp)	64	B	-	781	B	-
Elverta Boulevard to SR 70/99 northbound (On-ramp)	61	B	-	24	B	-
SR 70/99 northbound to Elverta Boulevard (off-ramp)	1,549	D	[NBL: 1,008, 1,270]	417	C	[NBR: 99, 1,270]
SR 70/99 southbound to Elverta Boulevard (off-ramp)	783	C	[SWR: 707, 1,250]	249	C	[SWL: 35, 1,250]
Elverta Boulevard to SR 70/99 southbound (loop on-ramp)	306	B	-	28	B	-
Elverta Boulevard to SR 70/99 southbound (on-ramp)	40	B	-	1,311	C	-
SR 70/99 southbound to I-5 northbound (off-ramp)	562	C	-	174	C	-
I-5 southbound to SR 70/99 northbound (off-ramp)	148	C	-	506	C	-
SR 70/99 southbound to I-5 southbound (on-ramp)	1,524	B	-	3,409	D	-
I-5 northbound to SR 70/99 northbound (off-ramp)	**3,211**	**E**	-	1,863	C	-
I-5 northbound to Metro Air Parkway (off-ramp)*	**3,795**	**F**	**[WBR: 2655, 1270]**	853	C	[WBR: 231, 1270]
Metro Air Parkway to I-5 northbound (On-ramp)*	209	B	-	1,707	D	-
Metro Air Parkway to I-5 northbound (loop on-ramp)*	350	B	-	254	B	-
I-5 southbound to Metro Air Parkway (off-ramp)*	**2,062**	**F**	**[SEL: 757, 1250]**	739	C	[SER: 56, 1250]
Metro Air Parkway to I-5 southbound (On-ramp)*	0	B	-	270	B	-
Metro Air Parkway to I-5 southbound (loop on-ramp)*	494	B	-	**3,642**	**F**	-

Notes: LOS – level of service for ramp freeway junction areas of influence
Bold – Unacceptable Ramp Operation
Reference – Highway Capacity Manual 2000 Edition
vph – Vehicles per hour
* Future ramps
[1] X:Y,Z = Most critical ramp approach: 95th Percentile Queue Length, Available Segment Length/Storage
- Slip ramps. Requires arrival and departure data to estimate queuing on-ramps. However, the ramps are long enough to contain queues. As shown in the table, traffic volumes are low on the slip ramps.

Table 6.1-19 Cumulative (2025) Peak-Hour Freeway Mainline Operating Conditions							
Freeway Segment	Direction	A.M. Peak Hour			P.M. Peak Hour		
		Volume (vph)	Density (pc/m/l)	LOS	Volume (vph)	Density (pc/m/l)	LOS
I-5 East of Power Line Road	NB	**6,266**	**> 45**	**F**	3,807	41.6	E
	SB	3,243	31.1	D	**6,064**	**> 45**	**F**
I-5 North of Del Paso Road	NB	**8,915**	**> 45**	**F**	5,496	25.4	C
	SB	4,619	21.3	C	**8,966**	**> 45**	**F**
I-5 North of I-5/I-80 Interchange between I-80 and Arena Boulevard Exit	NB	**10,545**	**> 45**	**F**	6,976	34.9	D
	SB	5,760	26.7	D	**10,802**	**> 45**	**F**
SR 70/99 between Elverta Road and Elkhorn Boulevard	NB	2,120	19.5	C	2,009	18.5	C
	SB	1,909	17.6	B	2,069	19.0	C
SR 70/99 between Elkhorn Boulevard and I-5/SR 70/99 Interchange	NB	3,359	20.6	C	2,369	14.5	B
	SB	2,087	12.8	B	3,583	22.0	C
Notes: vph - vehicles per hour; pc/m/l - passenger cars per mile per lane; LOS = Level of Service; **Bold** = Unacceptable Freeway Segment Operation.							

Project Trip Generation – Baseline Conditions

The project trip generation was estimated based on the trip rates provided in Trip Generation, 7th Edition, published by the ITE.

The Pre-Census Travel Behavior Report Analysis of the 2000 Sacramento Area Council of Government (SACOG) Household Travel Survey (SACOG 2001) was used to estimate project trips by various modes of travel. It is expected that project trips would predominantly be by autos, with a few by transit, walking, biking and by other means of transportation.

As shown in Table 6.1-20, the proposed project is expected to generate a total of 46,318 new daily trips with 3,551 trips occurring during the a.m. peak hour and 4,779 trips occurring during the p.m. peak hour.

The projected trips were discounted (shown in parenthesis in Table 6.1-20) to account for internal trips between the different land uses and trips that would likely be by transit, walking, and biking. Accounting for discounted trips, the project is expected to generate a net total of 41,119 daily auto trips, with 3,153 auto trips occurring during the a.m. peak hour and 4,467 auto trips occurring during the p.m. peak hour Appropriate LRT reduction was applied for the project trips under Cumulative plus Project Conditions when the light rail extension and light rail stop is expected to be in place. For additional details, please see “Cumulative plus Projects Conditions” section (Page: 6.1-45).

The residential, village and community commercial portion of the project is estimated to generate 996 daily non-auto trips (walk, bike and transit trips) with 72 trips occurring during the a.m. peak hour and 89 trips during the p.m. peak hour. The majority of residential, village and community commercial non-auto trips are expected to be by walking in the vicinity of the project area. Walking is expected to account for 467 daily non-auto trips (about 47% of projected daily non-auto trips).

A significant number of residential trips are expected to be internal trips between the different land uses: about 1,868 daily trips to/from the proposed elementary school and 2,335 daily trips to/from the village and community commercial. The majority of the residential trips to the elementary school are expected to occur only in the a.m. peak hour. Also, the majority of the residential trips to the village and community commercial are expected to occur during the p.m. peak hour.

Table 6.1-20
Proposed Project Trip Generation

Land Use	Size	Daily Rate	Trips	A.M. Peak Hour Rate	In	Out	Total	P.M. Peak Hour Rate	In	Out	Total
Single Family Residential (Low Density Housing)	671 DU[1]	9.57	6,421	0.77	134	382	516	1.02	438	246	684
Single Family Residential (Medium Density Housing)	2,215 DU	5.86	12,980	0.44	175	799	974	0.52	737	415	1,152
Multi Family Residential (High Density Housing)	587 DU	6.72	3,945	0.55	65	258	323	0.67	256	138	394
Total Residential Trips Generated			**23,346**		**374**	**1,439**	**1,813**		**1,431**	**799**	**2,230**
Elementary School	122.4 ksf[3] (10.2 AC[2])	14.49	1,774	4.69	310	264	574	3.13	165	218	383
Village and Community Commercial											
- Retail	263 ksf	42.94	11,293	1.03	165	106	271	3.75	473	513	986
- Retail/Major Grocery	67 ksf	102.24	6,850	10.05	330	343	673	12.02	427	379	806
Meister Retail	29.7 ksf	42.94	1,275	1.03	19	12	31	3.75	53	58	111
Meister Retail/Restaurant	14 ksf	127.15	1,780	13.53	98	91	189	18.8	145	118	263
Total Project Trips Generated			**46,318**		**1,296**	**2,255**	**3,551**		**2,694**	**2,085**	**4,779**
Trip discount[2]											
Residential Travel Mode Discount											
Transit (1%)			(233)		(4)	(14)	(18)		(14)	(8)	(22)
Walk (2%)			(467)		(7)	(29)	(36)		(29)	(16)	(45)
Bike (1%)			(233)		(4)	(14)	(18)		(14)	(8)	(22)
Other Travel Mode Discount											
Village and Community Commercial - Transit Ridership (0.3%)			(54)			Negligible				Negligible	
Meister Retail and Restaurant - Transit Ridership			(9)			Negligible				Negligible	
Sub Total			**(996)**		**(15)**	**(57)**	**(72)**		**(57)**	**(32)**	**(89)**
Residential Linked Trip by Purpose Discount											
Elementary School (8%) A.M. only			(1,868)		(30)	(115)	(145)				
Village and Community Commercial (10%)			(2,335)		(37)	(144)	(181)		(143)	(80)	(223)
Sub Total			**(4,203)**		**(67)**	**(259)**	**(326)**		**(143)**	**(80)**	**(223)**
Total Auto Trips			**41,119**		**1,214**	**1,939**	**3,153**		**2,494**	**1,973**	**4,467**

Notes:
[1] DU - Dwelling Unit, [2] AC - Acre [3] ksf – 1,000 square feet.
[2] Mode split based on Pre-Census Behavior Report Analysis of the 2000 SACOG Household Travel Survey, SACOG 2001, Weighted Results for Tables A7,A26,and A27.
88% of Residential trips are by auto during the a.m. peak hour, 1% by Transit,2% by Walk and 1% by Bike with 8% trips made to the Elementary School by other means besides auto.
96% of Residential trips are expected to be made by auto during the p.m. peak hour. 10% of the Residential auto trips are expected to be linked to Village and Community Commercial trips.
0.3 % of non residential trips are expected to be made to the Village and Community Commercial by transit.
Source: ITE Trip Generation 7th Edition 2003

PROJECT TRIP DISTRIBUTION

The project trip distributions for a.m. and p.m. peak hours are shown in Exhibits 6.1-8, 6.1-9, 6.1-10, and 6.1-11. Trips to and from the proposed Greenbriar Project and approved projects were assigned to the study intersections based on the execution of the SACMET model and the trip distribution assumptions shown in the exhibits.

Baseline Scenario

Trips distribution assumptions for the a.m. peak hour are as follows:

- 55% to/from the south on I-5
- 15% to/from the north on SR 70/99
- 15% to/from the east on Elkhorn Boulevard
- 10% to/from the west on Elkhorn Boulevard
- 5% to/from the west on I-5

Trips distribution assumptions for the p.m. peak hour are as follows:

- 45% to/from the south on I-5
- 20% to/from the west on Elkhorn Boulevard
- 15% to/from the north on SR 70/99
- 15% to/from the east on Elkhorn Boulevard
- 5% to/from the west on I-5

Cumulative Conditions (assumes the Meister Way Overpass is constructed)

Trips distribution assumptions for the a.m. peak hour are as follows:

- 45% to/from the south on I-5
- 20% to/from the east on Meister Way over SR 70/99
- 15% to/from the east on Elkhorn Boulevard
- 10% to/from the north on SR 70/99
- 5% to/from the west on Elkhorn Boulevard
- 5% to/from the west on I-5

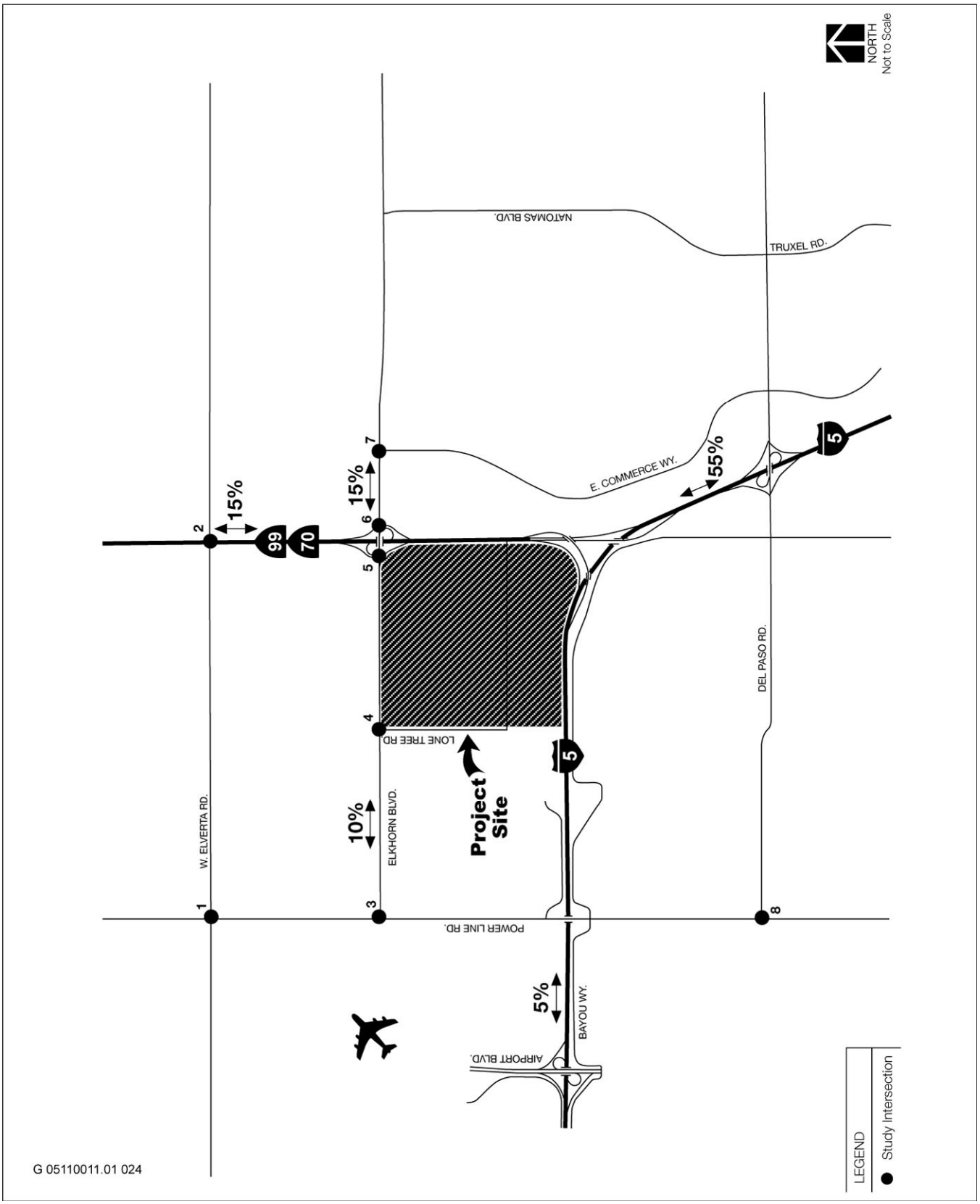
Trips distribution assumptions for the p.m. peak hour are as follows:

- 35% to/from the south on I-5
- 30% to/from the east on Meister Way over SR 70/99
- 10% to/from the east on Elkhorn Boulevard
- 10% to/from the north on SR 70/99
- 10% to/from the west on Elkhorn Boulevard
- 5% to/from the west on I-5

Baseline plus Project Conditions Analysis

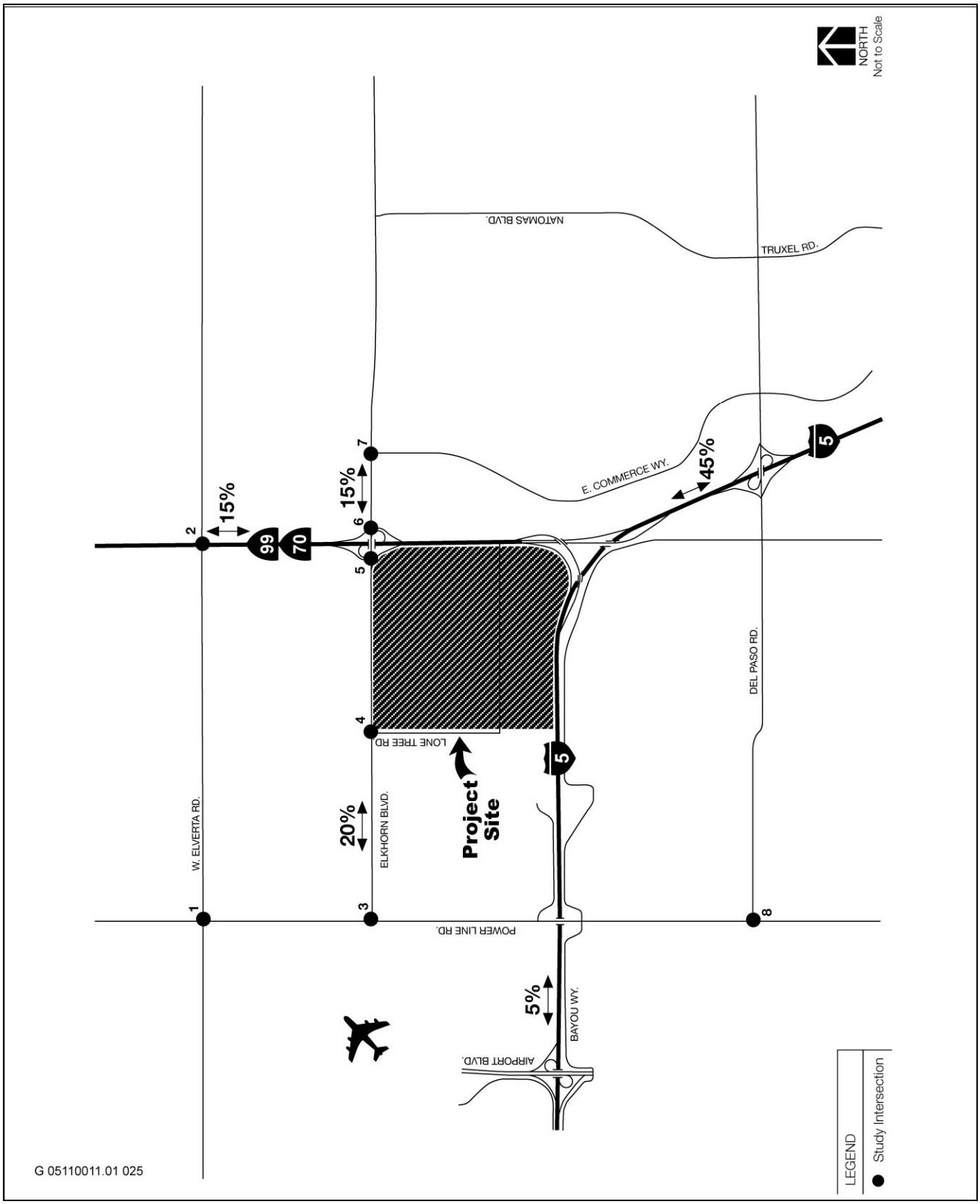
The Baseline plus Project Conditions analysis adds traffic from the proposed project to the Baseline traffic conditions.

Exhibit 6.1-12 shows the Baseline plus Project peak-hour turning movement volumes. The Baseline plus Project lane configurations are shown in Exhibit 6.1-13.



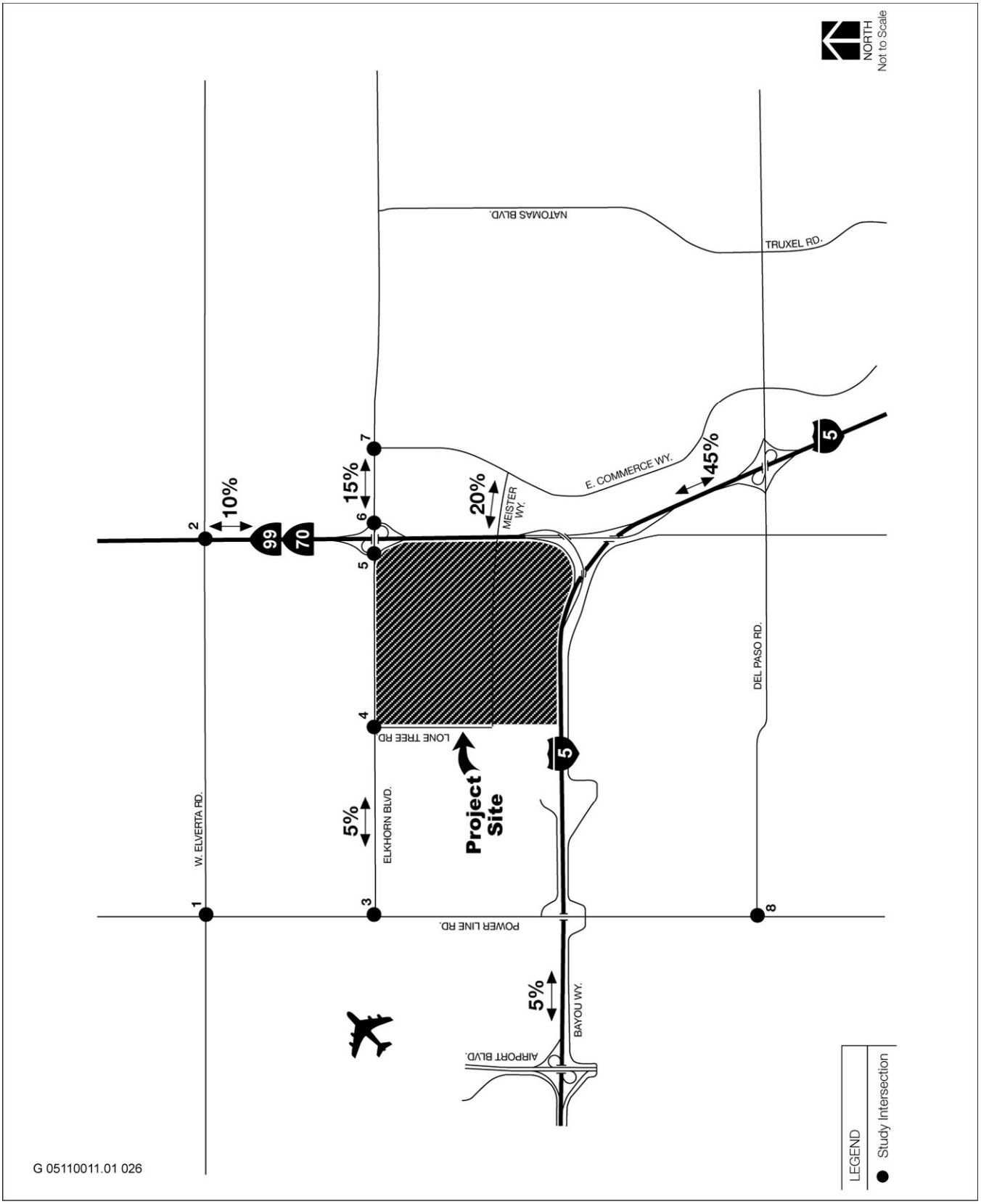
Source: TJKM 2005

A.M. Peak-Hour Project Trip Distribution without Meister Way Overpass **Exhibit 6.1-8**



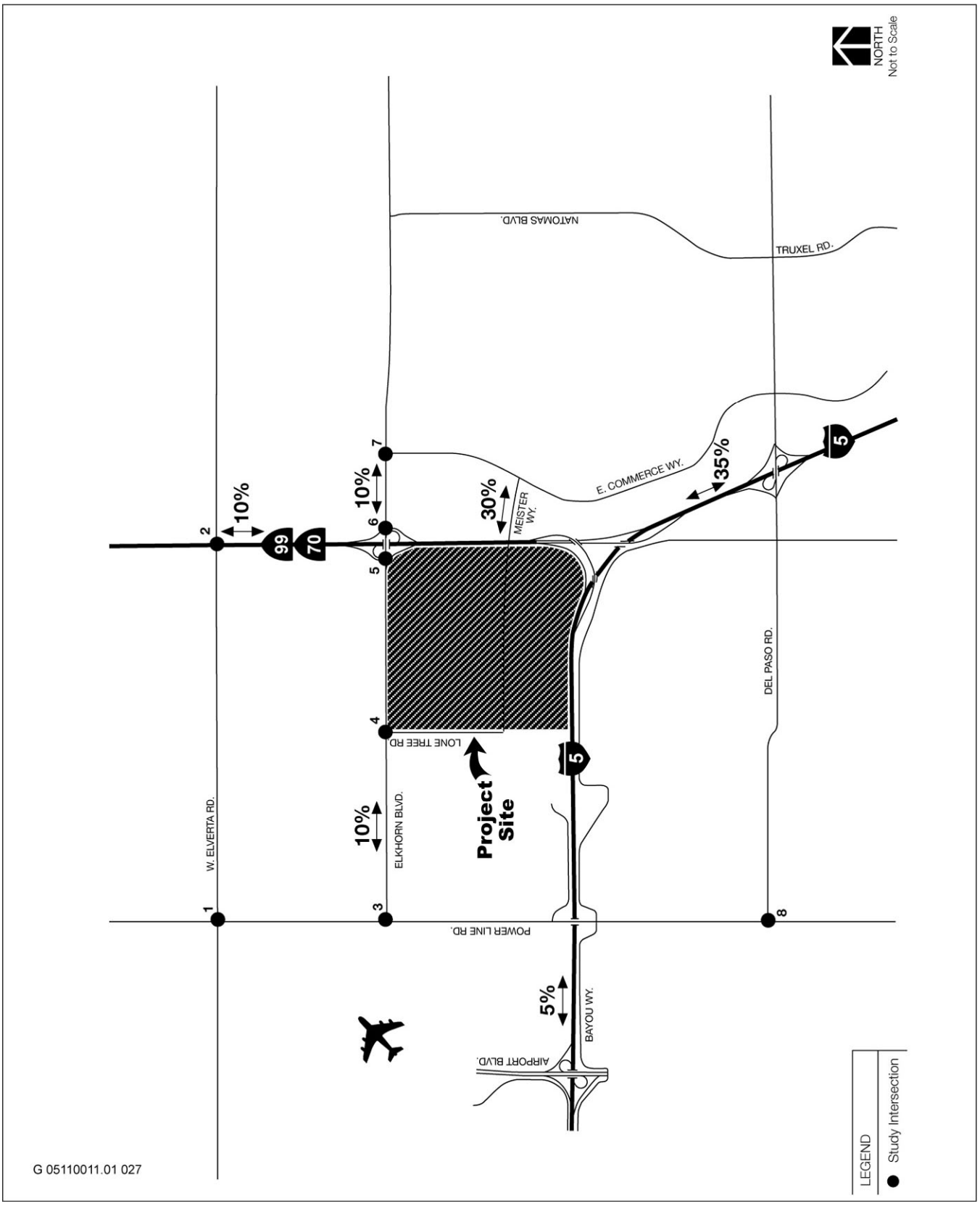
Source: TJKM 2005

P.M. Peak-Hour Project Trip Distribution without Meister Way Overpass **Exhibit 6.1-9**



Source: TJKM 2005

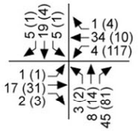
A.M. Peak-Hour Project Trip Distribution with Meister Way Overpass **Figure 6.1-10**



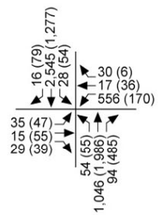
Source: TJKM 2005

P.M. Peak-Hour Project Trip Distribution with Meister Way Overpass **Exhibit 6.1-11**

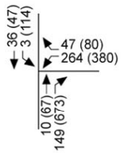
Intersection #1
Powerline Rd./Elverta Rd.



