March 2006

Kaiser South Sacramento Medical Center Expansion

Draft Environmental Impact Report

State Clearinghouse Number: 2005102127

PREPARED FOR:
City of Sacramento

PREPARED BY:
RBF CONSULTING

DRAFT
ENVIRONMENTAL IMPACT REPORT
KAISER SOUTH SACRAMENTO
MEDICAL CENTER EXPANSION
(P04-185)

State Clearinghouse No. 2005102127

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ACRONYMS AND ABBREVIATIONS

AB	California Assembly Bill
ACOE	U.S. Army Corps of Engineers
af	acre-foot (feet)
AM	morning
APN	Assessor's Parcel Number
Basin	Sacramento Valley Air Basin
BMP	best management practice
CAA	Federal Clean Air Act
CAAQS	California Ambient Air Quality Standards

CalEPA	California Environmental Protection Agency
CalOSHA	California Occupational Safety and Health Administration
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFCs	chlorofluorocarbons
CFR	Code of Federal Regulations
cfs	cubic feet per second
City	City of Sacramento
CNEL	community noise equivalent level
CO	carbon monoxide
CO_2	carbon dioxide
County	Sacramento County
CSD-1	(Sacramento Regional) County Sanitation District
CWA	(Federal) Clean Water Act
cy	cubic yard(s)
dB	decibel(s)
dBA	A-weighted decibel(s)
DEIR	Draft Environmental Impact Report
DTSC	California Department of Toxic Substance Control
du	dwelling units
ED	emergency department
EIR	Environmental Impact Report
EPA	(U.S.) Environmental Protection Agency
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FHWA	Federal Highway Administration
General Plan	*City of Sacramento General Plan*
HAP	hazardous air pollutant
HCM	Highway Capacity Manual
HVAC	heating, ventilation and air conditioning equipment
IS	Initial Study
L_{dn}	day/night average sound level
L_{eq}	equivalent sound level
LOS	traffic level of service
Lmax	maximum noise level recorded during a noise event
m	meter(s)
µg	microgram(s)
MMRP	Mitigation Monitoring and Reporting Program
MRTD	minimum required throat depth
MOB	Medical Office Building
mph	mile(s) per hour
MTC	Metropolitan Transportation Commission
NAAQS	National Ambient Air Quality Standards
NIH	National Institutes of Health
NO_2	nitrogen dioxide
NOC	Notice of Completion
NOP	Notice of Preparation

NO_X	nitrogen oxides
NPDES	National Pollution Discharge Elimination System
O_3	ozone
OSC	Outpatient Surgery Center
OSHA	(Federal) Occupational Safety and Health Administration
OSHPD	(California) Office of Statewide Health Planning and Development
P	phosphorous
Pb	lead
PG&E	Pacific Gas and Electric Company
PHF	peak-hour factor
PM	afternoon
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
PM_{10}	particulate matter less than 10 microns in diameter
ppm	parts per million
PRC	Public Resources Code
Project	Kaiser South Sacramento Medical Center Expansion project
Proposed project	Kaiser South Sacramento Medical Center Expansion project
RBF	RBF Consulting
REC	recognizable environmental condition
ROG	reactive organic gas
ROW	right-of-way
RT	(Sacramento) Regional Transit (District)
RWQCB	(California) Regional Water Quality Control Board
SACMET	Sacramento Metropolitan (Travel Demand Model)
SACOG	Sacramento Area Council of Governments
SCEMD	Sacramento County Environmental Management Department
SCH	State Clearinghouse
SIP	State Implementation Plan
SMUD	Sacramento Municipal Utility District
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO_2	sulfur dioxide
SO_X	sulfur oxides
SPD	Sacramento Police Department
SR	State Route
SSCP	South Sacramento Community Plan
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TAZ	traffic analysis zone
TOC	total organic carbon
TWSC	Two-way Stop Control
UBC	Uniform Building Code
U.S.	United States
USDOT	U.S. Department of Transportation
UV-B	ultraviolet rays
VC	volume to capacity
VOC	volatile organic compound
WSA	Water Supply Assessment

EXECUTIVE SUMMARY

S.1 INTRODUCTION

The Kaiser South Sacramento Medical Center Expansion Project (project) is proposed by Kaiser Foundation Health Plan, Inc. (project sponsor). The project site is located within an existing Medical Center campus (of approximately 48.5 acres) at 6600 Bruceville Road in the South Sacramento Community Plan area. The site is bordered to the north by retail and commercial offices, to the south and west by multi-family residential land uses and a childcare center, and to the east by State Route 99 (SR 99).

The proposed project would add seven structures totaling approximately 244,000 square feet to the project site, thereby increasing the entire Medical Center to approximately 793,500 square feet, as follows:

- An approximately 158,000-square-foot Hospital Tower (basement plus five levels above grade) south of the existing hospital building, containing 96 new medical surgery beds, 20 new intensive care beds, and 20 intensive care beds relocated from the existing hospital. Additionally, one existing medical surgery bed would be eliminated from the existing hospital, resulting in a total of 115 new hospital beds;
- A two-story, approximately 57,000-square-foot Outpatient Surgery Center (OSC) with a six-room surgery suite constructed west of the new Hospital Tower;
- A five-story, approximately 882-space parking structure on the north side of the campus along Bruceville Road. In addition, surface parking lots on the west side of the campus would be constructed to maintain City and project sponsor parking requirements;
- An addition to the Central Utility Plant consisting of a new single-story, approximately 6,000-square-foot chiller addition to support the hospital expansion;
- A single-story, approximately 10,000-square-foot Emergency Department (ED) addition east of the existing ED for a Trauma Center;
- A two-story, approximately 15,000-square-foot addition to outpatient services on the west side of the existing Medical Office Building (MOB) 1; and
- An emergency helicopter landing pad (Helipad) as part of the new trauma center.

The proposed Helipad would be constructed east of the proposed Trauma Center. The Helipad would be used to receive emergency (medevac) flights only and would likely receive no more than six emergency helicopter flights per month. Two potential flight paths would be used by incoming helicopters: (1) from the north, flying south above SR 99, over MOB 3, and then directly to the landing pad; and (2) from the south, flying north above SR 99, over Bruceville Road and then to the landing pad.

The project includes several additional site upgrades: the realignment of segments of the campus ring road, the addition of dedicated pick-up and drop-off zones, the addition of ingress and egress drives, and the improvement of on-site way-finding.

The City of Sacramento (City) has prepared this Environmental Impact Report (EIR) to examine the potential environmental impacts of the proposed project prior to making an informed, discretionary

decision on the development proposal. The EIR has been prepared in accordance with the California Environmental Quality Act (CEQA) and the *CEQA Guidelines*. It is not the purpose of this EIR to recommend either approval or denial of the project.

The project includes obtaining the following City entitlements:

- **Special Permit (Major) Modification** for the proposed project;
- **Special Permit** for Helipad;
- **Lot Line Adjustment** to abandon easements that are no longer used or needed;
- **Certification** of the Final EIR; and
- **Adoption** of the Mitigation Monitoring and Reporting Program (MMRP).

In addition, certain project components would be reviewed and permitted by other public agencies as follows:

- The proposed Central Utility Plant addition, ED addition, and Hospital Tower would be reviewed and permitted through the Office of Statewide Health Planning and Development (OSHPD).
- The proposed OSC would be reviewed and permitted by the City; however, the City would provide OSHPD with a letter certifying that the building was built per OSHPD 3 requirements.
- The proposed Helipad would require an Airspace Determination from the Federal Aviation Administration (FAA), and a Heliport Site Approval Permit from the California Department of Transportation (Caltrans), Division of Aeronautics; however, the Sacramento Area Council of Governments (SACOG) would first review the plans for consistency with the Airport Land Use Commission criteria regarding safety, noise and land use.