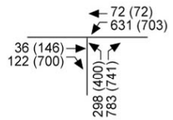
Intersection #2
Elverta Rd./SR 70/99



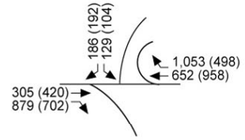
Intersection #3
Powerline Rd./Elkhorn Blvd.



Intersection #4
Elkhorn Blvd./Lone Tree Rd.



Intersection #5
SR 99 SB Ramps/Elkhorn Blvd.



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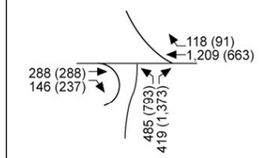
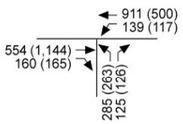
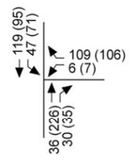
SR 99 NB Ramps/Elkhorn Blvd.



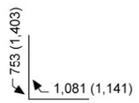
Intersection #7
Elkhorn Blvd./E. Commerce Wy.



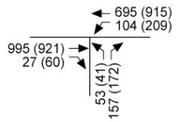
Intersection #8
Powerline Rd./Del Paso Rd.



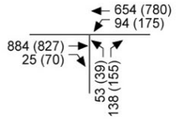
Intersection #15
Meister Wy./Lone Tree Rd.



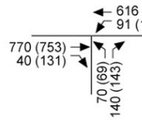
Intersection #18
Elkhorn Blvd./Project Street 1

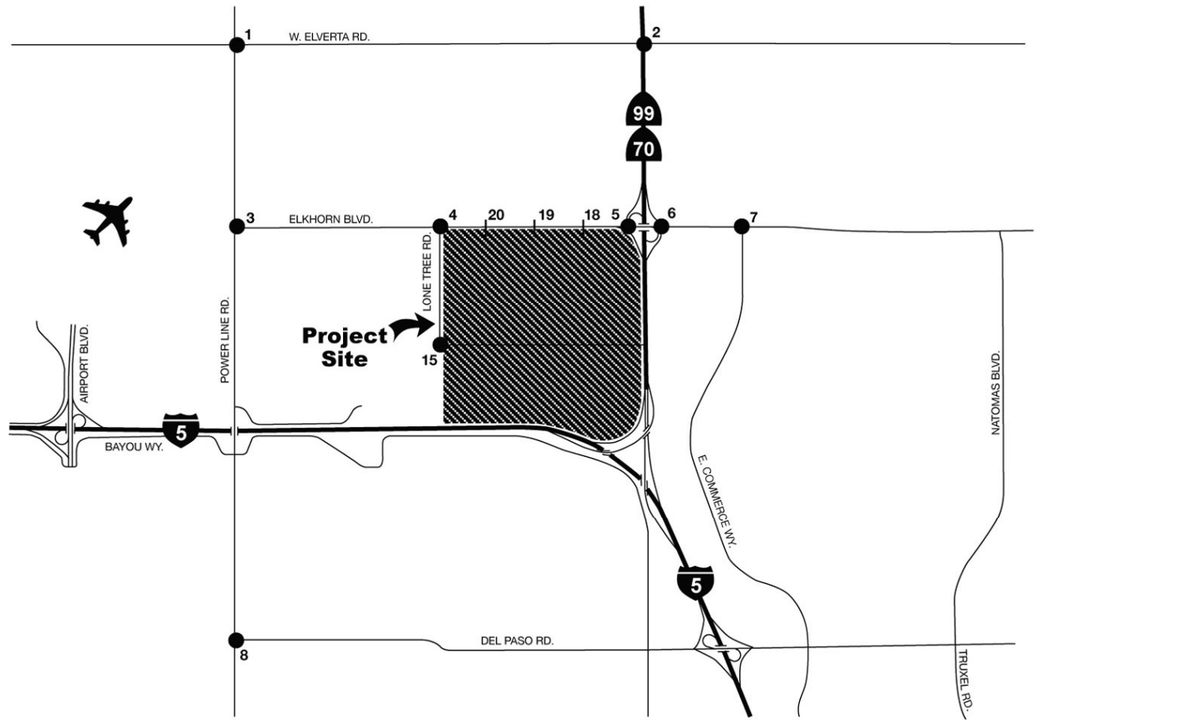


Intersection #19
Elkhorn Blvd./Project Street 2



Intersection #20
Elkhorn Blvd./Project Street 3





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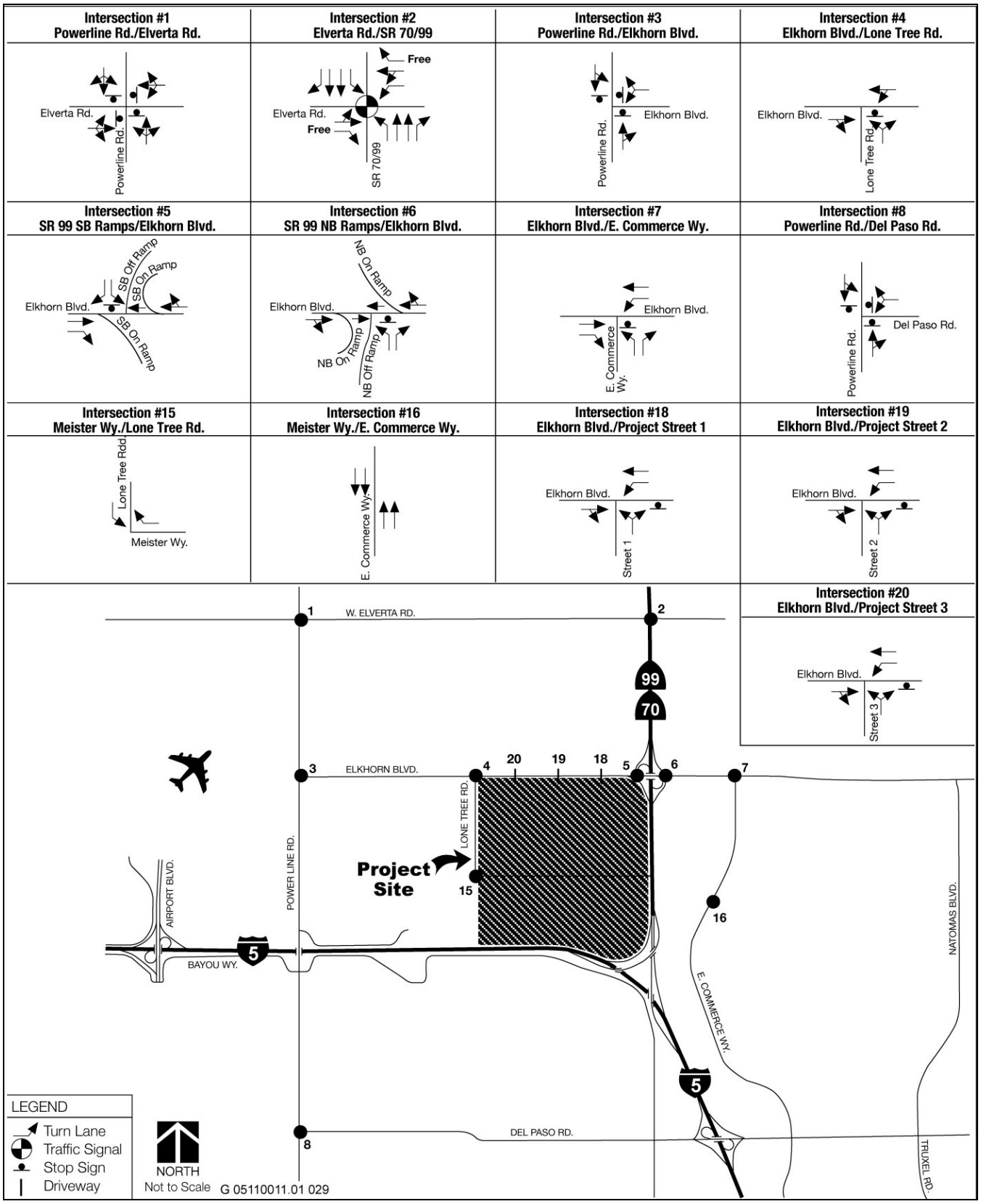
Source: TJKM 2005

Baseline Plus Project Peak-Hour Turning Movement Volumes (without the Meister Way-SR 70/99 Overpass)

Exhibit 6.1-12



Source: TJKM 2005

Baseline Plus Project Lane Configurations (without the Meister Way-SR 70/99 Overpass Exhibit 6.1-13

Results of Level of Service Analysis

Tables 6.1-21, 6.1-22, 6.1-23, and 6.1-24 summarize the intersection, roadway segment, freeway ramp and freeway mainline segment levels of service under the Baseline plus Project Conditions. Detailed calculations are contained in Appendix B.

As shown in Table 6.1-21, under Baseline plus Project Conditions the following study intersections are expected to operate unacceptably:

Table 6.1-21
Baseline plus Project Peak-Hour Intersection Operating Conditions

ID	Intersections	Traffic Control	A.M. Peak Hour			P.M. Peak Hour		
			Average Delay*	LOS	Queue Length (feet) [X: Y, Z][1]	Average Delay*	LOS	Queue Length (feet) [X: Y, Z][1]
1	Powerline Road and Elverta Road	All Way Stop	7.1	A	-	8.0	A	-
2	Elverta Road and SR 70/99	Signal	**111.4**	**F**	[SBT: 1820, 2,000+]	33.6	C	[WBL: 151, 425]
3	Powerline Road and Elkhorn Boulevard	All Way Stop	11.3	B	-	**94.9**	**F**	-
4	Elkhorn Boulevard and Lone Tree Road	One Way Stop	**5,569.3**	**(F)**	**[NBLR: >600, 1,200+]**	**7,805.5**	**(F)**	**[NBLR: >600, 1,200+]**
5	SR 70/99 SB Ramps and Elkhorn Boulevard	One Way Stop	(26.4)	(D)	[SBL: 76, 450]	**(67.1)**	**(F)**	**[SBR: 137, 450]**
6	SR 70/99 NB Ramps and Elkhorn Boulevard	One Way Stop	**5,372.8**	**(F)**	**[NBL: >600, 485]**	**3,973.2**	**(F)**	**[NBL: >600, 485]**
7	Elkhorn Boulevard and E. Commerce Way	One Way Stop	**6,955.1**	**(F)**	**[NBL: >600, 265]**	**6,775.9**	**(F)**	**[NBL: >600, 265]**
8	Powerline Road and Del Paso Road	One Way Stop	(9.2)	(A)	-	(10.8)	(B)	-
18	Elkhorn Boulevard and Project Street 1	One Way Stop	**473.1**	**(F)**	**[NBLR: 448, --]**	**903.5**	**(F)**	**[NBLR: 559, --]**
19	Elkhorn Boulevard and Project Street 2	One Way Stop	**256.9**	**(F)**	**[NBLR: 324, --]**	**382.4**	**(F)**	**[NBLR: 386, --]**
20	Elkhorn Boulevard and Project Street 3	One Way Stop	**231.5**	**(F)**	**[NBLR: 334, --]**	**428.2**	**(F)**	**[NBLR: 435, --]**

Notes: * Seconds per Vehicle; LOS = Level of Service; (X) = LOS for minor approach
(X.X) = Delay in seconds per vehicle for minor approach
Bold = Unacceptable Intersection Operation
[1] X:Y,Z = Most critical approach: 50th/95th Percentile Queue Length for unsignalized/signalized intersections respectively , Available Segment Length/Storage
- Queue length not reported for those intersections with acceptable LOS Conditions or all-way stop control
-- Storage length not available for future lane configurations/study intersections
NB = Northbound; SB = Southbound; EB = Eastbound; WB = Westbound; L = Left; T = Through; R = Right
HCM 2000 Methodology does not report the overall intersection LOS for one-way stop intersections

- Elverta Road and SR 70/99 – LOS F during the a.m. peak hour
- Powerline Road and Elkhorn Boulevard – LOS F during the p.m. peak hour
- Elkhorn Boulevard and Lone Tree Road – LOS F during the a.m. and p.m. peak hours
- SR 70/99 Southbound Ramps and Elkhorn Boulevard – LOS F during the p.m. peak hour
- SR 70/99 Northbound Ramps and Elkhorn Boulevard – LOS F during the a.m. and p.m. peak hours
- Elkhorn Boulevard and E. Commerce Way – LOS F during the a.m. and p.m. peak hours
- Elkhorn Boulevard and Project Street 1 – LOS F during the a.m. and p.m. peak hours
- Elkhorn Boulevard and Project Street 2 – LOS F during the a.m. and p.m. peak hours
- Elkhorn Boulevard and Project Street 3 – LOS F during the a.m. and p.m. peak hours

As shown in Table 6.1-22, Elkhorn Boulevard west of SR 70/99 interchange and Lone Tree Road south of Elkhorn Boulevard are expected to operate unacceptably (LOS F) under Baseline plus Project Conditions.

Table 6.1-22
Baseline plus Project Roadway Operating Conditions

Roadway Segment	Lanes (Max. ADT for acceptable LOS in vpd)	Daily Volume (vpd)	LOS
Elkhorn Boulevard west of SR 70/99 Interchange	2 (14,400)	**22,170**	**F**
Lone Tree Road south of Elkhorn Boulevard	2 (14,400)	**25,440**	**F**
Metro Air Parkway north of I-5 Interchange	**Future Roadway**		

Notes: LOS = Level of Service; vpd = vehicles per day; Max. ADT: Maximum average daily traffic
Bold = Unacceptable Roadway Segment Operation.

As shown in Table 6.1-23, all the study ramps are expected to continue to operate at acceptable levels of service under Baseline plus Project Conditions except for the following:

- SR 70/99 Northbound to Elkhorn Boulevard off-ramp – LOS F during the p.m. peak hour
- SR 70/99 Southbound to I-5 Southbound on-ramp – LOS F during the a.m. peak hour
- I-5 Northbound to SR 70/99 Northbound off-ramp – LOS F during the p.m. peak hour

Table 6.1-23
Baseline plus Project Peak-Hour Freeway Ramp Operating Conditions

Ramp	A.M. Peak Hour			P.M. Peak Hour		
	Volume (vph)	LOS	Queue Length (feet) [X: Y, Z][1]	Volume (vph)	LOS	Queue Length (feet) [X: Y, Z][1]
Elkhorn Boulevard to SR 70/99 northbound (Loop on-ramp)	147	B	-	220	B	-
Elkhorn Boulevard to SR 70/99 northbound (On-ramp)	129	B	-	146	B	-
SR 70/99 northbound to Elkhorn Boulevard (off-ramp)	995	C	[NBL: >600, 1,270]	**2070**	**F**	**[NBL: > 600, 1,270]**
SR 70/99 southbound to Elkhorn Boulevard (off-ramp)	330	C	[SBL: 76, 1,250]	300	C	[SBR: 137, 1,250]
Elkhorn Boulevard to SR 70/99 southbound (loop on-ramp)	993	B	-	641	B	-
Elkhorn Boulevard to SR 70/99 southbound (on-ramp)	889	B	-	704	B	-
SR 70/99 southbound to I-5 northbound (off-ramp)	982	C	-	174	C	-
I-5 southbound to SR 70/99 northbound (off-ramp)	141	C	-	1,335	C	-
SR 70/99 southbound to I-5 southbound (on-ramp)	**4,186**	**F**	-	2,508	C	-
I-5 northbound to SR 70/99 northbound (off-ramp)	2,055	C	-	**4,095**	**F**	-

Notes: LOS – level of service for ramp freeway junction areas of influence
Bold – Unacceptable Ramp Operation
Reference – Highway Capacity Manual 2000 Edition
vph – Vehicles per hour
[1] X:Y,Z = Most critical ramp approach: 95th Percentile Queue Length, Available Segment Length/Storage
- Slip ramps. Requires arrival and departure data to estimate queuing on-ramps. However, the ramps are long enough to contain queues. As shown in the table, traffic volumes are low on the slip ramps.

As shown in Table 6.1-24, the following freeway segments are expected to operate unacceptably (LOS E or worse) under Baseline plus Project Conditions:

- I-5 north of Del Paso Road – LOS F for the southbound approach during the a.m. peak hour and the northbound approach during the p.m. peak hour
- I-5 north of I-5/I-80 Interchange between I-80 and Arena Boulevard Exit – LOS F for the southbound approach during the a.m. peak hour and the northbound approach during the p.m. peak hour
- SR 70/99 between Elverta Road and Elkhorn Boulevard – LOS E for the southbound approach during the a.m. peak hour and the northbound approach during the p.m. peak hour
- SR 70/99 between Elkhorn Boulevard and I-5/SR 70/99 Interchange – LOS F for the southbound approach during the a.m. peak hour and the northbound approach during the p.m. peak hour

Table 6.1-24
Baseline plus Project Conditions Peak-Hour Freeway Mainline Operating Conditions

Freeway Segment	Direction	A.M. Peak Hour			P.M. Peak Hour		
		Volume (vph)	Density (pc/m/l)	LOS	Volume (vph)	Density (pc/m/l)	LOS
I-5 East of Power Line Road	WB/NB	3,031	28.4	D	3,162	30.0	D
	EB/SB	2,722	25.1	C	3,386	33.2	D
I-5 North of Del Paso Road	NB	4,104	25.3	C	**7,083**	**> 45**	**F**
	SB	**6,766**	**> 45**	**F**	4,559	28.5	D
I-5 North of I-5/I-80 Interchange between I-80 and Arena Boulevard Exit	NB	4,851	31.0	D	**8,459**	**> 45**	**F**
	SB	**7,722**	**> 45**	**F**	4,926	31.7	D
SR 70/99 between Elverta Road and Elkhorn Boulevard	NB	1,477	13.6	B	**3,727**	**39.7**	**E**
	SB	**3,615**	**37.3**	**E**	1,637	15.1	B
SR 70/99 between Elkhorn Boulevard and I-5/SR 70/99 Interchange	NB	2,196	20.2	C	**5,430**	**> 45**	**F**
	SB	**5,167**	**> 45**	**F**	2,682	24.7	C

Notes: vph - vehicles per hour; pc/m/l - passenger cars per mile per lane; LOS = Level of Service;
Bold = Unacceptable Freeway Segment Operation.

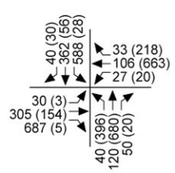
Cumulative (2025) plus Project Conditions Analysis

The Cumulative (2025) plus Project conditions analysis adds traffic from the proposed project to the Cumulative (2025) traffic conditions without project. This scenario presents the expected long term traffic impacts of the project on the study intersections, roadway segments, and freeway facilities. Exhibit 6.1-14 presents the Cumulative plus Project peak-hour turning movement volumes. Exhibit 6.1-15 presents Cumulative plus Project lane configurations.

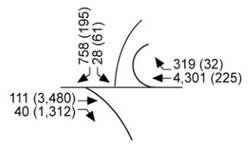
The Meister Way – SR 70/99 overpass is assumed to be constructed by year 2025. Also, under Cumulative plus Project conditions, the light rail transit (LRT) service is assumed to be extended from downtown Sacramento to the Sacramento International Airport area with a light rail stop along Meister Way in the center of the project site (within ½ mile).

Based on the growth in transit use in the Sacramento area between 1990 and 2000 and light rail use between the suburbs and downtown Sacramento (per 2000 SACOG Household Survey), a trip reduction of 11% for LRT use was applied to the residential portion of the project trip generation for Cumulative (2025) Conditions. A memo detailing this reduction is included in Appendix B. Based on the information provided in the recent traffic impact study completed for Hampton Station project (within ½ mile of a light rail station), a trip reduction of 8% was

Intersection #1
Powerline Rd./Elverta Rd.



Intersection #2a
Elverta Rd./SR 70/99 SB Ramps



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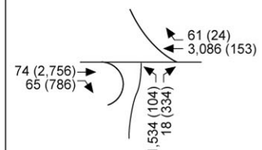
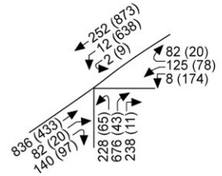
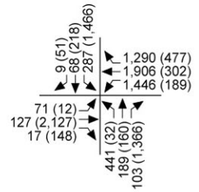
Elverta Rd./SR 70/99 N Ramps



Intersection #3
Powerline Rd./Elkhorn Blvd. Redesigned



Intersection #4
Elkhorn Blvd./Lone Tree Rd.



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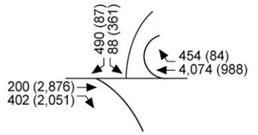

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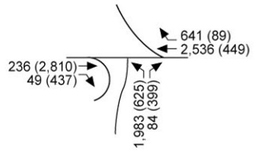
SR 99 NB Ramps/Elkhorn Blvd.



Intersection #7
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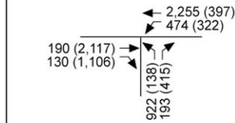
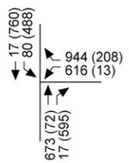
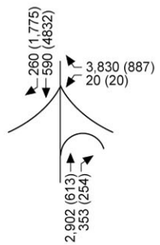


Intersection #8
Powerline Rd./Del Paso Rd.



Intersection #9
I-5 NB Ramps/Metro Air Pkwy.



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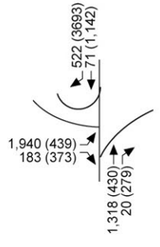
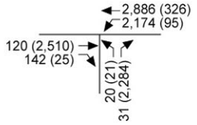
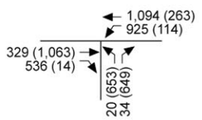


Intersection #11
Elverta Rd./Lone Tree Rd.



Intersection #12
Metro Air Pkwy./Elverta Rd.



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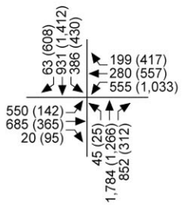
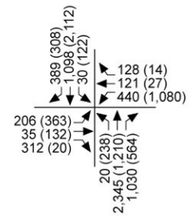
Metro Air Pkwy./Elkhorn Blvd.



Intersection #14
Metro Air Pkwy./Meister Wy.



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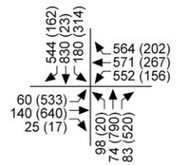
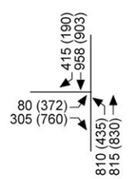
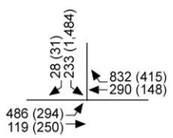
Meister Wy./Lone Tree Rd.



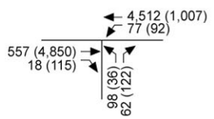
Intersection #16
Meister Wy./E. Commerce Wy.



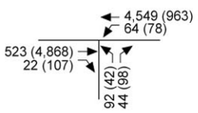
Intersection #17
Metro Air Pkwy./S. Bayou Rd.



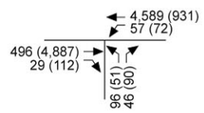
Intersection #18
Elkhorn Blvd./Project Street 1

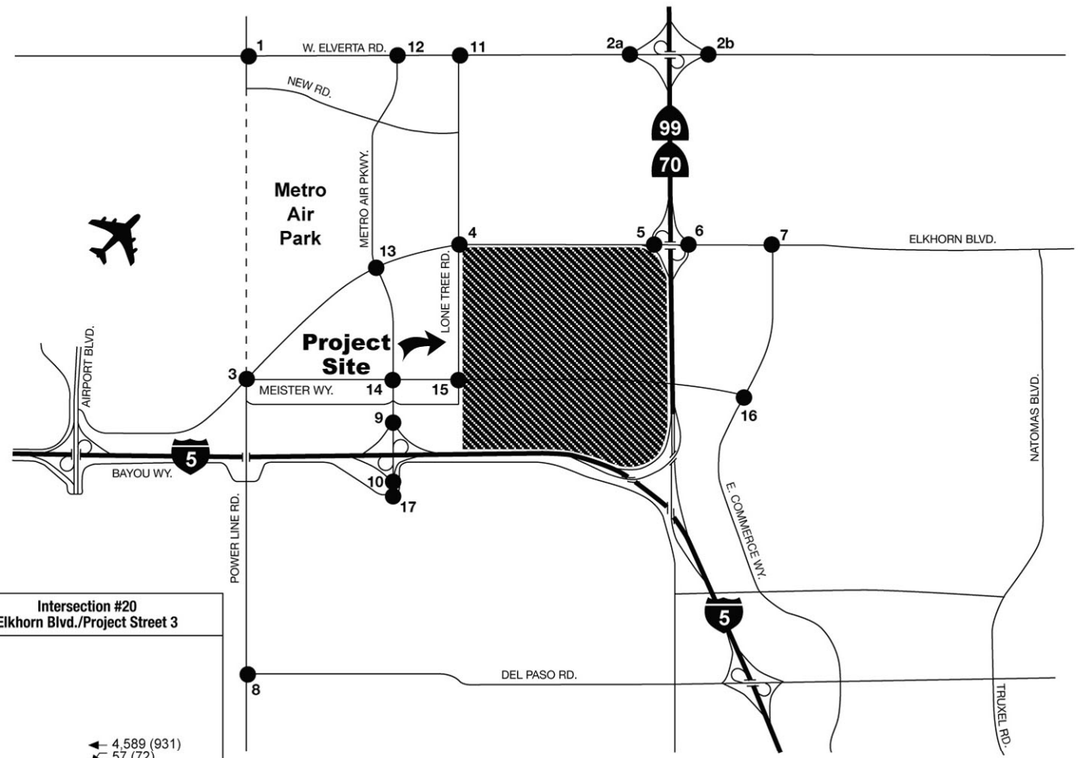


Intersection #19
Elkhorn Blvd./Project Street 2



Intersection #20
Elkhorn Blvd./Project Street 3



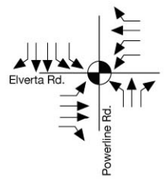


G 05110011.01 030

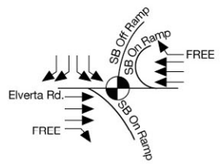
Source: TJKM 2005

Cumulative (2025) Plus Project Peak-Hour Turning Movement Volumes **Exhibit 6.1-14**

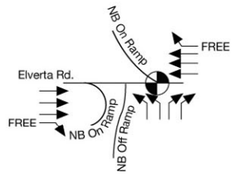
Intersection #1
Powerline Rd./Elverta Rd.



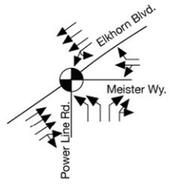
Intersection #2a
Elverta Rd./SR 70/99 SB Ramps



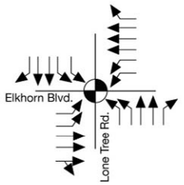
Intersection #2b
Elverta Rd./SR 70/99 N Ramps



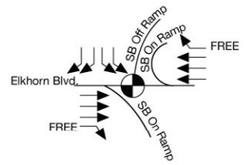
Intersection #3
Powerline Rd./Elkhorn Blvd. Realigned



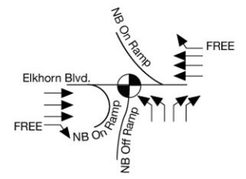
Intersection #4
Elkhorn Blvd./Lone Tree Rd.



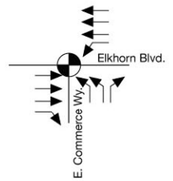
Intersection #5
SR 99 SB Ramps/Elkhorn Blvd.



Intersection #6
SR 99 NB Ramps/Elkhorn Blvd.

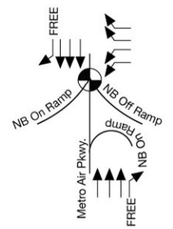


Intersection #7
Elkhorn Blvd./E. Commerce Wy.

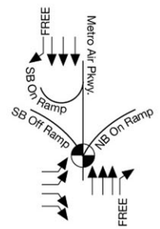


Intersection #8
Powerline Rd./Del Paso Rd.

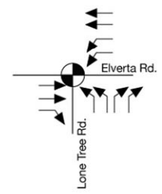
Intersection #9
I-5 NB Ramps/Metro Air Pkwy.



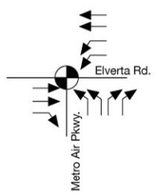
Intersection #10
I-5 SB Ramps/Metro Air Pkwy.



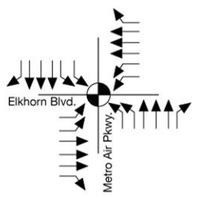
Intersection #11
Elverta Rd./Lone Tree Rd.



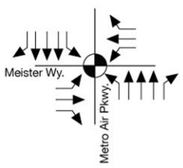
Intersection #12
Metro Air Pkwy./Elverta Rd.



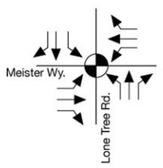
Intersection #13
Metro Air Pkwy./Elkhorn Blvd.



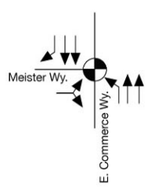
Intersection #14
Metro Air Pkwy./Meister Wy.



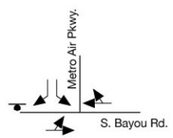
Intersection #15
Meister Wy./Lone Tree Rd.



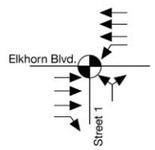
Intersection #16
Meister Wy./E. Commerce Wy.



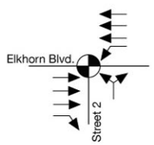
Intersection #17
Metro Air Pkwy./S. Bayou Rd.



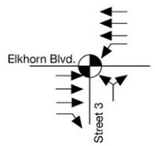
Intersection #18
Elkhorn Blvd./Project Street 1

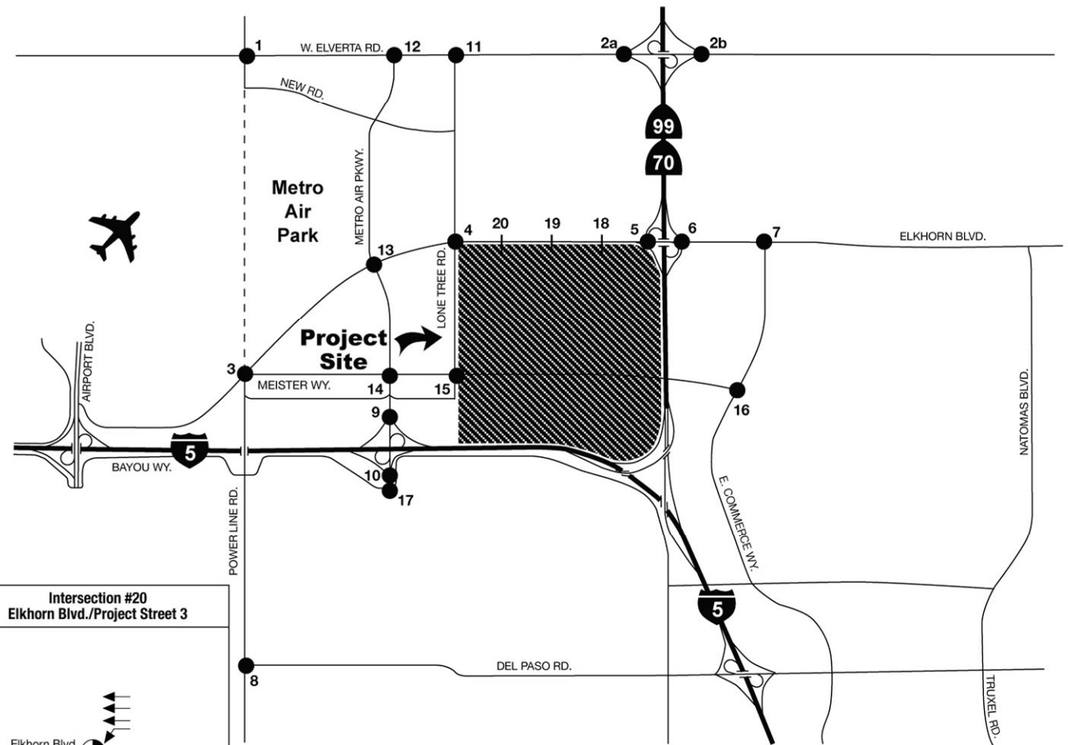


Intersection #19
Elkhorn Blvd./Project Street 2



Intersection #20
Elkhorn Blvd./Project Street 3





G 05110011.01 038

Source: TJKM 2005

Cumulative (2025) Plus Project Lane Configurations **Exhibit 6.1-15**

applied to the retail and commercial portion of the project trip generation for Cumulative (2025) Conditions. It is important to note the Hampton Station project was a 176-unit residential project ½ mile from LRT while the proposed project is an entire mixed-use community planned around LRT.

Results of Level of Service Analysis

Tables 6.1-25, 6.1-26, 6.1-27, and 6.1-28 summarize the intersection, roadway segment, freeway ramp and freeway mainline segment levels of service under Cumulative (2025) plus Project conditions. Detailed calculations are contained in Appendix B. Under Cumulative (2025) plus Project conditions, the following study intersections are expected to operate unacceptably (Table 6.1-25):

- SR 70/99 Southbound Ramps and Elverta Road (LOS F during the a.m. peak)
- SR 70/99 Northbound Ramps and Elverta Road (LOS F during the a.m. peak)
- Elkhorn Boulevard and Lone Tree Road (LOS D and LOS F during the a.m. and p.m. peaks, respectively)
- SR 70/99 Southbound Ramps and Elkhorn Boulevard (LOS E during the a.m. peak)
- SR 70/99 Northbound Ramps and Elkhorn Boulevard (LOS F during the a.m. peak)
- Metro Air Parkway and I-5 Northbound Ramps (LOS F during the a.m. and p.m. peaks)
- Elverta Road and Lone Tree Road (LOS E and LOS F during the a.m. and p.m. peaks, respectively)
- Meister Way and Metro Air Parkway (LOS E and LOS F during the a.m. and p.m. peaks, respectively)
- Meister Way and Lone Tree Road (LOS D and LOS F during both the a.m. and p.m. peaks, respectively)
- Meister Way and E. Commerce Way (LOS D and LOS F during the a.m. and p.m. peaks, respectively)
- Metro Air Parkway and Bayou Road (LOS F during the a.m. and p.m. peaks)
- Elkhorn Boulevard and Project Street 1 (LOS D and LOS F during the a.m. and p.m. peaks, respectively)
- Elkhorn Boulevard and Project Street 2 (LOS D and LOS F during the a.m. and p.m. peaks, respectively)
- Elkhorn Boulevard and Project Street 3 (LOS D and LOS F during the a.m. and p.m. peaks, respectively)

As shown in Table 6.1-26, under Cumulative plus Project conditions the following segments are expected to operate unacceptably:

- Elkhorn Boulevard west of SR 70/99 Interchange – LOS F
- Metro Air Parkway north of I-5 Interchange – LOS F
- Meister Way west of SR 70/99 – LOS E

As shown in Table 6.1-27 the following ramps are expected to operate unacceptably under Cumulative (2025) plus Project conditions:

- SR 70/99 northbound to Elkhorn Boulevard off-ramp – LOS F during the a.m. peak hour
- Elkhorn Boulevard to SR 70/99 southbound slip on-ramp – LOS E during the p.m. peak hour
- I-5 northbound to SR 70/99 northbound off-ramp – LOS E during the a.m. peak hour
- I-5 northbound to Metro Air Parkway off-ramp – LOS F during the a.m. peak hour
- I-5 southbound to Metro Air Parkway off-ramp – LOS F during the a.m. peak hour
- Metro Air Parkway to I-5 southbound loop on-ramp – LOS F during the p.m. peak hour

As shown in Table 6.1-28, the following freeway segments are expected to operate unacceptably under Cumulative (2025) plus Project conditions:

- I-5 East of Powerline Road – LOS F for the northbound approach during the a.m. peak hour and the southbound approach during the p.m. peak hour

- I-5 north of Del Paso Road – LOS F for the northbound approach during the a.m. peak hour and the southbound approach during the p.m. peak hour

- I-5 north of I-5/I-80 Interchange between I-80 and Arena Boulevard Exit – LOS F for the northbound approach during the a.m. peak hour and the southbound approach during the p.m. peak hour

Table 6.1-25
Cumulative (2025) plus Project Peak-Hour Intersection Operating Conditions

ID	Intersections	Traffic Control	A.M. Peak Hour			P.M. Peak Hour		
			Average Delay or V/C*	LOS	Queue Length (feet) [X: Y][1]	Average Delay or V/C*	LOS	Queue Length (feet) [X, Y][1]
1	Powerline Road and Elverta Road (County)	Signal	0.71	C	-	0.84	D	-
2a	SR 70/99 SB Ramps and Elverta Road	Signal	**141.3**	**F**	**[WBT: 2,160]**	8.1	A	[EBT: 547]
2b	SR 70/99 NB Ramps and Elverta Road	Signal	**120.0**	**F**	**[WBT: 1,349]**	13.1	B	[EBT: 469]
3	Powerline Road and Elkhorn Boulevard and Meister Way (County)	Signal	0.76	C	-	0.79	C	-
4	Elkhorn Boulevard and Lone Tree Road	Signal	**48.4**	**D**	**[WBR: 1,906]**	**226.2**	**F**	**[SBL: 1,034]**
5	SR 70/99 SB Ramps and Elkhorn Boulevard	Signal	**78.0**	**E**	**[WBT: 1,893]**	10.9	B	[EBT: 596]
6	SR 70/99 NB Ramps and Elkhorn Boulevard	Signal	**125.0**	**F**	**[WBT: 1,163]**	16.3	B	[EBT: 519]
7	Elkhorn Boulevard and E. Commerce Way	Signal	20.2	C	-	33.4	C	-
8	Powerline Road and Del Paso Road (County)	Signal	0.90	D	-	0.54	A	-
9	I-5 NB Ramps and Metro Air Parkway	Signal	**256.6**	**F**	**[WBR: 2,694]**	**102.9**	**F**	**[SBT: 2,371]**
10	I-5 SB Ramps and Metro Air Parkway	Signal	34.5	C	-	8.0	A	-
11	Elverta Road and Lone Tree Road (County)	Signal	**0.97**	**E**	[WBT: 1,675]	**1.69**	**F**	**[NBR: 1,524]**
12	Elverta Road and Metro Air Parkway (County)	Signal	0.71	C	-	0.66	B	-
13	Elkhorn Boulevard and Metro Air Parkway (County)	Signal	0.88	D	[WBL: 311]	0.87	D	[WBL: 551]
14	Meister Way and Metro Air Parkway (County)	Signal	0.89	D	**[WBL: 725]**	**1.45**	**F**	**[WBL: 1,460]**
15	Meister Way and Lone Tree Road (City/County)	Signal	**49.4**	**D**	**[WBL: 929]**	**116.5**	**F**	**[EBL: 586]**
16	Meister Way and E. Commerce Way	Signal	**53.5**	**D**	**[NBL: 928]**	**109.3**	**F**	**[EBLR: 1,021]**
17	Bayou Road and Metro Air Parkway	One Way Stop	**8,994.0**	**(F)**	**[SBL: >600]**	**9795**	**(F)**	**[SBL: >600]**
18	Elkhorn Boulevard and Project Street 1	Signal	**40.3**	**D**	**[WBT: 2,069]**	**99.6**	**F**	**[EBT: 2,329]**
19	Elkhorn Boulevard and Project Street 2	Signal	**41.7**	**D**	**[WBT: 2,099]**	**95.5**	**F**	**[EBT: 2,342]**
20	Elkhorn Boulevard and Project Street 3	Signal	**45.9**	**D**	**[WBT: 2,128]**	**97.4**	**F**	**[EBT: 2,100]**

Notes: * Volume/Capacity for County intersections; Seconds per Vehicle; LOS = Level of Service; (X) = LOS for minor approach

(X.X) = Delay in seconds per vehicle for minor approach

Bold = Unacceptable Intersection Operation.

[1] X: Y = Most critical approach: 50th/95th Percentile Queue Length for unsignalized/signalized intersections respectively

- Queue length not reported for those intersections with acceptable LOS conditions

Storage length not available for future lane configurations/study intersections

NB = Northbound; SB = Southbound; EB = Eastbound; WB = Westbound; L = Left; T = Through; R = Right

HCM 2000 Methodology does not report the overall intersection LOS for one-way stop intersections

Table 6.1-26 Cumulative (2025) plus Project Roadway Operating Conditions			
Roadway Segment	Lanes (Max. ADT for acceptable LOS in vpd)	Daily Volume (vpd)	LOS
Elkhorn Boulevard west of SR 70/99 Interchange	6 (43,200)	**59,995**	**F**
Lone Tree Road south of Elkhorn Boulevard	4 (28,800)	20,802	A
Metro Air Parkway north of I-5 Interchange	6 (48,600)	**81,081**	**F**
Meister Way west of SR 70/99	2 (14,400)	**17,198**	**E**
Notes: LOS = Level of Service; vpd = vehicles per day; Max. ADT: Maximum average daily traffic **Bold** = Unacceptable Roadway Segment Operation.			

Table 6.1-27 Cumulative (2025) plus Project Peak-Hour Freeway Ramp Operating Conditions						
Ramp	A.M. Peak Hour			P.M. Peak Hour		
	Volume (vph)	LOS	Queue Length (feet) [X: Y, Z][1]	Volume (vph)	LOS	Queue Length (feet) [X: Y, Z][1]
Elkhorn Boulevard to SR 70/99 northbound (Loop on-ramp)	49	B	-	437	B	-
Elkhorn Boulevard to SR 70/99 northbound (On-ramp)	641	B	-	90	B	-
SR 70/99 northbound to Elkhorn Boulevard (off-ramp)	**2,067**	**F**	**[NBL: 1,290, 1,270]**	1,024	C	[NBL: 222, 1,270]
SR 70/99 southbound to Elkhorn Boulevard (off-ramp)	577	C	[SWR: 468, 1,250]	447	C	[SWL: 115, 1,250]
Elkhorn Boulevard to SR 70/99 southbound (loop on-ramp)	454	B	-	84	B	-
Elkhorn Boulevard to SR 70/99 southbound (on-ramp)	404	B	-	**2,045**	**E**	-
Elverta Boulevard to SR 70/99 northbound (Loop on-ramp)	65	B	-	785	B	-
Elverta Boulevard to SR 70/99 northbound (On-ramp)	61	B	-	24	B	-
SR 70/99 northbound to Elverta Boulevard (off-ramp)	1,553	D	[NBL: 1,021, 1,270]	437	C	[NBR: 105, 1,270]
SR 70/99 southbound to Elverta Boulevard (off-ramp)	785	C	[SWR: 709, 1,250]	256	C	[SWL: 35, 1,250]
Elverta Boulevard to SR 70/99 southbound (loop on-ramp)	319	B	-	32	B	-
Elverta Boulevard to SR 70/99 southbound (on-ramp)	40	B	-	1,312	C	-
SR 70/99 southbound to I-5 northbound (off-ramp)	568	C	-	186	C	-
I-5 southbound to SR 70/99 northbound (off-ramp)	156	C	-	516	C	-
SR 70/99 southbound to I-5 southbound (on-ramp)	1,662	B	-	3,605	D	-
I-5 northbound to SR 70/99 northbound (off-ramp)	**3,362**	**E**	-	2,062	C	-
I-5 northbound to Metro Air Parkway (off-ramp)*	**3,828**	**F**	**[WBR: 2,693, 1,270]**	888	C	[WBR: 373, 1270]
Metro Air Parkway to I-5 northbound (On-ramp)*	259	B	-	1,776	D	-
Metro Air Parkway to I-5 northbound (loop on-ramp)*	353	B	-	254	B	-
I-5 southbound to Metro Air Parkway (off-ramp)*	**2,122**	**F**	**[SEL: 776, 1,250]**	809	C	[SEL: 60, 1,250]
Metro Air Parkway to I-5 southbound (On-ramp)*	0	B	-	278	B	-
Metro Air Parkway to I-5 southbound (loop on-ramp)*	521	B	-	**3,690**	**F**	-

Table 6.1-27
Cumulative (2025) plus Project Peak-Hour Freeway Ramp Operating Conditions

Ramp	A.M. Peak Hour			P.M. Peak Hour		
	Volume (vph)	LOS	Queue Length (feet) [X: Y, Z][1]	Volume (vph)	LOS	Queue Length (feet) [X: Y, Z][1]

Notes: LOS – level of service for ramp freeway junction areas of influence
Bold – Unacceptable Ramp Operation
Reference – Highway Capacity Manual 2000 Edition
vph – Vehicles per hour
* Future ramps
[1] X:Y,Z = Most critical ramp approach: 95th Percentile Queue Length, Available Segment Length/Storage
- Slip ramps. Requires arrival and departure data to estimate queuing on-ramps. However, the ramps are long enough to contain queues. As shown in the table, traffic volumes are low on the slip ramps.

Table 6.1-28
Cumulative (2025) plus Project Peak-Hour Freeway Mainline Operating Conditions

Freeway Segment	Direction	A.M. Peak Hour			P.M. Peak Hour		
		Volume (vph)	Density (pc/m/l)	LOS	Volume (vph)	Density (pc/m/l)	LOS
I-5 East of Power Line Road	NB	**6,304**	-	**F**	3,854	42.9	E
	SB	3,278	31.6	D	**6,130**	-	**F**
I-5 North of Del Paso Road	NB	**9,099**	-	**F**	5,730	26.6	D
	SB	4,784	22.0	C	**9,218**	-	**F**
I-5 North of I-5/I-80 Interchange between I-80 and Arena Boulevard Exit	NB	**10,783**	-	**F**	7,305	38.0	E
	SB	6,004	28.1	D	**11,189**	-	**F**
SR 70/99 between Elverta Road and Elkhorn Boulevard	NB	2,141	19.7	C	2,079	19.1	C
	SB	1,949	17.9	B	2,108	19.4	C
SR 70/99 between Elkhorn Boulevard and I-5/SR 70/99 Interchange	NB	3,518	21.6	C	2,578	15.8	B
	SB	2,230	13.7	B	3,791	23.3	C

Notes: vph - vehicles per hour; pc/m/l - passenger cars per mile per lane; LOS = Level of Service;
Bold = Unacceptable Freeway Segment Operation.

Thresholds of Significance

City of Sacramento

Signalized and Unsignalized Intersections

As stated in the City's Traffic Impact Analysis Guidelines, a significant traffic impact would occur under the following conditions:

- The addition of traffic generated by a project degrades peak period level of service (LOS) of a facility from A, B, or C (without project) to D, E, or F (with project); or,
- The LOS (without project) is D, E, or F and project generated traffic increases the peak period average vehicle delay by five seconds or more.

The City of Sacramento General Plan, specifically section 5-11 – Goal D, states that the City will "work towards achieving a Level of Service C on the City's local and major street system. However, because of the constraints associated with existing development in the City, and because of other environmental concerns, this

goal cannot always be met." It is important to note that the study intersections under Caltrans jurisdiction were evaluated using the aforementioned criteria.

Roadway Facilities

An impact is considered significant for roadways if the proposed project would:

- Generate traffic that would degrade peak period LOS C or better (without project) to LOS D or worse (with the project); or
- For facilities that are worse than LOS C without the project, if the project increases the Volume/Capacity ratio by 0.02 or more on a roadway.