S.2 SUMMARY OF POTENTIAL IMPACTS

To determine the scope of this EIR, the City prepared and distributed an Initial Study and a Notice of Preparation (NOP) for the proposed project. The purpose of an Initial Study is to assist in the preparation of an EIR by focusing the EIR on the effects determined to be potentially significant, identifying the effects determined not to be significant, and explaining the reasons for those determinations. The purpose of an NOP is to solicit comments from public agencies and interested parties and to identify specific environmental issues that should be considered in the EIR.

The Initial Study and NOP for the project identified the following two environmental issues that were examined to determine whether the proposed project would produce potentially significant environmental impacts:

- Air Quality
- Transportation and Circulation

The conclusions of the EIR regarding each of these potentially significant impacts are presented in this Executive Summary. In addition, Table S-1 (at the end of the Executive Summary) summarizes each significant or potentially significant effect and the corresponding mitigation measure(s) proposed to

minimize or avoid significant impacts of the proposed project. The EIR concludes that, except for traffic impacts on SR 99, most of the project impacts would be mitigated to less than significant levels.

S.2.1 Air Quality

The EIR concludes that the construction and operation of the proposed project would have air quality impacts and that such impacts could be mitigated to a less than significant level.

Construction of the proposed project would generate emissions of particulate matter less than 10 microns in diameter (PM_{10}) and ozone precursors; however, implementation of Mitigation Measures 3.2-1a and 3.2-1b, which describe fugitive dust control measures and equipment standards, use and maintenance, would reduce these impacts to a less than significant level.

Operation of the proposed project would contribute to increased concentrations of ozone precursors; however, this would be a less than significant impact and no mitigation would be required. Although operation of the proposed project would increase traffic that would contribute to concentrations of carbon monoxide (CO) at busy roadways and intersections, this would also be a less than significant impact and no mitigation would be required. The proposed project would not significantly increase toxic air contaminants (TACs); alter air movements, moisture, or temperature; cause any change in climate; or create objectionable odors.

In addition, implementation of the proposed project would not result in cumulatively significant air quality impacts, and no related mitigation would be required.

S.2.3 Transportation and Circulation

The EIR concludes that the proposed project would have traffic impacts that are significant and unavoidable, as well as other impacts that would be reduced to a less than significant level with implementation of mitigation measures. The traffic analysis for the project studied fourteen intersections and found that two intersections would operate at an unacceptable level of service (LOS) with the proposed project:

- Bruceville Road/Kaiser Access
- Mack Road/Valley Hi Drive – La Mancha Way

In addition, the following intersections would operate at an unacceptable LOS with the proposed project under Year 2025 conditions:

- Cosumnes River Road/Bruceville Road
- Cosumnes River Road/SR 99 southbound ramps

Mitigation Measures 3.3-1, 3.3-2, 3.3-4 and 3.3-5 recommend installing a traffic signal at Bruceville Road/Kaiser Access, reconfiguring the eastbound Kaiser Access approach, adjusting the traffic signal phase timing at both the Mack Road/Valley Hi Drive – La Mancha Way and Cosumnes River Road/Bruceville Road intersections, and restriping the existing SR 99 southbound ramp, respectively. Implementation of these mitigation measures would reduce the project's traffic impacts to a less than signification level.

The proposed project would also add traffic to mainline SR 99, which is currently operating at an unacceptable LOS and is also expected to operate at an unacceptable LOS in the Year 2025. No feasible mitigation measures were identified that would reduce the impacts of the proposed project on SR 99; therefore, such project impacts would be significant and unavoidable.

The project would not affect existing or proposed bicycle facilities or pedestrian circulation within the project vicinity. The project would have a less than significant impact on transit facilities, because the transit trips generated by the project would be distributed among the existing transit services and there is sufficient capacity on these routes to accommodate project-related trips.