Pedestrian Facilities

A significant pedestrian circulation impact would occur if a project would:

- Result in unsafe conditions for pedestrians, including unsafe increase in pedestrian/bicycle or pedestrian/motor vehicle conflicts.

Bicycle Facilities

A significant bikeway impact would occur if:

- The project would hinder or eliminate an existing designated bikeway, or if the project would interfere with the implementation of a proposed bikeway, or
- The project would result in unsafe conditions for bicyclists, including unsafe bicycle/pedestrian or bicycle/motor vehicle conflicts.

Transit Facilities

An impact to the transit system would be significant if the proposed project would:

- Generate an increase in ridership, when added to existing or future ridership, which exceeds available or planned system capacity. Capacity is defined as the total number of passengers the system of buses and light rail vehicles can carry during the peak hours of operation.

Parking

A significant parking impact would occur if the anticipated parking demand of the project exceeds the available or planned parking supply.

Sacramento County

Roadways/Signalized Intersections

As stated in the County's Traffic Impact Analysis Guidelines, a project is considered to have a significant impact if it would:

- Result in a roadway or a signalized intersection at an acceptable LOS D to deteriorate to an unacceptable LOS E or

- Increase the V/C ratio by more than 0.05 at a roadway or at a signalized intersection that is operating at an unacceptable LOS without the project

Unsignalized Intersections

A project would have a significant impact if it would:

- Result in an unsignalized intersection movement/approach operating at an acceptable LOS D to deteriorate to an unacceptable LOS E and also cause the intersection to meet a traffic signal warrant; or
- For an unsignalized intersection that meets a signal warrant, increase the delay by more than 5 seconds at a movement/approach that is operating at an unacceptable LOS E without the project

Caltrans (California Department of Transportation)

Freeway Facilities

A significant impact to the freeway system would occur if the project would:

- Result in off-ramps with vehicle queues that extend into the ramp's deceleration area onto the freeway.
- Result in an increase in traffic that would cause any ramp's merge/diverge level of service to be worse than the freeway's level of service.
- Result in project traffic increases that cause the freeway level of service to deteriorate beyond level of service D. However, LOS E is acceptable for the I-5 freeway segments in the vicinity of the project area and downtown Sacramento area (milepost: 10.8 to 34.7).

In addition, a significant impact would occur if the expected queue were greater than the storage capacity.

Impacts and Mitigation Measures

Baseline plus Project Conditions

IMPACT 6.1-1

Impacts to Study Intersections. *Traffic volumes associated with the project would cause several study area intersections (i.e., Elverta Road and SR 70/99, Elkhorn Boulevard and Lone Tree Road, SR 70/99 NB Ramps and Elkhorn Boulevard, Elkhorn Boulevard and East Commerce Way, Elkhorn Boulevard and Project Street 1, Elkhorn Boulevard and Project Street 1, and Elkhorn Boulevard and Project Street 1) to operate unacceptably and exceed City and County thresholds of significance for intersection operations. Because study area intersections would operate unacceptably as a result of the project, this would be a* ***significant*** *impact.*

The project would result in the generation of 41,119 daily vehicle trips, 3,153 a.m. peak-hour trips (1,214 inbound/1,939 outbound) and 4,467 p.m. peak-hour trips (2,494 inbound/1,973 outbound). Please refer to Table 6.1-20 for a breakdown of project-generate trips by land use type.

As shown in Table 6.1-29, the intersections of Elverta Road and SR 70/99 (a.m. peak hour), SR 70/99 northbound ramps and Elkhorn Boulevard (p.m. peak hour), and Elkhorn Boulevard and East Commerce Way (a.m. and p.m. peak hours) currently operate unacceptably.

Table 6.1-29
Baseline Peak-Hour Intersection Operating Conditions

ID	Intersections	Traffic Control	Average Delay* (Level of Service)			
			No Project		Plus Project	
			AM	PM	AM	PM
1	Powerline Road and Elverta Road	All Way Stop	7.2 (A)	7.0 (A)	7.1 (A)	8.0 (A)
2	Elverta Road and SR 70/99	Signal	**76.3 (E)**	18.2 (B)	**111.4 (F)**	33.6 (C)
3	Powerline Road and Elkhorn Boulevard	All Way Stop	7.1 (A)	7.3 (A)	11.3 (B)	**94.9 (F)**
4	Elkhorn Boulevard and Lone Tree Road	One Way Stop	No Traffic on Lone Tree Road		5,569(F)	**7,805 (F)**
5	SR 70/99 SB Ramps and Elkhorn Boulevard	One Way Stop	9.3 (A)	9.1 (A)	26.4 (D)	**67.1 (F)**
6	SR 70/99 NB Ramps and Elkhorn Boulevard	One Way Stop	13.2 (B)	**270 (F)**	**5,372 (F)**	**3,973 (F)**
7	Elkhorn Boulevard and E. Commerce Way	One Way Stop	**6,932 (F)**	**6,676 (F)**	**6,955 (F)**	**6,775 (F)**
8	Powerline Road and Del Paso Road	One Way Stop	9.1 (A)	9.0 (A)	9.2 (A)	10.8 (B)
18	Elkhorn Boulevard and Project Street 1	One Way Stop	No Project Traffic		**473 (F)**	**903 (F)**
19	Elkhorn Boulevard and project Street 2	One Way Stop	No Project Traffic		**256 (F)**	**382 (F)**
20	Elkhorn Boulevard and Project Street 3	One Way Stop	No Project Traffic		**231 (F)**	**428 (F)**

Notes: * Seconds per Vehicle; LOS = Level of Service; **Bold** = Unacceptable Intersection Operation

With implementation of the project, the intersection of Elverta Road and SR 70/99 would degrade from LOS E to LOS F during the a.m. peak hour and would increase delay by more that 35 seconds. The intersection of SR 70/99 northbound ramps and Elkhorn Boulevard would degrade from LOS B to LOS F during the a.m. peak hour and would continue to operate at LOS F during the p.m. peak hour with average delay increased by more than 5 seconds.

With implementation of the project, the project would cause the intersections of Elkhorn Boulevard and Lone Tree Road (a.m. and p.m. peak hours); SR 70/99 south bound ramps and Elkhorn Boulevard (p.m. peak hours); Elkhorn Boulevard and Project Street 1 (a.m. and p.m. peak hours); Elkhorn Boulevard and Project Street 2 (a.m. and p.m. peak hours); and Elkhorn Boulevard and Project Street 3 (a.m. and p.m. peak hours) to degrade to unacceptable service levels.

Because the project would either cause an intersection that currently operates unacceptably to exceed the City or County's applicable thresholds or would cause intersections that currently operate acceptably to degrade to an unacceptable condition, the project would result in significant impacts to study area intersections.

Mitigation Measure 6.1-1a: Develop a Financial Plan (City of Sacramento and LAFCo)

The applicant shall be required to develop the Greenbriar Finance Plan for review and approval by the City prior to annexation. The plan shall identify the financing mechanisms for all feasible transportation improvements defined as mitigation measures, including but not limited to, new roadways, roadways widening, traffic signals, and public transit. The project applicant shall coordinate the preparation of the finance plan with the City of Sacramento, Sacramento County, and the Metro Air Park Public Facilities Financing Plan. All mitigation

measures with "fair share" contributions would be implemented through the proposed financing mechanism(s) indicated in the finance plan or by some other mechanism as determined by the City of Sacramento in consultation with the Sacramento County. The Greenbriar Finance Plan shall be adopted by the City at the time the project is considered for approval. A copy of the Draft Greenbriar Finance Plan is included in Appendix C of this EIR.

Mitigation Measure 6.1-1b: Meister Way Overpass (City of Sacramento)

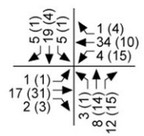
The project applicant in coordination with the City shall ensure that the Meister Way overpass is constructed and in operation on or before 65% buildout of the project based on total project trips. With implementation of this improvement, operating conditions at study area intersections would substantially improve as shown in Table 6.1-30 below. Exhibit 6.1-16 shows the Baseline plus Project peak-hour turning movement volumes with the Meister Way overpass and Exhibit 6.1-17 shows the Baseline plus Project lane configurations with Meister Way overpass.

Table 6.1-30
Baseline Peak-Hour Intersection Operating Conditions

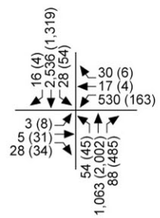
ID	Intersections	Traffic Control	Average Delay* (Level of Service)			
			No Project		Plus Project (with the Meister Way- SR 70/99 Overpass)	
			AM	PM	AM	PM
1	Powerline Road and Elverta Road	All Way Stop	7.2 (A)	7.0 (A)	7.2 (A)	7.1 (A)
2	Elverta Road and SR 70/99	Signal	**76.3 (E)**	18.2 (B)	**86.1 (F)**	26.8 (C)
	With Mitigation				**36.8 (D)**	19.0 (B)
3	Powerline Road and Elkhorn Boulevard	All Way Stop	7.1 (A)	7.3 (A)	7.9 (A)	9.4 (A)
4	Elkhorn Boulevard and Lone Tree Road	One Way Stop	No Traffic on Lone Tree Road		**55.9 (F)**	**505 (F)**
	With Mitigation	Signal			6.3 (A)	32.3 (C)
5	SR 70/99 SB Ramps and Elkhorn Boulevard	One Way Stop	9.3 (A)	9.1 (A)	14.2 (B)	26.3 (D)
6	SR 70/99 NB Ramps and Elkhorn Boulevard	One Way Stop	13.2 (B)	**120+ 270 (F)**	**243 (F)**	**502 (F)**
	With Mitigation	Signal			25.3 (C)	26.2 (C)
7	Elkhorn Boulevard and E. Commerce Way	One Way Stop	**120+ 6,932 (F)**	**120+ 6,676 (F)**	**6,943 (F)**	**6,711 (F)**
	With Mitigation	Signal			9.5 (A)	34.4 (C)
8	Powerline Road and Del Paso Road	One Way Stop	9.1 (A)	9.0 (A)	9.1 (A)	9.2 (A)
16	Meiser Way And E. Commerce Way	Signal	No Meister Way overpass		8.1 (A)	23.0 (C)
18	Elkhorn Boulevard and Project Street 1	One Way Stop	No Project Traffic		**30.0 (D)**	**68.9 (F)**
	With Mitigation	Signal			8.5 (A)	8.2 (A)
19	Elkhorn Boulevard and project Street 2	One Way Stop	No Project Traffic		21.8 (C)	**36.3 (E)**
	With Mitigation	Signal			5.6 (A)	7.4 (A)
20	Elkhorn Boulevard and Project Street 3	One Way Stop (Full Access)	No Project Traffic		18.0 (C)	**30.0 (D)**
	With Mitigation	One Way Stop (Right in/Right out Access Only)			13.4 (B)	14.3 (B)

Notes: * Seconds per Vehicle; LOS = Level of Service; **Bold** = Unacceptable Intersection Operation

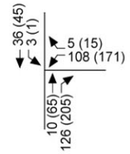
Intersection #1
Powerline Rd./Elverta Rd.



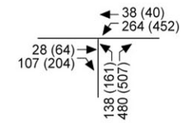
Intersection #2
Elverta Rd./SR 70/99



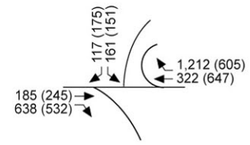
Intersection #3
Powerline Rd./Elkhorn Blvd.



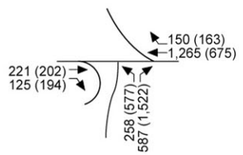
Intersection #4
Elkhorn Blvd./Lone Tree Rd.



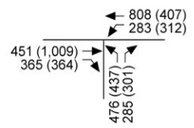
Intersection #5
SR 99 SB Ramps/Elkhorn Blvd.



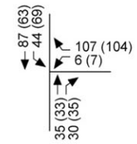
Intersection #6
SR 99 NB Ramps/Elkhorn Blvd.



Intersection #7
Elkhorn Blvd./E. Commerce Wy.

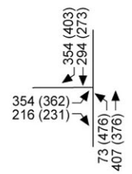


Intersection #8
Powerline Rd./Del Paso Rd.

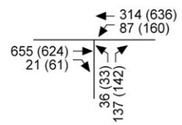


Intersection #15
Meister Wy./Lone Tree Rd.

Intersection #16
Meister Wy./E. Commerce Wy.

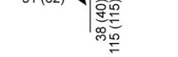


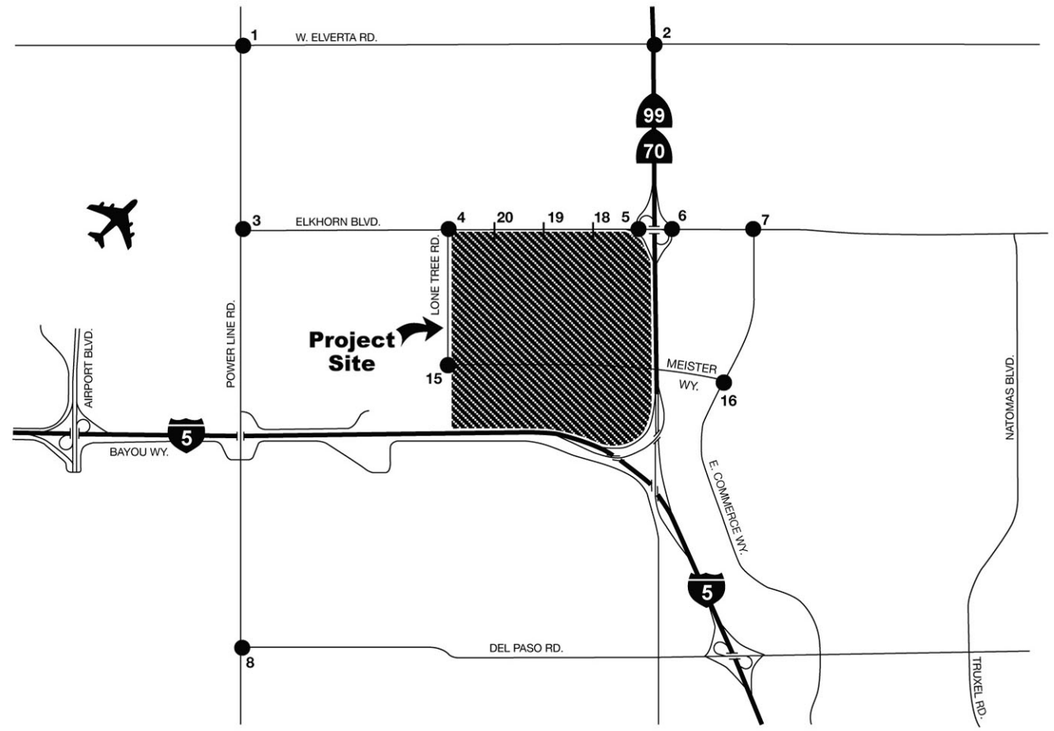
Intersection #18
Elkhorn Blvd./Project Street 1



Intersection #19
Elkhorn Blvd./Project Street 2

Intersection #20
Elkhorn Blvd./Project Street 3





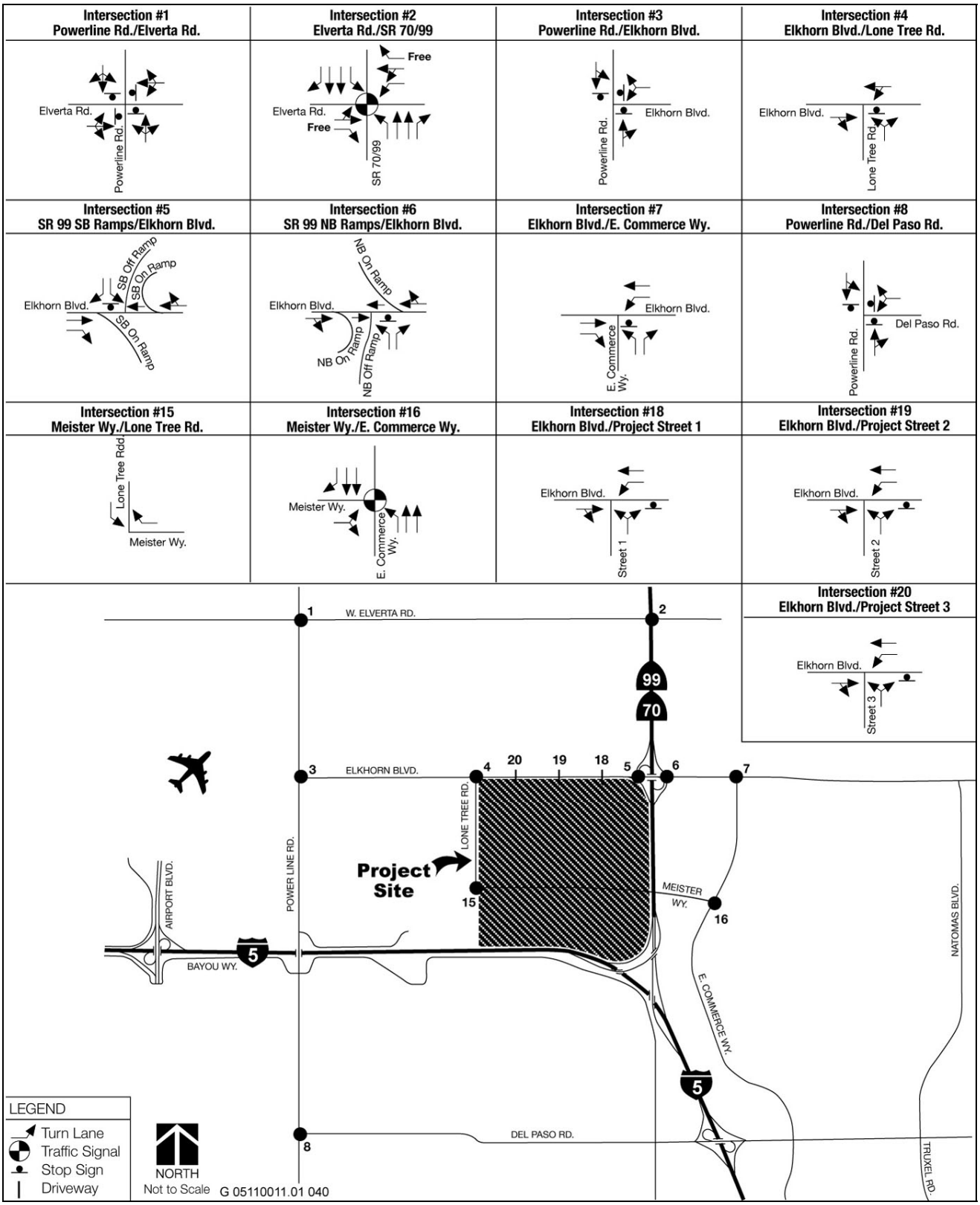
NORTH
Not to Scale

LEGEND
- ● Study Intersection
- XX AM Peak Hour Volume
- (XX) PM Peak Hour Volume
- | Driveway

G 05110011.01 039

Source: TJKM 2005

Baseline Plus Project Peak-Hour Turning Movement Volumes (with the Meister Way – SR 70/99 Overpass) **Exhibit 6.1-16**



Source: TJKM 2005

Baseline Plus Project Lane Configurations (with the Meister Way – SR 70/99 Overpass) Exhibit 6.1-17

Table 6.1-30 compares the peak-hour intersection operating conditions for Baseline No Project conditions with that of Baseline plus Project conditions with the Meister Way – SR 70/99 overpass.

Construction of this improvement would primarily occur on the project site; therefore, site specific environmental impacts have been evaluated throughout this DEIR. However, this improvement would also extend east of SR 70/99 to East Commerce Way. Areas east of the project site are developed or are currently developing with urban land uses. The City has recently purchased the right-of-way for this improvement. Impacts associated with construction of this improvement would generally consist of construction-related air, noise, and traffic impacts and operational traffic impacts (e.g., re-distribution of local traffic trips). Construction-related impacts would be similar to the project's construction-related impacts and no new significant impacts would occur. Mitigation recommended for the project would also substantially reduce construction-related impacts associated with this measure. Operational impacts associated with this improvement have been evaluated and are described in Table 6.1-30 and throughout this EIR (i.e., air, noise, and biological resources). Because land for this improvement has been secured by the City, a financing mechanism would be established to ensure the funding (see Mitigation Measure 6.1-1a), and construction of this improvement, and no new significant environmental impacts not already identified or evaluated in this DEIR would occur, this improvement would be considered feasible.

Although this improvement would substantially reduce the project's impacts to study area intersections, some intersections would continue to operate unacceptably and additional mitigation would be required to improve these intersections to an acceptable operation level. Further, other traffic improvements are necessary to ensure the safe operation of the local roadway network. As described in Table 6.1-30, with implementation of this recommended measure, the intersection of SR 70/99 southbound ramps and Elkhorn Boulevard would improve to LOS D during the p.m. peak hour and the intersection of Elkhorn Boulevard and Project Street 2 would improve to LOS D during the a.m. peak hour. The following mitigation measures would further reduce impacts to remaining study area intersections.

Mitigation Measure 6.1-1c: Elverta Road and SR 70/99 (City of Sacramento, Caltrans, County)

Before issuance of the first occupancy permit, the project applicant shall restripe the westbound Elverta Road approach to provide two left turn lanes, and a shared through-right turn lane (currently, a left turn lane, a shared left turn-through lane, and a right turn lane). Available right-of way currently exists at this intersection to implement this mitigation measure. Construction outside existing right-of-way would not be required. Based on "windshield surveys" of the project area, the site proposed for this improvement is substantially similar to the project site. Construction-related impacts would be similar to the project's construction-related impacts and no new significant impacts would occur. Mitigation recommended for the project would also substantially reduce construction-related impacts associated with this measure. With implementation of this mitigation measure, operation of this intersection would improve to LOS D, which is acceptable based on Caltrans and County standards. Therefore, impacts to this intersection would be reduced to a ***less-than-significant*** level.

Mitigation Measure 6.1-1d: Elkhorn Boulevard and Lone Tree Road (City of Sacramento and County)

On or before 50% buildout of the project based on total project trip generation, the project applicant shall construct a traffic signal at the Elkhorn Boulevard and Lone Tree Road intersection. Existing right-of-way is available to accommodate this improvement. Based on "windshield surveys" of the project area, the site proposed for this improvement is substantially similar to the project site. Construction-related impacts would be similar to the project's construction-related impacts and no new significant impacts would occur. Mitigation recommended for the project would also substantially reduce construction-related impacts associated with this measure. With implementation of this mitigation measure, the operation of this intersection would improve to LOS B under Baseline plus Project conditions, which is acceptable based on City and County standards. Therefore, impacts to this intersection would be reduced to a ***less-than-significant*** level.

Mitigation Measure 6.1-1e: SR 70/99 Northbound Ramps and Elkhorn Boulevard (City of Sacramento and Caltrans)

Prior to project approval, the project applicant in coordination with the City, prepare a City Council-approved Finance Plan to fund necessary traffic mitigation. This funding mechanism shall be in conformance with the Draft Greenbriar Finance Plan presented in Appendix C. This funding mechanism shall ensure that the project applicant will pay their fair-share costs (determined in consultation with the City) toward the installation of a traffic signal at the SR 70/99 Northbound Ramps and Elkhorn Boulevard intersection and shall install the traffic signal before recordation of the first map. The Draft Greenbriar Finance Plan identifies 100% of the funding needed to construct this improvement including funds collected through the Metro Air Park Finance Plan and the North Natomas Public Facilities Finance Plan. Existing right-of-way is available to accommodate this improvement. Based on "windshield surveys" of the project area, the site proposed for this improvement is substantially similar to the project site. Construction-related impacts would be similar to the project's construction-related impacts and no new significant impacts would occur. Mitigation recommended for the project would also substantially reduce construction-related impacts associated with this measure. With implementation of this mitigation measure, the operation of this intersection would improve to LOS D under Baseline plus Project conditions, which is acceptable based on City and County standards. Therefore, impacts to this intersection would be reduced to a ***less-than-significant*** level.

Mitigation Measure 6.1-1f: Elkhorn Boulevard and E. Commerce Way (City of Sacramento)

Before project approval, the project applicant shall in coordination with the City, prepare a City Council-approved Finance Plan to fund necessary traffic mitigation. This funding mechanism shall be in conformance with the Draft Greenbriar Finance Plan presented in Appendix C. This funding mechanism shall ensure that the project applicant will pay their fair-share costs (determined in consultation with the City) toward the installation of a traffic signal at the Elkhorn Boulevard/East Commerce Way intersection. The Draft Greenbriar Finance Plan identifies 100% of the funding needed to implement this improvement. Existing right-of-way is available to accommodate this improvement. Based on "windshield surveys" of the project area, the site proposed for this improvement is substantially similar to the project site. Construction-related impacts would be similar to the project's construction-related impacts and no new significant impacts would occur. Mitigation recommended for the project would also substantially reduce construction-related impacts associated with this measure. With implementation of this mitigation measure, the operation of this intersection would improve to LOS C under Baseline plus Project conditions, which is acceptable based on City standards. Therefore, impacts to this intersection would be reduced to a ***less-than-significant*** level.

Mitigation Measure 6.1-1g: Elkhorn Boulevard and Project Street 1 (City of Sacramento)

On or before the issuance of the first occupancy permit, the project applicant shall install a traffic signal at the Elkhorn Boulevard/Project Street 1 intersection. With implementation of this mitigation measure the operation of this intersection would improve to LOS A under Baseline plus Project conditions, which is acceptable based on City standards. Therefore, impacts to this intersection would be reduced to a ***less-than-significant*** level.

Mitigation Measure 6.1-1h: Elkhorn Boulevard and Project Street 2 (City of Sacramento)

On or before the issuance of the first occupancy permit, the project applicant shall install a traffic signal at the Elkhorn Boulevard/Project Street 2 intersection. With implementation of this mitigation measure the operation of this intersection would improve to LOS A under Baseline plus Project conditions, which is acceptable based on City standards. Therefore, impacts to this intersection would be reduced to a ***less-than-significant*** level.

Mitigation Measure 6.1-i: Elkhorn Boulevard and Project Street 3 (City of Sacramento)

On or before issuance of the first occupancy permit, the project applicant shall make revisions to the project plans so that this intersection will be restricted to right in/ right out access only. With implementation of this mitigation measure the operation of this intersection would improve to LOS B under Baseline plus Project conditions, which is acceptable based on City standards. Therefore, impacts to this intersection would be reduced to a ***less-than-significant*** level.

Significance After Mitigation

With implementation of the above mitigation measures, all of the project's study intersections would operate at acceptable levels and these impacts would be reduced to a ***less-than-significant*** level.

IMPACT 6.1-2

Impacts to Study Area Roadway Segments. *The proposed project would increase traffic volumes on study area roadway segments (i.e., Elkhorn Boulevard west of SR 70/99 Interchange and Meister Way west of SR 70/99) and would cause these segments to degrade from an acceptable operating condition (i.e., LOS A) to an unacceptable operating condition (i.e., LOS F). Because study area roadway segments would operate unacceptably as a result of the project, this would be a* ***significant*** *impact.*

Traffic associated with proposed land uses would increase traffic volumes on local roadway segments. Table 6.1-31 summarizes the roadway segment operating conditions for Baseline No Project conditions and Baseline plus Project conditions.

Implementation of the project would result in the project's study roadway segments degrading from LOS A to LOS F, which is unacceptable based on City operating standards. Therefore, this would be a ***significant*** impact.

Table 6.1-31
Baseline Roadway Segment Operating Conditions

Roadway Segment	Lanes	Level of Service (V/C)	
		No Project	Plus Project
Elkhorn Boulevard west of SR 70/99 Interchange	2	A (0.12)	**F (1.23)**
Lone Tree Road south of Elkhorn Boulevard	2	**No Traffic on Lone Tree Road**	**F (1.41)**
Metro Air Parkway north of I-5 Interchange	Future Roadway*		
Meister Way west of SR 70/99	**No Meister Way Overpass under Baseline Conditions**		

Notes: LOS = level of service; V/C: Volume/ Capacity ratio
*Evaluated under cumulative plus project conditions
Bold = Unacceptable Ramp Operation
Reference: Highway Capacity Manual 2000 Edition.

Mitigation Measure 6.1-2a: Meister Way Overpass (City of Sacramento)

The project applicant shall implement Mitigation Measure 6.1-1b above (i.e., construct Meister Way overpass). Table 6.1-32 summarizes the roadway segment operation conditions for Baseline No Project conditions and Baseline plus Project conditions with the Meister way overpass. As shown in the table, even with implementation of the Meister Way overpass, two of the project's study roadway segments (i.e., Elkhorn Boulevard west of SR 70/99 Interchange and Meister Way west of SR 70/99) would continue to operate unacceptably under Baseline plus Project conditions. Therefore, additional measures are required for these intersections.

Table 6.1-32
Baseline Roadway Segment Operating Conditions

Roadway Segment	Lanes	Level of Service (V/C)	
		No Project	Plus Project (with Meister Way – SR 70/99 Overpass)
Elkhorn Boulevard west of SR 70/99 Interchange	2	A (0.12)	**D (0.87)**
With Mitigation	4		A (0.44)
Lone Tree Road south of Elkhorn Boulevard	2	No Traffic on Lone Tree Road	C (0.74)
Metro Air Parkway north of I-5 Interchange	Future Roadway*		
Meister Way west of SR 70/99	2	No Meister Way Overpass	**D (0.82)**
With Mitigation	4		A (0.41)

Notes: LOS = level or service; V/C = Volume/Capacity ratio
* Evaluated under cumulative project conditions
Bold = Unacceptable Ramp Operation
Reference: Highway Capacity Manual 2000 Edition.

Mitigation Measure 6.1-2b: Elkhorn Boulevard west of SR 70/99 Interchange (City of Sacramento and County)

On or before 60% total buildout of the project based on trip generation, the project applicant shall widen Elkhorn Boulevard west of SR 70/99 interchange to Lone Tree road to provide two travel lanes in each direction. Right-of-way for the recommended widening is currently available and has been secured by the City. Based on "windshield surveys" of the project area, the site proposed for this improvement is substantially similar to the project site. Construction-related impacts would be similar to the project's construction-related impacts and no new significant impacts would occur. Mitigation recommended for the project would also substantially reduce construction-related impacts associated with this measure. With the implementation of this mitigation measure, this roadway segment would improve to LOS A under Baseline plus Project conditions, which is acceptable based on City standards. Therefore, impacts to this intersection would be reduced to a ***less-than-significant*** level.

Mitigation Measure 6.1-2c: Meister Way west of SR 70/99 (City of Sacramento)

On or before 66% total buildout of the project based on trip generation, the project applicant shall widen Meister Way west of SR 70/99 to provide two travel lanes in each direction from the first street intersection of SR70/99 west to Lone Tree Road. Right-of-way for the recommended widening is currently available on-site. Based on "windshield surveys" of the project area, the site proposed for this improvement is substantially similar to the project site. Construction-related impacts would be similar to the project's construction-related impacts and no new significant impacts would occur. Mitigation recommended for the project would also substantially reduce construction-related impacts associated with this measure. With implementation of this mitigation measure, this roadway segment would improve to LOS D under Baseline plus Project conditions, which is acceptable based on City standards. Therefore, impacts to this intersection would be reduced to a ***less-than-significant*** level.

Significance After Mitigation

With implementation of the above mitigation measures, all of the project's study roadway segments would operate at acceptable levels and these impacts would be reduced to a ***less-than-significant*** level.

IMPACT 6.1-3

Impacts to the Freeway Ramps. *The proposed project would increase traffic volumes on the freeway system and would cause three study freeway ramps (i.e., SR 70/99 NB/Elkhorn Boulevard off-ramp, SR 70/99 SB/I-5 SB off-ramp, and I-5 NB/SR 70/99 NB off-ramp) to operate unacceptably under Baseline plus Project conditions. This would be a* ***significant*** *impact.*

With implementation of the project, traffic volumes on the local freeway system would increase. Table 6.1-33 compares the peak-hour operating conditions for the study ramps under Baseline No Project conditions with that of Baseline plus Project conditions. As shown in Table 6.1-33, all the study ramps are expected to operate acceptably under Baseline plus Project and Baseline plus Project conditions, except for the following ramps:

- SR 70/99 Northbound to Elkhorn Boulevard off-ramp
- SR 70/99 Southbound to I-5 Southbound on-ramp
- I-5 Northbound to SR 70/99 Northbound off-ramp

With implementation of the project, the above study freeway ramps would degrade to LOS F, which is unacceptable based on Caltrans standards. Therefore, this would be a ***significant*** impact.

Mitigation Measure 6.1-3a: Meister Way Overpass (City of Sacramento)

The project applicant shall implement Mitigation Measure 6.1-1b above (i.e., construct the Meister Way overpass). Table 6.1-34 summarizes the peak-hour operating conditions for the study ramps under Baseline No Project conditions and Baseline plus Project conditions with the Meister Way overpass. As shown in the table, even with implementation of the Meister Way overpass, all three study freeway ramps (i.e., SR 70/99 NB/Elkhorn Boulevard off-ramp, SR 70/99 SB/I-5 SB off-ramp, and I-5 NB/SR 70/99 NB off-ramp) would continue to operate unacceptably under Baseline plus Project conditions. Therefore, additional measures are required for these ramps.

Mitigation Measure 6.1-3b: SR 70/99 Northbound to Elkhorn Boulevard off-ramp (City of Sacramento and Caltrans)

a. The project applicant shall implement mitigation measure 6.1-1e, which would require the installation of a traffic signal at the SR 70/99 Northbound Ramps and Elkhorn Boulevard intersection.

b. Before project approval, the project applicant shall in coordination with the City, prepare a City Council-approved Finance Plan to fund necessary traffic mitigation. This funding mechanism shall be in conformance with the Draft Greenbriar Finance Plan presented in Appendix C. This funding mechanism shall ensure that the project applicant will pay their fair-share costs (determined in consultation with the City and Caltrans) toward the widening the off-ramp from one lane to two lanes. The Draft Greenbriar Finance Plan identifies 100% of funding needed to construct this improvement. This improvement is included in the Metro Air Park Financing Plan (MAPFP) and the North Natomas Public Facilities Finance Plan. Existing right-of-way is available to accommodate this improvement. Based on "windshield surveys" of the project area, the site proposed for this improvement is substantially similar to the project site. Construction-related impacts would be similar to the project's construction-related impacts and no new significant impacts would occur.

Mitigation recommended for the project would also substantially reduce construction-related impacts associated with this measure. With implementation of this mitigation measure, the operation of this freeway ramp would improve to LOS C under Baseline plus Project conditions, which is acceptable based on Caltrans standards. Therefore, impacts to this ramp would be reduced to a ***less-than-significant*** level.

Table 6.1-33
Baseline Peak-Hour Freeway Ramp Operating Conditions

Ramp	Level of Service											
	No Project						Plus Project					
	A.M. Peak Hour			P.M. Peak Hour			A.M. Peak Hour			P.M. Peak Hour		
	Volume (vph)	LOS	Queue Length (feet) [X: Y, Z]1	Volume (vph)	LOS	Queue Length (feet) [X: Y, Z]1	Volume (vph)	LOS	Queue Length (feet) [X: Y, Z]1	Volume (vph)	LOS	Queue Length (feet) [X: Y, Z]1
Elkhorn Boulevard to SR 70/99 northbound (Loop on-ramp)	10	B	-	5	B	-	147	B	-	220	B	-
Elkhorn Boulevard to SR 70/99 northbound (Slip on-ramp)	129	B	-	143	B	-	129	B	-	146	B	-
SR 70/99 northbound to Elkhorn Boulevard (off-ramp)	518	C	[NER: 72, 1,270]	1290	C	[NER: 1869, 1,270]	995	C	[NEL: >1270, 1,270]	**2,070**	**F**	**[NEL: > 1270, 1,270]**
SR 70/99 southbound to Elkhorn Boulevard (off-ramp)	152	C	[SBL: 13, 1,250]	114	C	[SBL: 10, 1,250]	330	C	[SBL: 76, 1,250]	300	C	[SBR: 137, 1,250]
Elkhorn Boulevard to SR 70/99 southbound (loop on-ramp)	993	B	-	641	B	-	993	B	-	641	B	-
Elkhorn Boulevard to SR 70/99 southbound (slip on-ramp)	30	B	-	19	B	-	889	B	-	704	B	-
SR 70/99 southbound to I-5 northbound (off-ramp)	935	C	-	126	C	-	982	C	-	174	C	-
I-5 southbound to SR 70/99 northbound (off-ramp)	111	C	-	1,303	C	-	141	C	-	1,335	C	-
SR 70/99 southbound to I-5 southbound (on-ramp)	3,374	D	-	1,871	B	-	**4,186**	**F**	-	2,508	C	-
I-5 northbound to SR 70/99 northbound (off-ramp)	1,608	C	-	**3,347**	**E**	-	2,055	C	-	**4,095**	**F**	-

Notes: LOS – level of service for ramp freeway junction areas of influence
Bold – Unacceptable Ramp Operation
Reference – Highway Capacity Manual 2000 Edition
vph – Vehicles per hour
[1] X:Y,Z = Most critical ramp approach: 95th Percentile Queue Length, Available Segment Length/Storage
- Slip ramps. Requires arrival and departure data to estimate queuing on-ramps. However, the ramps are long enough to contain queues. As shown in the table, traffic volumes are low on the Slip ramps.

Table 6.1-34
Baseline Peak-Hour Freeway Ramp Operating Conditions

Ramp	Level of Service											
	No Project						Plus Project ("with" the Meister Way – SR 70/99 overpass)					
	A.M. Peak Hour			P.M. Peak Hour			A.M. Peak Hour			P.M. Peak Hour		
	Volume (vph)	LOS	Queue Length (feet) [X: Y, Z][1]	Volume (vph)	LOS	Queue Length (feet) [X: Y, Z][1]	Volume (vph)	LOS	Queue Length (feet) [X: Y, Z][1]	Volume (vph)	LOS	Queue Length (feet) [X: Y, Z][1]
Elkhorn Boulevard to SR 70/99 northbound (Loop on-ramp)	10	B	-	5	B	-	126	B	-	177	B	-
Elkhorn Boulevard to SR 70/99 northbound (Slip on-ramp)	129	B	-	143	B	-	161	B	-	215	B	-
SR 70/99 northbound to Elkhorn Boulevard (off-ramp)	518	C	[NBR: 72, 1,270]	1,290	C	[NBR: 1,869, 1,270]	936	C	[NBL: 625, 1,270]	**2,003**	**F**	**[NBR: 2,748, 1,270]**
With Mitigation								B	[NBL: 390, 1,270]		C	[NBR: 676, 1,270]
SR 70/99 southbound to Elkhorn Boulevard (off-ramp)	152	C	[SBL: 13, 1,250]	114	C	[SBL: 10, 1,250]	294	C	[SBL: 39, 1,250]	330	C	[SBL: 85, 1,250]
Elkhorn Boulevard to SR 70/99 southbound (loop on-ramp)	993	B	-	641	B	-	1,152	C	-	748	B	-
Elkhorn Boulevard to SR 70/99 southbound (slip on-ramp)	30	B	-	19	B	-	648	B	-	551	B	-
SR 70/99 southbound to I-5 northbound (off-ramp)	935	C	-	126	C	-	1,002	C	-	187	C	-
I-5 southbound to SR 70/99 northbound (off-ramp)	111	C	-	1,303	C	-	153	C	-	1,345	C	-
SR 70/99 southbound to I-5 southbound (on-ramp)	3,374	D	-	1,871	B	-	**4,084**	**E**	-	2,449	C	-
With Mitigation								C			B	
I-5 northbound to SR 70/99 northbound (off-ramp)	1,608	C	-	**3,347**	**E**	-	1,984	C	-	**4,018**	**F**	-
With Mitigation								B			**D**	

Notes: LOS – Level of Service for ramp freeway junction areas of influence
Bold – Unacceptable Ramp Operation
Reference – Highway Capacity Manual 2000 Edition
vph – Vehicles per hour
[1] X:Y,Z = Most critical ramp approach: 95th Percentile Queue Length, Available Segment Length/Storage
- Slip ramps. Requires arrival and departure data to estimate queuing on-ramps. However, the ramps are long enough to contain queues. As shown in the table, traffic volumes are low on the slip ramps.

Mitigation Measure 6.1-3c: SR 70/99 Southbound to I-5 Southbound on-ramp (City of Sacramento and Caltrans)

Widening SR 70/99 Southbound to I-5 Southbound on-ramp to provide an additional lane is required to mitigate this impact. With implementation of this mitigation measure, this freeway ramp would operate at LOS C. Caltrans District 3 Draft District System Management Plan (DSMP) includes adding a lane to the existing two-lane on-ramp for SR 70/99 southbound to I-5 southbound by the year 2010. However, to implement this mitigation measure, additional right-of-way would be required and is not currently available. Additionally, this improvement is not included in any of Caltrans' funding mechanisms. Because this mitigation measure is beyond the control of the project applicant, outside the jurisdiction of the City, and there is no established funding mechanism available for contribution, this mitigation measure is considered infeasible and the impact is considered ***significant and unavoidable***.

Mitigation Measure 6.1-3d: I-5 Northbound to SR 70/99 Northbound off-ramp (City of Sacramento and Caltrans)

Widening I-5 Northbound to SR 70/99 Northbound off-ramp to provide an additional lane is required to mitigate this impact. With implementation of this mitigation measure, this freeway ramp would operate at LOS C. Caltrans District 3 Draft DSMP does not include adding a lane to the existing two-lane on-ramp for SR 70/99 southbound to I-5 southbound by the year 2010. To implement this mitigation measure, additional right-of-way would be required and is not currently available. Additionally, this improvement is not included in any of Caltrans' funding mechanisms. Because this mitigation measure is beyond the control of the project applicant, outside the jurisdiction of the City, and there is no established funding mechanism available for contribution, this mitigation measure is considered infeasible and the impact is considered ***significant and unavoidable***.

Significance After Mitigation

With implementation of the above mitigation measures, the SR 70/99 Northbound to Elkhorn Boulevard off-ramp would operate at acceptable levels and this impact would be reduced to a less-than-significant level. However, this ramp is not under the jurisdiction of the City of Sacramento (i.e., subject to Caltrans jurisdiction). While the project would contribute funds that would implement measures that would fully mitigate impacts to this ramp to a less-than-significant level, it is unknown whether these measures would be implemented because they are not subject to the control of the City. As a result, for purposes of CEQA impacts to the SR 70/99 Northbound to Elkhorn Boulevard off-ramp (Impact 6.1-3b) would remain ***significant and unavoidable***. Further, no feasible mitigation is available to reduce the project's impacts to the SR 70/99 Southbound to I-5 Southbound on-ramp and the I-5 Northbound to SR 70/99 Northbound off-ramp because recommended mitigation is beyond the control of the project applicant, outside the jurisdiction of the City, and there is no established funding mechanism available for contribution to recommended improvements. Therefore, impacts to these ramps are considered ***significant and unavoidable***.

IMPACT 6.1-4

Freeway Mainline Segment Impacts. *The proposed project would increase traffic volumes on the freeway system and would cause four study freeway mainline segments (i.e., I-5 north of Del Paso Road, I-5 north of I-5/I-80 interchanges between I-80 and Arena Boulevard, SR 70-99 between Elverta Road and Elkhorn Boulevard, and SR 70/99 between Elkhorn Boulevard and I-5/SR 70/99 interchange) to operate unacceptably under Baseline plus Project Conditions. This would be a* ***significant*** *impact.*

With implementation of the project, traffic volumes on the local freeway system would increase. Table 6.1-35 compares the peak-hour operating conditions for the freeway mainline segments under Baseline No Project conditions with that of Baseline plus Project conditions. As shown in Table 6.1-35, all the study ramps are expected to operate acceptably under Baseline plus Project and Baseline plus Project conditions, except for the following mainline segments:

- Interstate 5 – North of Del Paso Road
- Interstate 5 – North of I-5/I-80 Interchange – between I-80 and Arena Boulevard Exit

Table 6.1-35
Baseline Peak-Hour Freeway Mainline Operating Conditions

Freeway Segment	Direction	Level of Service											
		No Project						Plus Project					
		A.M. Peak Hour			P.M. Peak Hour			A.M. Peak Hour			P.M. Peak Hour		
		Volume (vph)	Density pc/m/l)	LOS	Volume (vph)	Density (pc/m/l)	LOS	Volume (vph)	Density (pc/m/l)	LOS	Volume (vph)	Density (pc/m/l)	LOS
I-5 East of Power Line Road	WB/NB	2,984	27.9	D	3,114	29.4	D	3,031	28.4	D	3,162	30	D
	EB/SB	2,692	24.8	C	3,354	32.7	D	2,722	25.1	C	3,386	33.2	D
I-5 North of Del Paso Road	NB	3,657	22.4	C	6,335	**> 45**	**F**	4,104	25.3	C	**7,083**	**> 45**	**F**
	SB	5,954	**> 45**	**F**	3,922	24.1	C	**6,766**	**> 45**	**F**	4,559	28.5	D
I-5 North of I-5/I-80 Interchange between I-80 and Arena Boulevard Exit	NB	4,465	27.8	D	7,639	**> 45**	**F**	4,851	31	D	**8,459**	**> 45**	**F**
	SB	6,894	**> 45**	**F**	4,232	26.1	D	**7,722**	**> 45**	**F**	4,926	31.7	D
SR 70/99 between Elverta Road and Elkhorn Boulevard	NB	1,340	12.3	B	3,509	**35.3**	**E**	1,477	13.6	B	3,727	**39.7**	**E**
	SB	3,437	34	D	1,451	13.4	B	3,615	**37.3**	**E**	1,637	15.1	B
SR 70/99 between Elkhorn Boulevard and I-5/SR 70/99 Interchange	NB	1,719	15.8	B	4,650	**> 45**	**F**	2,196	20.2	C	**5,430**	**> 45**	**F**
	SB	4,308	**> 45**	**F**	1,997	18.4	C	**5,167**	**> 45**	**F**	2,682	24.7	C

Notes: vph – vehicles per hour; pc/m/l - passenger cars per mile per lane; LOS = Level of Service;
Bold = Unacceptable Freeway Segment Operation.

- State Route 70/99 – between Elverta Road and Elkhorn Boulevard.
- State Route 70/99 – between Elkhorn Boulevard and I-5/SR 70/99 Interchange.

Although the above segments would operate unacceptably (i.e., LOS F) without the project, the project would add additional traffic to a mainline segment that is currently operating unacceptably under Baseline No Project conditions, which is unacceptable based on Caltrans standards. Therefore, this would be a ***significant*** impact.

Mitigation Measure 6.1-4a: Meister Way Overpass (City of Sacramento)

The project applicant shall implement Mitigation Measure 6.1-1b above (i.e., construct the Meister Way overpass). Table 6.1-36 summarizes the peak-hour operating conditions for the study mainline segments under Baseline No Project conditions and Baseline plus Project conditions with the Meister way overpass. As shown in the table, even with implementation of the Meister Way overpass, all four study mainline segments (i.e., I-5 north of Del Paso Road, I-5 north of I-5/I-80 interchanges between I-80 and Arena Boulevard, SR 70/99 between Elverta Road and Elkhorn Boulevard, and SR 70/99 between Elkhorn Boulevard and I-5/SR 70/99 interchange) would continue to operate unacceptably under Baseline plus Project conditions. Therefore, additional measures are required for these mainline segments.

Mitigation Measure 6.1-4b: I-5 North of Del Paso Road (City of Sacramento and Caltrans)

Because this mainline segment of I-5 currently operates unacceptably, the only mitigation that could improve the operating conditions of this segment during peak conditions would be the widening of this segment of I-5 mainline to eight lanes (currently six lanes). While widening of I-5 would improve the operating conditions of this mainline segment to acceptable conditions, Caltrans currently has no plans to expand this segment of I-5 beyond its current capacity nor are any funding mechanisms established to collect monies to fund improvements such as this. Further, because of the developing nature of properties to the east and west of I-5, additional right-of-way is not available for the expansion of this freeway segment. Because no feasible mitigation is available to reduce the project's impacts to this mainline segment, this impact would remain ***significant and unavoidable***.

Mitigation Measure 6.1-4c: I-5 north of I-5/I-80 Interchange between I-80 and Arena Boulevard Exit (City of Sacramento and Caltrans)

Because this mainline segment of I-5 currently operates unacceptably, the only mitigation that could improve the operating conditions of this segment during peak conditions would be the widening of this segment of I-5 mainline to eight lanes (currently six lanes). While widening of I-5 would improve the operating conditions of this mainline segment to acceptable conditions, Caltrans currently has no plans to expand this segment of I-5 beyond its current capacity nor are any funding mechanisms established to collect monies to fund improvements such as this. Further, because of the developing nature of properties to the east and west of I-5, additional right-of-way is not available for the expansion of this freeway segment. Because no feasible mitigation is available to reduce the project's impacts to this mainline segment, this impact would remain ***significant and unavoidable***.