S.3 SUMMARY OF ALTERNATIVES EVALUATED

Chapter 4 of this EIR evaluates alternatives to the proposed project in accordance with the *CEQA Guidelines* Section 15126.6. The following alternatives were considered and analyzed in this EIR:

- No-Project Alternative
- Reduced-Intensity Alternative

S.3.1 No Project Alternative

Section 15126.6(e) of the *CEQA Guidelines* requires an EIR to analyze a no project alternative to allow decision-makers to compare the impacts of approving the project with the impacts of not approving the project. The No-Project Alternative would result in the Medical Center remaining at its current size and providing the same services.

Under this alternative, the environmental impacts of the project site would be less than those of the proposed project. However, use of the existing Medical Center would continue to increase as the community's population grows, and over time traffic impacts and subsequent air quality impacts could occur.

S.3.2 Reduced-Intensity Alternative

The Reduced-Intensity Alternative would reduce the number of new hospital beds on the project site by decreasing the height of the Hospital Tower by one floor. The reduced hospital tower would be approximately 131,000 square feet, with a total of 72 medical/surgery beds, ten new intensive care beds, and ten relocated intensive care beds. This represents a reduction of 17 percent of the proposed size of the Hospital Tower and 11 percent of the overall project. The OSC, ED addition, Helipad, and other proposed project elements would remain the same in order to meet the project objectives.

The Reduced-Intensity Alternative would generate fewer trips than the proposed project, which would have less impact on transportation and circulation than the proposed project; however, this impact would remain significant and unavoidable. In addition, operational air quality impacts from traffic on busy roadways and intersections would be reduced less than those of the proposed project.

S.3.3 Environmentally Superior Alternative

CEQA requires an EIR to identify the "environmentally superior alternative," which is the alternative that would result in the fewest or least-significant environmental impacts. Based on the alternatives analysis, the No-Project Alternative would be considered the environmentally superior alternative.

If the No-Project Alternative is identified as the environmentally superior alternative, then CEQA requires that another alternative be chosen as the environmentally superior alternative. Based on the alternatives analysis, the Reduced-Intensity Alternative would be considered the environmentally superior alternative. This alternative would result in reduced impacts on traffic and air quality compared to those of the proposed project; however, significant traffic impacts would occur, regardless of the size of the project. Also, the Reduced-Intensity Alternative would not meet the project's objectives to serve the needs of the growing South Sacramento community through the year 2018.

S.4 OTHER CEQA CONSIDERATIONS

Section 15126.2(b) of the *CEQA Guidelines* requires an EIR to "describe any significant impacts, including those that can be mitigated but not reduced to a level of insignificance. Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the project is being proposed, notwithstanding their effect, should be described."

Significant and unavoidable impacts, significant irreversible changes, and growth-inducing impacts of the proposed project are evaluated in Chapter 5 of this EIR. With implementation of the specified mitigation measures, the project's contribution to traffic and air quality impacts would be less than significant, except for impacts on SR 99, which cannot be feasibly mitigated and would be significant and unavoidable.

S.5 AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED

Pursuant to *CEQA Guidelines* Section 15123, this EIR acknowledges the areas of controversy and issues to be resolved that are known to the City of Sacramento and/or were raised during the EIR scoping process. Issues were identified during the NOP review period. Several comment letters were received from organizations and agencies in response to the NOP; these NOP comment letters are included in Appendix A. The concerns cited in the letters are addressed in the EIR, and are as follows:

- Phasing of construction (Chapter 2, Project Description)
- Air quality impacts triggering the need for a Traffic Management Plan (Section 3.2, Air Quality)
- Transit impacts (Section 3.3, Transportation and Circulation)
- Parking during construction (Section 3.3, Transportation and Circulation)
- Traffic Impact Study (Section 3.3, Transportation and Circulation)
- Refuge islands (Section 3.3, Transportation and Circulation)
- Enhancement of connections to public transportation (Section 3.3, Transportation and Circulation)
- Alternative sites (Chapter 4, Alternatives)

Other concerns cited in the NOP comment letters either were previously addressed in the Initial Study or would be addressed during the City Planning Commission review process.