Mitigation Measure 6.1-4d: SR 70/99 Southbound between Elverta Road and Elkhorn Boulevard (City of Sacramento)

Because this mainline segment of SR 70/99 currently operates unacceptably, widening this segment of SR 70/99 mainline to 3 lanes (currently 2 lanes) between Elkhorn Boulevard and Elverta Road would improve the operating conditions of this segment during peak conditions to an acceptable LOS. Widening of the segment is not included in Caltrans' DSMP. While widening of SR 70/99 would improve the operating conditions of this mainline segment to acceptable conditions, Caltrans currently has no plans to expand this segment of SR 70/99 beyond its current capacity nor are any funding mechanisms established to fund improvements such as this. Because no feasible mitigation is available to reduce the project's impacts to this mainline segment, this impact would remain ***significant and unavoidable***.

Table 6.1-36
Baseline Peak-Hour Freeway Mainline Operating Conditions

Freeway Segment	Direction	Level of Service											
		No Project						Plus Project ("with" the Meister Way – SR 70/99 overpass)					
		A.M. Peak Hour			P.M. Peak Hour			A.M. Peak Hour			P.M. Peak Hour		
		Volume (vph)	Density (pc/m/l)	LOS	Volume (vph)	Density (pc/m/l)	LOS	Volume (vph)	Density (pc/m/l)	LOS	Volume (vph)	Density (pc/m/l)	LOS
I-5 East of Power Line Road	WB/NB	2,984	27.9	D	3,114	29.4	D	3,051	28.7	D	3,175	30.2	D
	EB/SB	2,692	24.8	C	3,354	32.7	D	2,734	25.3	C	3,396	33.4	C
I-5 North of Del Paso Road	NB	3,657	22.4	C	**6,335**	**> 45**	**F**	4,033	24.8	C	**7,006**	**> 45**	**F**
	With Mitigation									B			**E**
	SB	**5,954**	**> 45**	**F**	3,922	24.1	C	**6,664**	**> 45**	**F**	4,500	28.1	D
	With Mitigation									**E**			C
I-5 North of I-5/I-80 Interchange between I-80 and Arena Boulevard Exit	NB	4,465	27.8	D	**7,639**	**> 45**	**F**	4,839	30.9	D	**8,595**	**> 45**	**F**
	With Mitigation									B			**E**
	SB	**6,894**	**> 45**	**F**	4,232	26.1	D	**7,679**	**> 45**	**F**	4,909	31.5	D
	With Mitigation									**E**			B
SR 70/99 between Elverta Road and Elkhorn Boulevard	NB	1,340	12.3	B	**3,509**	**35.3**	**E**	1,488	13.7	B	3,753	**40.3**	**E**
	With Mitigation									B			D
	SB	3,437	34	D	1,451	13.4	B	3,579	**36.6**	**E**	1,667	15.3	B
	With Mitigation									D			B
SR 70/99 between Elkhorn Boulevard and I-5/SR 70/99 Interchange	NB	1,719	15.8	B	**4,650**	**> 45**	**F**	2,137	19.7	C	**5,363**	**> 45**	**F**
	With Mitigation									B			**E**
	SB	**4,308**	**> 45**	**F**	1,997	18.4	C	**5,085**	**> 45**	**F**	2,636	24.3	C
	With Mitigation									**E**			B

Notes: vph - vehicles per hour; pc/m/l - passenger cars per mile per lane; LOS = Level of Service;
Bold = Unacceptable Freeway Segment Operation**.**

Mitigation Measure 6.1-4e: SR 70/99 between Elkhorn Boulevard and I-5/SR 70/99 Interchange (City of Sacramento)

Because this mainline segment of SR 70/99 currently operates unacceptably, the only mitigation that could improve the operating conditions of this segment during peak conditions would be the widening this segment of SR 70/99 mainline to six lanes (currently 4 lanes) between Elkhorn Boulevard and Elverta Road. While widening of SR 70/99 would improve the operating conditions of this mainline segment to acceptable conditions, Caltrans currently has no plans to expand this segment of SR 70/99 beyond its current capacity nor are any funding mechanisms established to collect monies to fund improvements such as this. Because no feasible mitigation is available to reduce the project's impacts to this mainline segment, this impact would remain ***significant and unavoidable***.

Significance After Mitigation

Because no feasible mitigation is available to reduce the project's impacts to study area freeway segments, impacts to the I-5 north of Del Paso Road, I-5 north of I-5/I-80 Interchange between I-80 and Arena Boulevard Exit, SR 70/99 Southbound between Elverta Road and Elkhorn Boulevard, and SR 70/99 between Elkhorn Boulevard and I-5/SR 70/99 Interchange freeway segments would remain ***significant and unavoidable***.

Cumulative Impacts and Mitigation Measures (Cumulative plus Project)

IMPACT 6.1-5

Cumulative Traffic Impacts to Study Area Intersections. *Traffic volumes associated with the project in combination with other reasonably foreseeable cumulative projects would cause several study area intersections to operate unacceptably and exceed City County, and Caltrans thresholds of significance for intersection operations. This would be a* ***significant*** *cumulative impact and the project's contribution to this impact would be cumulatively considerable.*

The project in combination with other approved and reasonably foreseeable projects would result in an increase in local traffic volumes. Table 6.1-37 summarizes the peak-hour operating conditions for the study intersections under Cumulative Conditions (with and without the project). Because the Meister Way overpass was proposed as part of the Metro Airpark project, the overpass was assumed to be constructed by 2025 without project; therefore, the Meister Way overpass was assumed in the Cumulative No Project scenario.

Fourteen of the study intersections would operate unacceptably under Cumulative plus Project conditions as described below:

- *SR 70/99 Southbound Ramps and Elverta Road:* This intersection would continue to operate at LOS F during the a.m. peak hour. However, the project would not cause the average delay of this intersection to increase by more than 5 seconds.

- *SR 70/99 Northbound Ramps and Elverta Road*: This intersection would continue to operate at LOS F during the a.m. peak hour. However, the project would not cause the average delay of this intersection to increase by more than 5 seconds.

- *Elkhorn Boulevard and Lone Tree Road:* This intersection would continue to operate at LOS D during the a.m. peak hour and LOS F during the p.m. peak hour. The project would cause the average delay at this intersection to increase by more than 5 seconds during the a.m. and p.m. peak hour.

Table 6.1-37
Cumulative Peak-Hour Intersection Operating Conditions

ID	Intersections	Traffic Control	Average Delay or V/C* (Level of Service)			
			No Project		Plus Project	
			AM	PM	AM	PM
1	Powerline Road and Elverta Road (County)	Signal	0.70 (B)	0.82 (D)	0.71 (C)	0.84 (D)
2a	SR 70/99 SB Ramps and Elverta Road	Signal	**140.6 (F)**	7.7 (A)	**141.3 (F)**	8.1 (A)
2b	SR 70/99 NB Ramps and Elverta Road	Signal	**120.1 (F)**	12.4 (B)	**120.1 (F)**	13.1 (B)
3	Powerline Road and Elkhorn Boulevard (County)	Signal	0.75 (C)	0.79 (C)	0.76(C)	0.79 (C)
4	Elkhorn Boulevard and Lone Tree Road	Signal	37.4 (D)	**219 (F)**	**48.4 (D)**	**226.2 (F)**
	With Mitigation				23.4 (C)	**221.8 (F)**
5	SR 70/99 SB Ramps and Elkhorn Boulevard	Signal	44.5 (D)	10.8 (B)	**78.0 (E)**	10.9 (B)
	With Mitigation				**49.9 (D)**	10.8 (B)
6	SR 70/99 NB Ramps and Elkhorn Boulevard	Signal	**96.4 (F)**	13.8 (B)	**125 (F)**	16.3 (B)
	With Mitigation				**55.2 (E)**	16.1 (B)
7	Elkhorn Boulevard and E. Commerce Way	Signal	17.4 (B)	16.2 (B)	20.2 (C)	33.4 (C)
8	Powerline Road and Del Paso Road (County)	Signal	0.89 (D)	0.51 (A)	0.90 (D)	0.54 (A)
9	I-5 NB Ramps and Metro Air Parkway	Signal	**256.6 (F)**	**92.1 (F)**	**256.6 (F)**	**102.9 (F)**
	With Mitigation				**179.9 (F)**	**77.4 (E)**
10	I-5 SB Ramps and Metro Air Parkway	Signal	31.2 (C)	7.8 (A)	34.5 (C)	8.0 (A)
11	Elverta Road and Lone Tree Road (County)	Signal	**0.97 (E)**	**1.68 (F)**	**0.97 (E)**	**1.69 (F)**
12	Elverta Road and Metro Air Parkway (County)	Signal	0.71 (C)	0.65 (B)	0.71 (C)	0.66 (B)
13	Elkhorn Boulevard and Metro Air Parkway (County)	Signal	0.85 (D)	0.85 (D)	0.88 (D)	0.87 (D)
14	Meister Way and Metro Air Parkway (County)	Signal	0.81 (D)	**1.32 (F)**	0.89 (D)	**1.45 (F)**
	With Mitigation				0.87 (D)	**1.13 (F)**
15	Meister Way And Lone Tree Road	Signal	22.4 (C)	30.4 (C)	**49.4 (D)**	**116.5 (F)**
	With Mitigation				26.3 (C)	28.8 (C)
16	Meister Way And E. Commerce Way	Signal	20.6 (C)	13.3 (B)	**53.5 (D)**	**109.3 (F)**
	With Mitigation				16.1 (B)	25.8 (C)
17	Bayou Road and Metro Air Parkway	One way Stop	**8,993 (F)**	**9,795 (F)**	**8,994 (F)**	**9,795 (F)**
18	Elkhorn Boulevard and Project Street 1	Signal	No Project Traffic		**40.3 (D)**	**99.6 (F)**
	With Mitigation				11.5 (B)	23.6 (C)
19	Elkhorn Boulevard and project Street 2	Signal	No Project Traffic		**41.7 (D)**	**95.5 (F)**
	With Mitigation				11.3 (B)	21.1 (C)
20	Elkhorn Boulevard and Project Street 3	One Way Stop (Right In/ Right Out Only)	No Project Traffic		9.5 (A)	18.4 (B)

Notes: * Seconds per Vehicle and volume/capacity for County intersections; **Bold** = Unacceptable Intersection Operation

- *SR 70/99 Southbound Ramps and Elkhorn Boulevard*: This intersection would degrade from LOS D to LOS E under cumulative plus project conditions.

- *SR 70/99 Northbound Ramps and Elkhorn Boulevard*: This intersection would continue to operate at LOS F during the a.m. peak hour. The project would cause the average delay at this intersection to increase by more than 5 seconds.

- *Metro Air Parkway and I-5 Northbound Ramps*: This intersection would continue to operate at LOS F during the a.m. and p.m. peak hours. The project would cause the average delay of this intersection to increase by more than 5 seconds in the pm peak hour.

- *Elverta Road and Lone Tree Road*: This intersection would continue to operate at LOS E during the a.m. peak hour and LOS F during the p.m. peak hour. However, the project would not cause the average delay at this intersection to increase the volume to capacity ratio by more than 5 seconds during the a.m. and p.m. peak hours.

- *Meister Way and Metro Air Parkway*: This intersection would continue to operate at LOS F during the p.m. peak hour. The project would cause the volume to capacity at this intersection to increase by more than 0.05.

- *Meister Way and Lone Tree Road*: This intersection would degrade from LOS C during the a.m. and p.m. peak hours to LOS D during the a.m. peak hour and LOS F during the p.m. peak hour.

- *Meister Way and E. Commerce Way*: This intersection would degrade from LOS C to LOS D during the a.m. peak hour and LOS B to LOS F during the p.m. peak hour.

- *Metro Air Parkway and Bayou Road:* This intersection would continue to operate at LOS F during the a.m. and p.m. peak hours. However, the project would not cause the average delay of this intersection to increase by more than 5 seconds.

- *Elkhorn Boulevard and Project Street* 1: The project would cause this intersection to operate at LOS D during the a.m. peak hour and LOS F during the p.m. peak hour.

- *Elkhorn Boulevard and Project Street 2*: The project would cause this intersection to operate at LOS D during the a.m. peak hour and LOS F during the p.m. peak hour.

- *Elkhorn Boulevard and Project Street 3:* The project would cause this intersection to operate at LOS D during the a.m. peak hour and LOS F during the p.m. peak hour.

Because the project in combination with cumulative projects would either cause intersections that operate unacceptably under Cumulative No Project conditions to exceed the City or County applicable average delay thresholds under Cumulative plus Project conditions or would cause intersections that would operate acceptably under Cumulative No Project conditions to degrade to an unacceptable level under Cumulative plus Project conditions, the project would result in ***significant*** cumulative impacts to study area intersections.

Mitigation Measure 6.1-5a: Elkhorn Boulevard and Lone Tree Road (City of Sacramento and County)

The project applicant shall provide an expanded intersection with a right turn pocket length of 200 feet for vehicles turning right onto northbound Lone Tree Road from the westbound Elkhorn Boulevard approach. With implementation of this mitigation measure, the project would increase the average delay at this intersection by only 2.8 seconds, which is below City standards (i.e., 5 seconds). Construction associated with this mitigation

measure would require the acquisition of additional right-of-way. Based on "windshield surveys" of the project area, the site proposed for this improvement is substantially similar to the project site and therefore no new environmental impacts would occur. The applicant in consultation with the City shall coordinate with County to secure additional right-of-way for this improvement. However, because this intersection is located within the County and is not subject to the City's jurisdiction, implementation of this measure can not be guaranteed. Therefore, this impact would be considered ***significant and unavoidable***.

Mitigation Measure 6.1-5b: SR 70/99 Southbound Ramps and Elkhorn Boulevard (City of Sacramento and Caltrans)

Before project approval, the project applicant shall in coordination with the City, prepare a City Council-approved Finance Plan to fully fund necessary traffic mitigation. This funding mechanism shall be in conformance with the Draft Greenbriar Finance Plan presented in Appendix C. This funding mechanism shall ensure that the project applicant will pay their fair-share costs (determined in consultation with the City and Caltrans) toward the restriping of the SR 70/99 southbound off-ramp approach to provide a left-turn lane, a shared left turn-right turn lane, and two right-turn lanes (cumulative base lane geometry assumes two left turn and two right turn lanes). The Draft Greenbriar Finance Plan identifies 100% of the funding needed to construct this improvement. Sufficient right-of-way would be available with the future intersection configuration to accommodate these improvements without resulting in substantial alteration or expansion of this intersection. Based on "windshield surveys" of the project area, the site proposed for this improvement is substantially similar to the project site. Construction-related impacts would be similar to the project's construction-related impacts and no new significant impacts would occur. Mitigation recommended for the project would also substantially reduce construction-related impacts associated with this measure. With implementation of this mitigation measure, this intersection would operate at LOS D and this impact would be reduced to a ***less-than-significant*** level.

Mitigation Measure 6.1-5c: SR 70/99 Northbound Ramps and Elkhorn Boulevard (City of Sacramento and Caltrans)

Before project approval, the project applicant shall coordination with the City, prepare a City Council-approved Finance Plan to fully fund necessary traffic mitigation. This funding mechanism shall be in conformance with the Draft Greenbriar Finance Plan presented in Appendix C. This funding mechanism shall ensure that the project applicant will pay their fair-share costs (determined in consultation with the City) toward the restriping of the SR 70/99 northbound off-ramp approach to provide two left-turn lanes, a shared left turn-right turn lane, and a right-turn lane (cumulative base lane geometry assumes two left turn and two right turn lanes). The Draft Greenbriar Finance Plan identifies 100% of the funding needed to construct this improvement. Sufficient right-of-way would be available with the future intersection lane configuration to accommodate these improvements without resulting in substantial alteration or expansion of this intersection. Based on "windshield surveys" of the project area, the site proposed for this improvement is substantially similar to the project site. Construction-related impacts would be similar to the project's construction-related impacts and no new significant impacts would occur. Mitigation recommended for the project would also substantially reduce construction-related impacts associated with this measure. With implementation of this mitigation measure, this intersection would operate at LOS E in the a.m. peak hour and this impact would be reduced to a ***less-than-significant*** level.

Mitigation Measure 6.1-5d: Metro Air Parkway and I-5 Northbound Ramps (City of Sacramento and Caltrans)

Before project approval, the project applicant shall coordinate with the City, prepare a City Council-approved Finance Plan to fully fund necessary traffic mitigation. This funding mechanism shall be in conformance with the Draft Greenbriar Finance Plan presented in Appendix C. This funding mechanism shall ensure that the project applicant will pay their fair-share costs (determined in consultation with the City) toward the restriping of the I-5 northbound off-ramp approach to provide a left-turn lane, a shared left turn-right turn lane and two right-turn lanes (cumulative base lane geometry assumes two left turn and two right turn lanes). The Draft Greenbriar Finance Plan identifies 100% of the funding needed to construct this improvement. This improvement would not require any additional right-of-way and would not in substantial alteration or expansion of this intersection. With

implementation of this mitigation measure, this intersection would operate at LOS F in the a.m. and LOS E in the p.m. peak hour and this impact would be reduced to a ***less-than-significant*** level.

Mitigation Measure 6.1-5e: Meister Way and Metro Air Parkway (City of Sacramento)

Adding a left-turn lane and restriping the westbound Meister Way approach to provide two left-turn lanes and a shared, through right-turn lane (cumulative base lane geometry assumes a left turn lane, a through lane, and a right turn lane) would mitigate this impact to a less-than-significant level. However, construction of this mitigation measure would require the acquisition of additional right-of-way which is not controlled by the applicant. Although implementation of this measure would reduce the project's cumulative impacts to this intersection to a less-than-significant level, it is unknown whether additional right-of-way could be secured and whether this measure would be implemented. Therefore, for purposes of CEQA this impact is considered ***significant and unavoidable***.

Mitigation Measure 6.1-5f: Meister Way and Lone Tree Road (City of Sacramento)

Adding a left-turn lane for the eastbound and westbound Meister Way approaches, and southbound Lone Tree Road approach would improve the operations of this intersection to LOS C and would reduce this impact to a less-than-significant level. Sufficient right-of-way could be secured by the applicant for the westbound approach; however, right-of-way along eastbound and southbound approach is controlled by the County and not within the City's jurisdiction. Although implementation of this measure would reduce the project's cumulative impacts to this intersection to a less-than-significant level, it is unknown whether additional right-of-way could be secured and whether this measure would be implemented. Therefore, for purposes of CEQA, this impact is considered ***significant and unavoidable***.

Mitigation Measure 6.1-5g: Meister Way and E. Commerce Way (City of Sacramento)

On or before 65% buildout of the project based on the project's total trips, the project applicant shall revise the improvement plan to provide a left-turn lane for the northbound East Commerce Way approach, an additional lane for the eastbound Meister Way approach, and restripe the eastbound Meister Way approach to provide a left-turn lane and a right-turn lane (base cumulative lane geometry assumed to have a shared left turn-right turn lane for the eastbound approach). Sufficient right-of-way is currently available to accommodate these improvements without resulting in substantial alteration or expansion of this intersection. Based on "windshield surveys" of the project area, the site proposed for this improvement is substantially similar to the project site. Construction-related impacts would be similar to the project's construction-related impacts and no new significant impacts would occur. Mitigation recommended for the project would also substantially reduce construction-related impacts associated with this measure. With implementation of this mitigation measure, this intersection would operate at LOS C and this impact would be reduced to a ***less-than-significant*** level.

Mitigation Measure 6.1-5h: Elkhorn Boulevard and Project Street 1 (City of Sacramento)

Construction of an additional through lane for the eastbound and westbound Elkhorn Boulevard approaches (cumulative base lane geometry assumes three through lanes in each direction on Elkhorn Boulevard) would reduce this impact to a less-than-significant level. However, this measure would require the acquisition of additional right-of-way beyond the maximum right-of-way proposed by the City/County for this roadway. No other feasible measures are available to reduce this impact because of limited right-of-way. Therefore, this impact is considered ***significant and unavoidable***.

Mitigation Measure 6.1-5i: Elkhorn Boulevard and Project Street 2 (City of Sacramento)

Construction of an additional through lane for the eastbound and westbound Elkhorn Boulevard approaches (cumulative base lane geometry assumes three through lanes in each direction on Elkhorn Boulevard) would reduce this impact to a less-than-significant level. However, this measure would require the acquisition of

additional right-of-way beyond the maximum right-of-way proposed by the City/ County for this roadway. No other feasible measures are available to reduce this impact because of limited right-of-way. Therefore, this impact is considered ***significant and unavoidable***.

Mitigation Measure 6.1-5j: Elkhorn Boulevard and Project Street 3 (City of Sacramento)

Construction of an additional through lane for the eastbound and westbound Elkhorn Boulevard approaches (cumulative base lane geometry assumes three through lanes in each direction on Elkhorn Boulevard) would reduce this impact to a less-than-significant level. However, this measure would require the acquisition of additional right-of-way beyond the ultimate right-of-way proposed by the City for this roadway. To improve the operations of this intersection under cumulative conditions, before buildout of the project, the project applicant shall restrict the left turn in/out movement at this intersection so that it will be right in/ right out movement only with a stop sign control on the side street. Although the operation of this intersection would improve, it would not cause this intersection to operate at an acceptable level (e.g., LOS D or better). No other mitigation is available to reduce this impact. As a result, this impact would remain ***significant and unavoidable***.

Significance After Mitigation

With implementation of the above mitigation measures, the SR 70/99 Southbound Ramps and Elkhorn Boulevard, SR 70/99 Northbound Ramps and Elkhorn Boulevard, Metro Air Parkway and I-5 Northbound Ramps, and Meister Way and E. Commerce Way intersections would operate at acceptable levels under cumulative conditions and the project's cumulative impacts would be reduced to a less-than-significant level.

No feasible mitigation is available or implementation of feasible mitigation can not be guaranteed because it is not subject to the control of the City for the intersections of Elkhorn Boulevard and Lone Tree Road, Meister Way and Metro Air Parkway, Meister Way and Lone Tree Road, Elkhorn Boulevard and Project Street 1, Elkhorn Boulevard and Project Street 2, and Elkhorn Boulevard and Project Street 3. Therefore, the project's cumulative impacts to these intersections are considered ***significant and unavoidable***.

IMPACT 6.1-6

Cumulative Impacts to Study Area Roadway Segments. *The proposed project in combination with cumulative projects would increase traffic volumes on study area roadway segments and would cause these segments (i.e., Elkhorn Boulevard west of SR 70/99 Interchange, Metro Air Parkway north of I-5 Interchange, and Meister Way west of SR 70/99) to degrade from an acceptable operating condition (i.e., LOS A) to an unacceptable operating condition (i.e., LOS F). Because study area roadway segments would operate unacceptably as a result of the project, this would be a* ***significant*** *impact.*

On a cumulative basis, traffic associated with proposed land uses and cumulative projects would increase traffic volumes on local roadway segments. Table 6.1-38 compares the roadway segment operating conditions for Cumulative No Project conditions with that of Cumulative plus Project conditions.

Implementation of the project in combination with cumulative projects would cause three study area segments to operate unacceptably as described below:

- *Elkhorn Boulevard west of SR 70/99 Interchange:* The project would cause this segment to degrade from LOS E to LOS F under Cumulative plus Project conditions.
- *Metro Air Parkway north of I-5 Interchange:* The project would cause this segment to continue operating at LOS F under Cumulative plus Project conditions. However, the project would not cause the volume-to-capacity ratio of this segment to increase by more than 0.05 seconds.

- *Meister Way west of SR 70/99:* The project would cause this segment to degrade from LOS A to LOS F under Cumulative plus Project Conditions.

Table 6.1-38
Cumulative Roadway Segment Operating Conditions

Roadway Segment	Lanes	Level of Service (V/C)	
		No Project	Plus Project
Elkhorn Boulevard west of SR 70/99 Interchange	6	**E (0.97)**	**F (1.11)**
(With Meister Way overpass)	8		**D (0.83)**
Lone Tree Road south of Elkhorn Boulevard	4	A (0.38)	B (0.58)
Metro Air Parkway north of I-5 Interchange	6	**F (1.46)**	**F (1.50)**
(with Meister Way overpass)	8		**F (1.12)**
Meister Way west of SR 70/99	2	A (0.36)	**F (0.96)**
(with Meister Way overpass)	4		A (0.48)

Notes: LOS = level or service; V/C = Volume/Capacity ratio
Bold = Unacceptable Ramp Operation
Reference: Highway Capacity Manual 2000 Edition.

The project would result in less-than-significant cumulative impacts to the Lone Tree Road south of Elkhorn Boulevard segment because it would operate at LOS B, which is acceptable based on City and County standards. Further, the project's cumulative impact to the Metro Air Parkway north of I-5 segment would be less-than-significant because the project would not cause the volume-to-capacity of this segment to increase by more than 0.05. However, because the project would cause the Elkhorn Boulevard west of SR 70/99 Interchange segment to degrade from LOS E to LOS F and the Meister Way west of SR 70/99 to degrade from LOS A to LOS F under Cumulative plus Project conditions, impacts to these intersections would be a cumulatively ***significant*** impact.

Mitigation Measure 6.1-6a: Elkhorn Boulevard west of SR 70/99 Interchange (City of Sacramento)

Widening Elkhorn Boulevard to eight lanes (4 in each direction) would reduce this impact to a less-than-significant level. The City includes widening of Elkhorn Boulevard to six lanes within its General Plan; widening to eight lanes is not feasible nor planned by the City. Therefore, before project approval, the project applicant shall, in coordination with the City, establish a funding mechanism to fully fund necessary traffic mitigation. This funding mechanism shall be in conformance with the Draft Greenbriar Finance Plan presented in Appendix C. This funding mechanism shall ensure that the project applicant will pay their fair-share costs towards widening Elkhorn Boulevard to six lanes west of the SR 70/99 Interchange (the number of lanes planned by the City of Sacramento). The City and developers of the MAP project have identified 100% of the funding necessary to widen the Elkhorn Boulevard/SR 70/99 overpass to six lanes. No other feasible mitigation is available to reduce this impact. Therefore, while reduced, this impact would remain ***significant and unavoidable***.

Mitigation Measure 6.1-6b: Meister Way west of SR 70/99 (City of Sacramento)

The project applicant shall implement Mitigation measure 6.1-2c. With implementation of this mitigation measure, this segment would operate at LOS B and this impact would be reduced to a ***less-than-significant*** level.

Significance After Mitigation

With implementation of the above mitigation measures, the Meister Way west of SR 70/99 segment would operate at acceptable levels under cumulative conditions and the project's cumulative impacts would be reduced to a ***less-than-significant*** level.

However, no feasible mitigation is available to reduce the project's cumulative impacts to the Elkhorn Boulevard west of SR 70/99 interchange segment. Therefore, the project's cumulative impact to this intersection is considered ***significant and unavoidable***.

IMPACT 6.1-7

Cumulative Impacts to Study Area Freeway Ramps. *The proposed project in combination with cumulative projects would increase traffic volumes on the freeway system and would cause six study freeway ramps (i.e., SR 70/99 Northbound to Elkhorn Boulevard off ramp, Elkhorn Boulevard to SR 70/99 Southbound slip on ramp, I-5 Northbound to SR 70/99 Northbound off ramp, I-5 Northbound to Metro Air Parkway off-ramp, I-5 Southbound to Metro Air Parkway off ramp, and Metro Air Parkway to I-5 Southbound loop on ramp) to operate unacceptably under Cumulative plus Project conditions and exceed Caltrans thresholds of significance for freeway ramp operations. This would be a* ***significant*** *cumulative impact and the project's contribution to this impact would be cumulatively considerable.*

With implementation of the project and cumulative projects, traffic volumes on the local freeway system would increase. Tables 6.1-39 compares the peak-hour operating conditions for the study ramps under Cumulative No Project conditions with that of Cumulative plus Project conditions.

As shown in Table 6.1-39, all the study ramps are expected to operate acceptably under Cumulative plus Project conditions, except for the following ramps:

- *SR 70/99 Northbound to Elkhorn Boulevard off-ramp:* The project would cause this freeway ramp to degrade from LOS E to LOS F under Cumulative plus Project conditions.
- *Elkhorn Boulevard to SR 70/99 Southbound slip on-ramp:* The project would cause this freeway ramp to degrade from LOS D to LOS E under Cumulative plus Project conditions.
- *I-5 Northbound to SR 70/99 Northbound off-ramp:* Under Cumulative No Project conditions, this freeway ramp would operate at LOS E. Under Cumulative plus Project conditions, this freeway ramp would continue to operate at LOS E; however, the project would contribute additional traffic during peak hours to an intersection that would operate unacceptably.
- *I-5 Northbound to Metro Air Parkway off-ramp:* Under Cumulative No Project conditions, this freeway ramp would operate at LOS F. Under Cumulative plus Project conditions, this freeway ramp would continue to operate at LOS F; however, the project would contribute additional traffic during the a.m. peak hour to an intersection that would operate unacceptably.
- *I-5 Southbound to Metro Air Parkway off-ramp*: Under Cumulative No Project conditions, this freeway ramp would operate at LOS F. Under Cumulative plus Project conditions, this freeway ramp would continue to operate at LOS F; however, the project would contribute additional traffic during the a.m. peak hour to an intersection that would operate unacceptably.

Table 6.1-39
Cumulative Peak-Hour Freeway Ramp Operating Conditions

Ramp	Level of Service											
	No Project						Plus Project ("with" the Meister-SR 70/99 overpass)					
	A.M. Peak Hour			P.M. Peak Hour			A.M. Peak Hour			P.M. Peak Hour		
	Volume (vph)	LOS	Queue Length (feet) [X: Y, Z][1]	Volume (vph)	LOS	Queue Length (feet) [X: Y, Z][1]	Volume (vph)	LOS	Queue Length (feet) [X: Y, Z][1]	Volume (vph)	LOS	Queue Length (feet) [X: Y, Z][1]
Elkhorn Boulevard to SR 70/99 northbound (Loop on-ramp)	31	B	-	377	B	-	49	B	-	437	B	-
Elkhorn Boulevard to SR 70/99 northbound (on-ramp)	638	B	-	78	B	-	641	B	-	90	B	-
SR 70/99 northbound to Elkhorn Boulevard (off-ramp)	**1,908**	**E**	**[NBL: 1,156, 1,270]**	815	C	[NBL: 112, 1,270]	2,067	**F**	**[NBL: 1,290, 1,270]**	1,024	C	[NBL: 222, 1,270]
With Mitigation								C	[NBL: 393, 1,270]		B	[NBL: 165, 1,270]
SR 70/99 southbound to Elkhorn Boulevard (off-ramp)	536	C	[SWR: 383, 1,250]	408	C	[SWL: 92, 1,250]	577	C	[SWR: 468, 1,250]	447	C	[SWL: 115, 1,250]
Elkhorn Boulevard to SR 70/99 southbound (loop on-ramp)	454	B	-	84	B	-	454	B	-	84	B	-
Elkhorn Boulevard to SR 70/99 southbound (on-ramp)	261	B	-	1,837	D	-	404	B	-	**2,045**	**E**	**-**
With Mitigation								B			C	
Elverta Boulevard to SR 70/99 northbound (Loop on-ramp)	64	B	-	781	B	-	65	B	-	785	B	-
Elverta Boulevard to SR 70/99 northbound (on-ramp)	61	B	-	24	B	-	61	B	-	24	B	-
SR 70/99 northbound to Elverta Boulevard (off-ramp)	1,549	D	[NBL: 1,008, 1,270]	417	C	[NBR: 99, 1,270]	1553	D	[NBL: 1,021, 1,270]	437	C	[NBR: 105, 1,270]

Table 6.1-39
Cumulative Peak-Hour Freeway Ramp Operating Conditions

Ramp	Level of Service											
	No Project						Plus Project ("with" the Meister-SR 70/99 overpass)					
	A.M. Peak Hour			P.M. Peak Hour			A.M. Peak Hour			P.M. Peak Hour		
	Volume (vph)	LOS	Queue Length (feet) [X: Y, Z][1]	Volume (vph)	LOS	Queue Length (feet) [X: Y, Z][1]	Volume (vph)	LOS	Queue Length (feet) [X: Y, Z][1]	Volume (vph)	LOS	Queue Length (feet) [X: Y, Z][1]
SR 70/99 southbound to Elverta Boulevard (off-ramp)	783	C	[SWR: 707, 1,250]	249	C	[SWL: 35, 1,250]	785	C	[SWR: 709, 1,250]	256	C	[SWL: 35, 1,250]
Elverta Boulevard to SR 70/99 southbound (loop on-ramp)	306	B	-	28	B	-	319	B	-	32	B	-
Elverta Boulevard to SR 70/99 southbound (on-ramp)	40	B	-	1,311	C	-	40	B	-	1,312	C	-
SR 70/99 southbound to I-5 northbound (off-ramp)	562	C	-	174	C	-	568	C	-	186	C	-
I-5 southbound to SR 70/99 northbound (off-ramp)	148	C	-	506	C	-	156	C	-	516	C	-
SR 70/99 southbound to I-5 southbound (on-ramp)	1,524	B	-	3,409	D	-	1,662	B	-	3,605	D	-
I-5 northbound to SR 70/99 northbound (off-ramp)	**3,211**	**E**	-	1,863	C	-	**3,362**	**E**	-	2,062	C	-
with Meister Way overpass								C			B	
I-5 northbound to Metro Air Parkway (off-ramp)*	**3,795**	**F**	**[WBR: 2,655, 1,270]**	853	C	[WBR: 231, 1,270]	**3,828**	**F**	**[WBR: 2,693, 1,270]**	888	C	[WBR: 373, 1,270]
with Meister Way overpass								D	[WBR: 1,124, 1,270]		B	[WBR: 313, 1,270]
Metro Air Parkway to I-5 northbound (on-ramp)*	209	B	-	1,707	D	-	259	B	-	1,776	D	-

Table 6.1-39
Cumulative Peak-Hour Freeway Ramp Operating Conditions

Ramp	Level of Service											
	No Project						Plus Project ("with" the Meister-SR 70/99 overpass)					
	A.M. Peak Hour			P.M. Peak Hour			A.M. Peak Hour			P.M. Peak Hour		
	Volume (vph)	LOS	Queue Length (feet) [X: Y, Z][1]	Volume (vph)	LOS	Queue Length (feet) [X: Y, Z][1]	Volume (vph)	LOS	Queue Length (feet) [X: Y, Z][1]	Volume (vph)	LOS	Queue Length (feet) [X: Y, Z][1]
Metro Air Parkway to I-5 northbound (loop on-ramp)*	350	B	-	254	B	-	353	B	-	254	B	-
I-5 southbound to Metro Air Parkway (off-ramp)*	**2,062**	**F**	**[SEL: 757, 1,250]**	739	C	[SER: 56, 1,250]	**2122**	**F**	**[SBL: 776, 1,250]**	809	C	[SBL: 60, 1,250]
with Meister Way overpass								C	[SBL: 423, 1,250]		B	[SBL: 42, 1,250]
Metro Air Parkway to I-5 southbound (on-ramp)*	0	B	-	270	B	-	0	B	-	278	B	-
Metro Air Parkway to I-5 southbound (loop on-ramp)*	494	B	-	**3,642**	**F**	-	521	B	-	**3,690**	**F**	-
with Meister Way overpass								B			**D**	

Notes: LOS – level of service for ramp freeway junction areas of influence
Bold – Unacceptable Ramp Operation
Reference – Highway Capacity Manual 2000 Edition
vph – Vehicles per hour
* Future ramps
[1] X:Y,Z = Most critical ramp approach: 95th Percentile Queue Length, Available Segment Length/Storage
- Slip ramps. Requires arrival and departure data to estimate queuing on-ramps. However, the ramps are long enough to contain queues. As shown in the table, traffic volumes are low on the slip ramps.

- *Metro Air Parkway to I-5 Southbound loop on-ramp:* Under Cumulative No Project conditions, this freeway ramp would operate at LOS F. Under Cumulative plus Project conditions, this freeway ramp would continue to operate at LOS F; however, the project would contribute additional traffic during the p.m. peak hour to an intersection that would operate unacceptably.

Because the project would cause six study area freeway ramps to either degrade from an acceptable operating condition to an unacceptable operating condition or would contribute traffic to a freeway ramp that would operate unacceptably under Cumulative no Project conditions, the project's impacts to these intersections would be cumulatively ***significant***.

Mitigation Measure 6.1-7a: SR 70/99 Northbound to Elkhorn Boulevard off-ramp (City of Sacramento and Caltrans)

The project applicant shall implement mitigation measure 6.1-5c, which requires a funding mechanism for the re-striping the SR 70/99 northbound off-ramp approach to provide two left-turn lanes, a shared left turn-right turn lane and a right-turn lane (cumulative base lane geometry assumes two left turn and two right turn lanes). With implementation of this mitigation measure and widening this ramp from one lane to two lanes, this ramp would operate at LOS C and this impact would be reduced to a less-than-significant level. However, these ramps are not under the jurisdiction of the City of Sacramento (i.e., subject to Caltrans jurisdiction). While the project would contribute funds that would implement measures that would fully mitigate impacts to this intersection to a less-than-significant level, it is unknown whether these measures would be implemented because they are not subject to the control of the City. As a result, for purposes of CEQA, cumulative impacts to these intersections would be considered ***significant and unavoidable***.

Mitigation Measure 6.1-7b: Elkhorn Boulevard to SR 70/99 Southbound diagonal on-ramp (City of Sacramento and Caltrans)

Widening the on-ramp to provide an additional lane would reduce the impact of the project to a less-than-significant level and the on-ramp would operate at LOS C. However, widening of the on-ramp is not included in Caltrans' DSMP and Caltrans does not have any funding mechanisms to implement this improvement. Therefore, this mitigation measure is considered infeasible and the impact would remain ***significant and unavoidable***.

Mitigation Measure 6.1-7c: I-5 Northbound to SR 70/99 Northbound off-ramp (City of Sacramento and Caltrans)

Widening the on-ramp to provide an additional lane would improve the operating condition on this off-ramp to LOS C. The project would contribute approximately 4% of the total a.m. peak-hour trips at this off-ramp and would be required to pay a 4% fairshare contribution toward implementing a feasible mitigation measure, if available. Widening of the off-ramp is not included in Caltrans' DSMP and Caltrans does not have any funding mechanisms to implement this improvement. Furthermore, widening the off-ramp would require additional right-of-way which is not controlled by the project applicant and is not within the jurisdiction of the City. Therefore, this mitigation measure is considered infeasible and the impact would remain ***significant and unavoidable***.

Mitigation Measure 6.1-7d: I-5 Northbound to Metro Air Parkway off-ramp (City of Sacramento and Caltrans)

The project applicant shall implement mitigation measure 6.1-5d, which requires the establishment of a funding mechanism for restriping the I-5 northbound off-ramp approach to provide a left turn lane, a shared left turn-right turn lane and two right turn lanes (cumulative base lane geometry assumes two left turn and two right turn lanes). With implementation of this mitigation measure, this ramp would operate at LOS D and this impact would be reduced to a less-than-significant level. However, these ramps are not under the jurisdiction of the City of Sacramento (i.e., subject to Caltrans jurisdiction). While the project would contribute funds that would implement measures that would fully mitigate impacts to this intersection to a less-than-significant level, it is

unknown whether these measures would be implemented because they are not subject to the control of the City. As a result, for purposes of CEQA, cumulative impacts to these intersections would be considered ***significant and unavoidable***.

Mitigation Measure 6.1-7e: I-5 Southbound to Metro Air Parkway off-ramp (City of Sacramento and Caltrans)

Before project approval, the project applicant shall in coordination with the City, prepare a City Council-approved Finance Plan to fully fund necessary traffic mitigation. This funding mechanism shall be in conformance with the Draft Greenbriar Finance Plan presented in Appendix C. This funding mechanism shall ensure that the project applicant will pay their fair-share costs (determined in consultation with the City) toward the re-striping the I-5 southbound off-ramp approach to provide two left-turn lanes, a shared left turn-right turn lane and a right-turn lane (cumulative base lane geometry assumes two left turn and two right turn lanes). The Greenbriar Finance Plan identifies 100% of the funding needed to construct this improvement. Sufficient right-of-way is currently available to accommodate these improvements without resulting in expansion of this intersection. Based on "windshield surveys" of the project area, the site proposed for this improvement is substantially similar to the project site. Construction-related impacts would be similar to the project's construction-related impacts and no new significant impacts would occur. Mitigation recommended for the project would also substantially reduce construction-related impacts associated with this measure. The project would contribute approximately 3% of the total a.m. peak-hour trips at this off-ramp and as a result shall contribute 3% to construction of this improvement. Caltrans would be the agency responsible for implementation of this measure and as a result the City would be required to coordinate with Caltrans on the funding of this improvement. Caltrans' District 3 DSMP includes the I-5/Metro Air Parkway Interchange, but does not identify specific improvements or project construction date. Construction of I-5 Southbound to Metro Air Park off-ramp is included in Metro Air Park Finance Plan, so the applicant would be required to pay its fair share contribution in conjunction with Metro Air Park finance plan toward the construction of this improvement. With implementation of this mitigation measure, this freeway ramp would operate at LOS C; therefore, this impact would be reduced to a less-than-significant level. However, these ramps are not under the jurisdiction of the City of Sacramento (i.e., subject to Caltrans jurisdiction). While the project would contribute funds that would implement measures that would fully mitigate impacts to this intersection to a less-than-significant level, it is unknown whether these measures would be implemented because they are not subject to the control of the City. As a result, for purposes of CEQA, cumulative impacts to these intersections would be considered ***significant and unavoidable***.

Mitigation Measure 6.1-7f: Metro Air Parkway to I-5 Southbound loop on-ramp (City of Sacramento and Caltrans)

Before project approval, the project applicant shall in coordination with the City, prepare a City Council-approved Finance Plan to fully fund necessary traffic mitigation. This funding mechanism shall be in conformance with the Draft Greenbriar Finance Plan presented in Appendix C. This funding mechanism shall ensure that the project applicant will pay their fair-share costs (determined in consultation with the City and Caltrans) toward the widening of the on-ramp to provide an additional lane. The Draft Greenbriar Finance Plan identifies 100% of the funding needed to construct this improvement. Sufficient right-of-way is currently available to accommodate these improvements without resulting in expansion of this intersection. Based on "windshield surveys" of the project area, the site proposed for this improvement is substantially similar to the project site. Construction-related impacts would be similar to the project's construction-related impacts and no new significant impacts would occur. Mitigation recommended for the project would also substantially reduce construction-related impacts associated with this measure. The project would contribute approximately 1% of the total p.m. peak-hour trips at this off-ramp and as a result shall contribute 1% to construction of this improvement Caltrans would be the agency responsible for implementation of this measure and as a result the project applicant would be required to coordinate with Caltrans on the funding of this improvement. Caltrans' District 3 DSMP includes the I-5/Metro Air Parkway Interchange, but does not identify specific improvements or project construction date. Additionally, the construction of Metro Air Parkway to I-5 southbound loop on-ramp is

included in the Metro Air Park Finance Plan, so the applicant would be required to pay its fair share contribution in conjunction with Metro Air Park finance plan toward the construction of this improvement. With implementation of this mitigation measure, this freeway ramp would operate at LOS D; therefore, this impact would be reduced to a less-than-significant level. However, these ramps are not under the jurisdiction of the City of Sacramento (i.e., subject to Caltrans jurisdiction). While the project would contribute funds that would implement measures that would fully mitigate impacts to this intersection to a less-than-significant level, it is unknown whether these measures would be implemented because they are not subject to the control of the City. As a result, for purposes of CEQA, cumulative impacts to these intersections would be considered ***significant and unavoidable***.

Significance After Mitigation

With implementation of the above mitigation measures, SR 70/99 Northbound to Elkhorn Boulevard off-ramp, I-5 Northbound to Metro Air Parkway off-ramp, I-5 Southbound to Metro Air Parkway off-ramp, and the Metro Air Parkway to I-5 Southbound loop on-ramp would operate at acceptable levels under cumulative conditions and the project's cumulative impact would be reduced to a less-than-significant level. However, these ramps are not under the jurisdiction of the City of Sacramento (i.e., subject to Caltrans jurisdiction). While the project would contribute funds that would implement measures that would fully mitigate impacts to this intersection to a less-than-significant level, it is unknown whether these measures would be implemented because they are not subject to the control of the City. As a result, for purposes of CEQA, cumulative impacts to these intersections would be considered ***significant and unavoidable***.

Further, no feasible mitigation is available or implementation of feasible mitigation can not be guaranteed because it is not subject to the control of the City for the Elkhorn Boulevard to SR 70/99, Southbound slip on-ramp and the Northbound to SR 70/99 Northbound off-ramp. Therefore, the project's cumulative impacts to these intersections are considered ***significant and unavoidable***.

IMPACT 6.1-8

Cumulative Freeway Mainline Segment Impacts. *The proposed project in combination with cumulative projects would increase traffic volumes on the freeway system and would cause three study freeway mainline segments (i.e., I-5 east of Powerline Road, I-5 north of Del Paso Road, I-5 north of I-5/I-80 interchanges between I-80 and Arena Boulevard) to operate unacceptably under Cumulative plus Project Conditions. These intersections would operate unacceptably under Cumulative no Project conditions; however, the project would contribute additional trips to these intersections, which is unacceptable based on Caltrans standards. This would be a cumulatively* ***significant*** *impact.*

With implementation of the project and cumulative projects, traffic volumes on the local freeway system would increase. Tables 6.1-40 compares the peak-hour operating conditions for the freeway mainline segments under Cumulative No Project conditions with that of Cumulative plus Project conditions.

As shown in Table 6.1-36, three mainline segments are expected to operate unacceptably under Cumulative plus Project conditions as described below:

- *Interstate 5 – east of Powerline Road* – Under Cumulative No Project conditions, this mainline segment would operate at LOS F during the a.m. and p.m. peak hours (westbound/northbound direction and eastbound/ southbound direction respectively). Under Cumulative plus Project conditions, this freeway ramp would continue to operate at LOS F during the a.m. and p.m. peak hours; however, the project would contribute additional traffic during the a.m. peak hour to an intersection that would operate unacceptably.

Table 6.1-40
Cumulative Peak-Hour Freeway Mainline Operating Conditions

Freeway Segment	Direction	Level of Service											
		No Project						Plus Project ("with" the Meister-SR 70/99 overpass)					
		A.M. Peak Hour			P.M. Peak Hour			A.M. Peak Hour			P.M. Peak Hour		
		Volume (vph)	Density (pc/m/l)	LOS	Volume (vph)	Density (pc/m/l)	LOS	Volume (vph)	Density (pc/m/l)	LOS	Volume (vph)	Density (pc/m/l)	LOS
I-5 East of Power Line Road	WB/NB	**6,266**	**> 45**	**F**	**3,807**	**41.6**	**E**	**6,304**	-	**F**	3,854	42.9	**E**
	with Meister Way overpass									**D**			C
	EB/SB	3,243	31.1	D	**6,064**	**> 45**	**F**	3,278	31.6	D	**6,130**	-	**F**
	with Meister Way overpass									B			**D**
I-5 North of Del Paso Road	NB	**8,915**	**> 45**	**F**	5,496	25.4	C	**9,099**	-	**F**	5,730	26.6	D
	with Meister Way overpass									**E**			C
	SB	4,619	21.3	C	**8,966**	**> 45**	**F**	4,784	22	C	**9,218**	-	**F**
	with Meister Way overpass									B			**E**
I-5 North of I-5/I-80 Interchange between I-80 and Arena Boulevard Exit	NB	**10,545**	**> 45**	**F**	6,976	34.9	D	**10,783**	-	**F**	7,305	38	**E**
	with Meister Way overpass									**E**			C
	SB	5,760	26.7	D	**10,802**	**> 45**	**F**	6,004	28.1	D	**11,189**	-	**F**
	with Meister Way overpass									C			**E**
SR 70/99 between Elverta Road and Elkhorn Boulevard	NB	2,120	19.5	C	2,009	18.5	C	2,141	19.7	C	2,079	19.1	C
	SB	1,909	17.6	B	2,069	19	C	1,949	17.9	B	2,108	19.4	C
SR 70/99 between Elkhorn Boulevard and I-5/SR 70/99 Interchange	NB	3,359	20.6	C	2,369	14.5	B	3,518	21.6	C	2,578	15.8	B
	SB	2,087	12.8	B	3,583	22	C	2,230	13.7	B	3,791	23.3	C

Notes: vph - vehicles per hour; pc/m/l - passenger cars per mile per lane; LOS = Level of Service;
Bold = Unacceptable Freeway Segment Operation.

- *Interstate 5 – north of Del Paso Road* – Under Cumulative No Project conditions, this mainline segment would operate at LOS F during the a.m. and p.m. peak hours (northbound direction and southbound direction respectively). Under Cumulative plus Project conditions, this freeway ramp would continue to operate at LOS F during the a.m. and p.m. peak hours; however, the project would contribute additional traffic during the a.m. peak hour to an intersection that would operate unacceptably.

- *Interstate 5 – north of I-5/I-80 Interchange* – between I-80 and Arena Boulevard Exit – Under Cumulative No Project conditions, this mainline segment would operate at LOS F during the a.m. and p.m. peak hours (northbound direction and southbound direction respectively). Under Cumulative plus Project conditions, this freeway ramp would continue to operate at LOS F during the a.m. and p.m. peak hours; however, the project would contribute additional traffic during the a.m. peak hour to an intersection that would operate unacceptably.

Because the project would contribute traffic to three freeway mainline segments that would operate unacceptably under Cumulative No Project conditions, the project's impacts to these intersections would be cumulatively ***significant.***

Mitigation Measure 6.1-8a: I-5 east of Powerline Road to the MAP Interchange (City of Sacramento and Caltrans)

Because this mainline segment of I-5 would operate unacceptably under Cumulative No Project conditions, widening this segment to eight lanes (currently four lanes) would improve the operating conditions of this segment during peak conditions to an acceptable LOS. The Caltrans' District 3 DSMP includes adding an HOV lane to I-5 by the year 2020 and according to Metro Air Park Finance Plan, this segment of I-5 would be upgraded to six lanes with buildout of the Metro Air Park project. Therefore, prior to recordation of the first map, the project applicant shall, in coordination with the City, prepare a City Council-approved Finance Plan. This funding mechanism shall be in conformance with the Draft Greenbriar Finance Plan presented in Appendix C. This funding mechanism shall ensure that the project applicant will pay their fair-share costs, determined in consultation with the City and in coordination with the Metro Air Park Finance Plan, toward the widening of I-5 to six lanes. No other right-of-way is available to widen this segment to eight lanes. The Draft Greenbriar Finance Plan identifies 100% of the funding needed to construct this improvement. Additional right-of-way to accommodate the expansion of this freeway segment beyond six lanes is not available because of the developing nature of properties to the east and west of I-5. While expansion of this freeway segment would reduce the project's cumulative traffic impacts to this freeway segment, it would not reduce the project's cumulative impact to a less-than-significant level because widening to eight lanes is not feasible. No other feasible mitigation is available to reduce this impact. Therefore, while reduced, this impact would remain ***significant and unavoidable***.

Mitigation Measure 6.1-8b: I-5 north of Del Paso Road (City of Sacramento and Caltrans)

Widening this segment of I-5 mainline to 10 lanes (currently six lanes) would improve the operating conditions of this segment during peak conditions to an acceptable LOS. The Caltrans District 3 DSMP includes adding an HOV lane to I-5 by the year 2020 but no funding mechanism for this project is defined. No other freeway expansion projects are planned for this segment of I-5. Further, because of the developing nature of properties to the east and west of I-5, additional right-of-way is not available for the expansion of this freeway segment. Because no feasible mitigation is available to reduce the project's impacts to this mainline segment, this impact would remain ***significant and unavoidable***.

Mitigation Measure 6.1-8c*:* I-5 north of I-5/I-80 Interchange between I-80 and Arena Boulevard Exit (City of Sacramento and Caltrans)

Because this mainline segment of I-5 would operate unacceptably under Cumulative No Project conditions, widening this segment of I-5 mainline to 12 lanes (currently six lanes) would improve the operating conditions of this segment during peak conditions to an acceptable LOS. The Caltrans District 3 DSMP includes adding an HOV lane to I-5 by the year 2020 but no funding mechanism for this project is available. No other freeway expansion projects are planned for this segment of I-5. Further, because of the developing nature of properties to the east and west of I-5, additional right-of-way is not available for the expansion of this freeway segment. Because no feasible mitigation is available to reduce the project's impacts to this mainline segment, this impact would remain ***significant and unavoidable***.

Significance After Mitigation

No feasible mitigation is available to reduce the project's cumulative mainline freeway segment impacts to a less-than-significant level. Therefore, the project's cumulative impacts to these mainline freeway segment impacts are considered ***significant and unavoidable***.

IMPACT 6.1.9

Pedestrian and Bicycle Circulation Impacts. *The project would add pedestrian demands within the project site and to and from proposed commercial, retail, and light-rail land uses. Specific information on improvements to on and off-site bicycle and pedestrian facilities is not available at this time. Because the project would add demand for pedestrians and bicycle facilities for which facilities may not be available. This would be a* ***potentially significant*** *bicycle and pedestrian circulation impact.*

According to the City's criteria, the project would result in a significant impact to bicycles and pedestrians if the project conflicts with any existing or planned facility or adds demand to one of these modes that is not adequately accommodated by appropriate facilities. The project would construct sidewalks and pedestrian paths throughout the development. These sidewalks would provide pedestrian connections within the site and to the proposed commercial, retail, and light rail land uses. Further, a pedestrian sidewalk would be provided along the Meister Way overpass and would allow pedestrians to access areas east of SR 70/99.

No bicycle facilities are currently available on or near the project site. On street bike lanes exist at several locations along Del Paso Road and six-foot wide bike lanes exist on both sides of East Commerce Way. The project would increase demand for bicycle and pedestrian facilities details of project facilities (e.g., design, siting) is unknown at this time. Therefore, the project could result in inadequate access to on- and off-site pedestrian and bicycle facilities. This would be a ***potentially significant*** impact.

Mitigation Measure 6.1-9: Bicycle and Pedestrian Facilities (City of Sacramento)

a. Prior to recordation of the first map, the project applicant shall coordinate with the City of Sacramento Development Engineering and Finance Division to identify the necessary on- and off-site pedestrian and bicycle facilities to serve the proposed development. These facilities shall be incorporated into the project and could include: sidewalks, stop signs, in-pavement lighted crosswalks, standard pedestrian and school crossing warning signs, lane striping to provide a bicycle lane, bicycle parking, signs to identify pedestrian and bicycle paths, marked and raised crosswalks, and pedestrian signal heads.

b. Circulation and access to all proposed parks and public spaces shall include sidewalks that meet American with Disability Act Standards.

c. The project applicant shall dedicate a buffer along the edges of the project site (south, east, and west) to the City of Sacramento. This buffer shall be landscaped by the project applicant and shall provide space for future 10-foot off-street bikeways that would connect residents and employees to the NNCP area and other Class I bike facilities. The buffer on the western edge of the project site shall not encroach on the 250-foot linear open space/buffer proposed for giant garter snake habitat.

d. The project applicant shall provide on-street bicycle lanes 5-6-feet wide within the community. Details on the design and siting of these bike lanes shall be done in consultation with the City of Sacramento Development Engineering and Finance Division.

e. Bicycle parking shall conform to City standards and shall be located in high visibility areas to encourage bicycle travel. Class I (i.e., bicycle lockers) and Class II (i.e., racks) bicycle facilities shall be provided throughout the commercial areas of the project, at a ratio of 1 bicycle storage space for every 20 off-street vehicle parking spaces required. Fifty percent of the storage spaces shall be Class I facilities and the remaining 50% shall be Class II facilities.

f. The project applicant shall provide residents, tenants, and employees of the project site with information regarding the Sacramento Area Council of Government's (SACOG) Rideshare bicycle commuting program.

Significance After Mitigation

With implementation of this mitigation measure, adequate bicycle and pedestrian facilities would be provided at the project site in accordance with City standards. This impact would be reduced to a ***less-than-significant*** level.

IMPACT 6.1-10

Demand for Public Transportation. *Public transit is not currently provided to the project site. At the time the project application was submitted to the City, no plans for the provision of public transit services were proposed. The project would increase demands for public transit facilities, none of which are proposed to be provided to the project site. Therefore, the project would result in a* ***significant*** *public transportation impact.*

The project would increase demands for public transportation services. As shown in Table 6.1-20, residents at the project site would generate 233 transit trips per day and patrons of the commercial component of the project would generate 63 transit trips per day. Sacramento Regional Transit District (RT) provides light-rail transit (LRT) service in Sacramento. Regional Transit plans to extend service from downtown Sacramento to the Sacramento International Airport, located west of the project site. Service would be provided through construction of a LRT line along the project's proposed Meister Way. With construction and operation of the proposed LRT station, the project would increase demands for LRT services.

Currently, public transit services (e.g., LRT, shuttle, and bus services) are not provided on the project site or the nearby vicinity and none were proposed at the time the project application was submitted to the City. The project is proposed to be a transit-oriented development that would serve to encourage the use of public transit facilities. Construction of a new LRT station at the project site would facilitate the transit-oriented design elements and would allow for enhanced public transit opportunities. While the RT intends to construct a new LRT line along Meister Way, the timing of construction of this service is currently unknown and this project would be subject to separate environmental review and project approval processes. No interim public transit facilities/services are proposed at the project site and demand for public transit services would not be met. Therefore, the project would result in a ***significant*** public transportation impact.

Mitigation Measure 6.1-10: (City of Sacramento)

a. Prior to the construction and operation of RT's proposed LRT station along Meister Way, the project applicant shall fund and operate an interim shuttle/bus transportation service for residents and patrons of the project site. The project applicant shall develop this interim transit service in consultation with the City of Sacramento and the RT. The interim transit service shall provide transit services for peak commute periods. To promote the use of public transit services, the project applicant at the sale of proposed residences shall promote the availability of transit services. Once demand for public transit services reaches 50 service requests, the project applicant shall begin to provide transit services and shall increase those services in proportion to the development levels and increased rider ship levels occurring on the project site.

b. The transit service shall take residents to the Central Business District (CBD) (i.e., downtown Sacramento) where they can transfer to light rail, bus, or train and connect to anywhere in greater Sacramento region and to the Bay Area. The transit service shall connect residents to the following transit services: Sacramento Regional Transit, El Dorado Transit, Yuba-Sutter Transit, Yolo Bus, Placer County Transit, San Joaquin Transit, Fairfield/Suisun Transit, Amador Transit, Roseville Transit, ETRAN (Elk Grove), and the Capitol Corridor/Amtrak. Midday service shall also be considered as development and rider ship demands increase.

c. Final design and operation of the transit service will be subject to the approval of the City and other proposed operating agencies (e.g., RT).

Significance After Mitigation

With implementation of interim public transportation services, the project would ensure that public transportation demands would be adequately met until public transportation services are provided to the project site by RT. This impact would be reduced to a ***less-than-significant*** level.

IMPACT 6.1-11

Construction-Related Impacts. *Construction activities for the project would result in the generation of 50 one-way truck trips per day associated with construction activities and 500 one-way vehicle trips (250 construction workers on-site on a worst-case basis) associated with construction personnel. All construction personnel and vehicles would access the project site from Elkhorn Boulevard and would park in designated areas on the project site. No on-street parking would occur. Although the construction trips would be temporary, because of the size of this project and the large number of personnel required on a daily basis, the project's construction trips could substantially increase local roadway volumes and interfere with the safe and efficient operation of these roadways. This would be a* ***potentially significant*** *impact.*

Construction of the project would result in short-term increases in traffic on local roadways. Construction activities would require the hauling of equipment and materials to the project site and transportation of employees to and from off-site locations. Construction activities would require a maximum of 250 construction workers to commute to the site on a daily basis over a period of 5 to 10 years. These construction workers would generate 500 one-way daily trips to and from the project site. In addition, the project would generate 50 one-way truck trips per day associated with the delivery of construction equipment and materials. Construction vehicles, personnel, and deliveries would access the project site from Elkhorn Boulevard and would park all vehicles in designated areas on the project site. No construction-related vehicles (i.e., equipment, personal vehicles) would be allowed to park along streets in the surrounding neighborhood (e.g., along Elkhorn Boulevard or Lone Tree Road). Existing roadway volumes along Elkhorn Boulevard along the project site frontage are 458 vehicles per day. As a result, the project's proposed construction and vehicle and truck trips (i.e., 650) would increase local roadway volumes by 1.2 times (total of an estimated 1,008 trips).

Because of the extended construction period, these construction trips would combine over time with traffic trips associated with the project, which could result in substantial increases in local roadway volumes. Further, construction activities could result in the temporary disruption of the transportation system in and around the project area, including temporary street closures, which could result in increased roadway congestion, which could interfere with the safe and efficient operation of the local roadway system. Because the construction-related activities could result in substantial increases in local roadway volumes and potential disruptions in the operation of the local roadway network, this would be a ***potentially significant*** impact.

Mitigation Measure 6.1-11: (City of Sacramento)

a. Prior to issuance of grading permits for the project site, the project applicant shall prepare a detailed Traffic Management Plan that will be subject to review and approval by the City Department of Transportation, Caltrans, Sacramento County, and local emergency services providers including the City of Sacramento fire and police departments. The plan shall ensure that acceptable operating conditions on local roadways and freeway facilities are maintained. At a minimum, the plan shall include:

   - the number of truck trips, time an day of street closures,
   - time of day of arrival and departure of trucks,
   - limitations on the size and type of trucks, provision of a truck staging area with a limitation on the number of trucks that can be waiting,
   - provision of a truck circulation pattern,
   - provision of driveway access plan along Elkhorn Boulevard so that safe vehicular, pedestrian, and bicycle movements are maintained (e.g., steel plates, minimum distances of open trenches, and private vehicle pick up and drop off areas),
   - maintain safe and efficient access routes for emergency vehicles,
   - manual traffic control when necessary,
   - proper advance warning and posted signage concerning street closures, and
   - provisions for pedestrian safety.

b. A copy of the construction traffic management plan shall be submitted to local emergency response agencies and these agencies shall be notified at least 14 days before the commencement of construction that would partially or fully obstruct local roadways.

Significance After Mitigation

Implementation of the construction traffic management plan would ensure the safe and efficient operation of the local roadway system and would reduce the project's construction-related transportation impacts to a ***less-than-significant*** level.

IMPACT 6.1-12

Conformity with City Parking Requirements. *A detailed parking plan has not been submitted by the project applicant. As a result, it is unknown whether adequate parking would be provided on the project site for residential, commercial, and retail land uses. Therefore, this would be a potentially* ***significant*** *impact.*

The proposed project intends to provide parking facilities for on-site residences, the proposed school, public park facilities, the proposed light rail station, and proposed commercial and retail land uses. The City has developed minimum parking standards for each land use and these standards are presented in Table 6.1-41.

Table 6.1-41
City Parking Requirements

Land use	Size	Parking Required (Spaces)
Low Density Residential	671 D.U.	671
Medium Density Residential	2,215 D.U.	2,215
High Density Residential (HDR)	587 D.U.	940
Community/Village Commercial	325.2 KSF	1,301
Retail with HDR	47.5 KSF	191
Open space		None required

Source: Planning Division, City of Sacramento, email dated Sep, 19, 2005

Proposed single-family residences would consist of 2- and 3-car garages in addition to on-street parking spaces. The light rail station, school, commercial, and retail land uses would also provide parking areas for employees and patrons to these land uses. However, the project applicant have not submitted a detailed parking plan to the City for review. Therefore, it is unknown whether adequate parking in conformance with the City's parking standards would be provided on-site. Therefore, the project would result in a ***potentially significant*** parking impact.

Mitigation Measure 6.1-12: (City of Sacramento)

The project applicant shall submit a detailed parking plan for each proposed land use at the time development entitlements (e.g., building permits or special permits) are sought. The parking plan shall ensure that parking provided on the project site would meet the City's most current parking standards for the proposed land use and it shall identify the number and location of proposed parking spaces including proposed handicap parking spaces. If a light rail station is constructed within project site, then a park and ride lot or park and ride spaces shall be allocated in the retail zoned area in the vicinity of the proposed LRT station. The parking plan shall be subject to the review and approval by the City Development Engineering and Finance Division.

Significance After Mitigation

With implementation of this mitigation measure, adequate parking would be provided on-site in accordance with the City's standards. This impact would be reduced to a ***less-than-significant*** level.

IMPACT 6.1-13

Project Site Access Impacts. *The project would construct 5 new access points to the project site along Elkhorn Boulevard and Lone Tree Road and 3 access points along Meister Way. With implementation of the project and recommended traffic improvements, access from Elkhorn Boulevard and Lone Tree Road would be adequate. However, access points along Meister Way would be uncontrolled and with project build out could result in unsafe site access conditions (e.g., long queues of vehicles, left-turns across free flow traffic). Therefore, this would be a* ***potentially significant*** *site access impact.*

Access to the project site would be provided primarily from Elkhorn Boulevard via three roadways. Other access points would include Meister Way and a new roadway along Lone Tree Road north of Meister Way. Meister Way is a proposed new east-west arterial that would extend

to the east over SR 70/99 where it would connect with East Commerce Way. To the west this roadway would connect to Metro Air Parkway.

In general, Meister Way serves as the central dividing line within the project site and divides the site into a northern and southern half. Primary access to the northern half of the project site would be provided at three intersections along Elkhorn Boulevard and one intersection on Lone Tree Road between Elkhorn Boulevard and Meister Way. As described above in Impacts 6.1-1, 6.1-2, 6.1-5, and 6.1-6, with implementation of recommended mitigation under baseline and cumulative plus project conditions, the project driveways along Elkhorn Boulevard and Lone Tree Road would operate acceptably. Primary access to the southern half of the project site would be provided at three intersections along Meister Way. These intersections also provide access to the northern portion of the project. As currently proposed, these intersections would be uncontrolled. Traffic associated with the project could result in hazardous and unsafe driving conditions and could result in the queuing of long lines of vehicles behind a vehicle making a left turn off Meister Way and vehicles turning left would cross free flowing traffic. This would be a ***potentially significant*** impact.

Mitigation Measure 6.1-13: (City of Sacramento)

a. Prior to 40% buildout of the project site based on total project trips, an exclusive left turn lane and a shared through-right turn lane for the project side streets with stop control shall be provided at the three four legged project intersections along Meister Way.

b. An exclusive left turn lane for vehicles turning left from the eastbound and westbound Meister Way approaches shall be provided at these intersections. Exhibit 6.1-18 shows the proposed traffic controls throughout the project site.

c. Final design and siting of these improvements shall be subject to the approval of the City Development Engineering and Finance Division, Development Services Department.

Significance After Mitigation

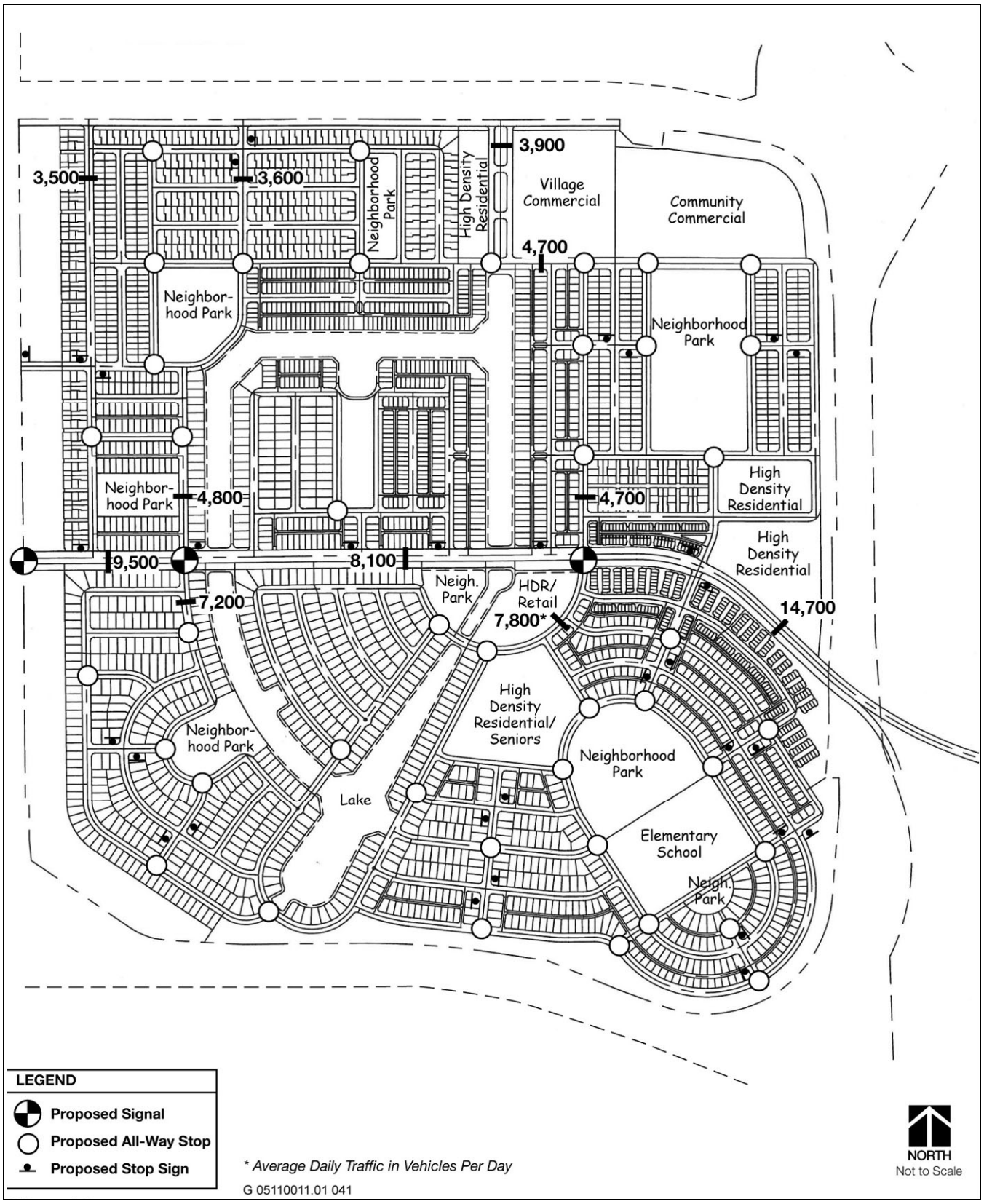
With implementation of this measure, site access impacts along Meister Way would be improved to provide adequate turning opportunities along Meister Way. This impact would be reduced to a ***less-than-significant*** level.

IMPACT 6.1-14

Impacts to Internal Circulation. *Some elements of the internal roadway network (e.g., long, straight streets) could encourage vehicle speeding, which could lead to vehicle safety impact. This would be a* ***potentially significant*** *internal circulation impact.*

The proposed internal circulation network generally consists of three- and four-legged intersections controlled by stop-signs (two-way or all-way). Three traffic signals are proposed along the Meister Way alignment. Exhibit 6.1-18 shows the proposed internal circulation traffic facilities.

While most roadway segments providing internal circulation throughout the neighborhood to Meister Way and proposed commercial and retail areas are controlled by stop signs and some traffic signals. Some roadway segments within the project site result in areas where there would be long, straight streets. Without traffic control features in place, these facilities could encourage vehicle speeding, which could lead to vehicle safety impacts within the community. This would be a ***potentially significant*** impact.



Source: TJKM 2005

Proposed Traffic Controls **Exhibit 6.1-18**

Mitigation Measure 6.1-14: Traffic Calming Measures (City of Sacramento)

During review of the project's tentative map and project entitlements, the project applicant shall coordinate with the City to identify roadways where traffic calming measures including but not limited to narrow travel lanes, speed bumps, round-a-bouts, raised intersections, and stop controls are needed to ensure the orderly, efficient, and safe flow of traffic. Design and siting of these facilities would be subject to approval by the City Development Engineering and Finance Division, Development Services Department.

Significance After Mitigation

With implementation of this mitigation measure, safe driving conditions within the project site would be ensured and would be consistent with the City's standards for internal circulation. This impact would be reduced to a ***less-than-significant*** level.

IMPACT 6.1-15

Impacts to Emergency Vehicle Access. *The project would provide adequate emergency access to the project site. However, construction vehicles could temporarily obstruct local roadways, which could impair the ability of local agencies to respond to an emergency in the project area. This would be a* ***potentially significant*** *impact.*

With implementation of the project, emergency access would be provided via three roadways along Elkhorn Boulevard, two roadways along Lone Tree Road, and the Meister Way overpass over SR 70/99. Design and siting of all roadways would be done in consultation with the City Development Engineering and Finance Division, Development Services Department, Fire Department, and Police Department staff to ensure that the roadways provide adequate access for emergency vehicles (i.e., turning radii, lane width).

Although the majority of project construction would occur within the footprint of the project site, construction of proposed intersection improvements, water and wastewater infrastructure, and the Meister Way overpass could partially obstruct roadways in the project vicinity. Obstruction of these roadways could block or slow emergency response vehicles traveling to the site and could adversely affect the response times of emergency response agencies depending on the time of day (i.e., peak hours). This would be a ***potentially significant*** impact.

Mitigation Measure 6.1-15: Emergency Access (City of Sacramento)

a. During review of the project's tentative map and project entitlements, the project applicant shall coordinate with the City Development Engineering and Finance Division, Development Services Department, Fire Department, and Police Department staff to ensure that the roadways provide adequate access for emergency vehicles (i.e., turning radii, lane width).

b. The project applicant shall implement mitigation measure 6.1-12 (Construction Traffic Management Plan).

Significance After Mitigation

With implementation of this measure, adequate emergency access would be provided to the project site during construction and operation of the project. This impact (Impact 6.1-15) would reduce the project's emergency access impacts to a ***less-than-significant*** level.