S.6 MITIGATION AND MONITORING

CEQA requires public agencies to set up monitoring and reporting programs to ensure compliance with those mitigation measures that are adopted or made conditions of project approval to mitigate or avoid significant environmental effects identified in an EIR. A Mitigation Monitoring and Reporting Program (MMRP) incorporating the mitigation measures set forth in this document will be considered and acted

upon by City of Sacramento decision-makers, concurrent with adoption of the findings of this EIR and prior to a determination as to whether or not to approve the proposed project.

The project has incorporated into the project design the following measures to mitigate project impacts related to noise and cultural resources. These measures would become conditions of approval for the project.

S.6.1 Noise

To reduce the impact of construction noise, the City Building Division would monitor the implementation of the following mitigation measures during project construction:

10-1 All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers, to the satisfaction of the Building Division.

10-2 Stationary construction equipment shall be placed such that emitted noise is directed away from sensitive noise receivers, to the satisfaction of the Building Division.

10-3 Stockpiling and vehicle staging areas shall be located as far as practical from noise sensitive receptors during construction activities, to the satisfaction of the Building Division.

To attenuate potential long-term (operational) noise impacts on sensitive receptors from helicopter flights, mechanical equipment operation and truck deliveries, the proposed project has been redesigned to incorporate the following measures:

10-4 Electrical and mechanical equipment (i.e., ventilation and air conditioning units) shall be located as far away as is feasible from sensitive receptor areas. Additionally, the following shall be considered prior to installation: proper selection and sizing of equipment, installation of equipment with proper acoustical shielding, and incorporating parapets into the building design.

10-5 Loading docks within the project area shall be designed to have either a depressed (i.e., below-grade) loading dock area, an internal bay, or a wall to break the line of sight between noise-sensitive uses and loading operations. During the final site design process, an acoustical consultant shall determine whether operation of the loading docks would result in noise levels that exceed City standards at exterior on- or off-site sensitive uses. If it is determined that the design is not sufficient, proper noise attenuation mitigation measures shall be incorporated into the plans to be submitted by the project sponsor to the City for review and approval, prior to the issuance of building permits.

10-6 Helicopter flight paths shall follow busy roadways so that the road traffic masks the helicopter. Low-altitude flyovers shall be avoided, especially above residential property. The hospital shall ensure that patients who require sleep or are more sensitive to noise are located away from the side of the building facing the Helipad.

S.6.2 Cultural Resources

To reduce the impact from construction activities on unknown or undiscovered cultural resources, the construction manager would implement the following mitigation measures, as necessary:

14-1 If subsurface archaeological or historical remains are discovered during construction, work in the area shall stop immediately and a qualified archaeologist and a representative of the Native American Heritage Commission shall be consulted to develop, if necessary, further mitigation measures to reduce any archaeological impact to a less than significant level before construction continues.

14-2 If human burials are encountered, all work in the area shall stop immediately and the Sacramento County Coroner's office shall be notified. If the remains are determined to be Native American in origin, both the Native American Heritage Commission and any identified descendants shall be notified and recommendations for treatment solicited (CEQA Section 15064.5; Health and Safety Code Section 7050.5; and Public Resources Code Section 5097.94 and 5097.98).

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Table S-1. Summary of Impacts and Mitigation

Environmental Impacts	Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Air Quality			
Impact 3.2-1: Construction of the proposed project would generate emissions of particulate matter less than or equal to 10 microns in diameter (PM_{10}) and ozone precursors	Potentially Significant	**Mitigation Measure 3.2-1a:** To reduce fugitive dust emissions, in compliance with Rule 403 of the Sacramento Metropolitan Air Quality Management District (SMAQMD), the following mitigation measures would be implemented during construction: • All disturbed areas, including storage piles that are not being actively used for construction purposes, shall be effectively stabilized of dust emissions using water, a chemical stabilizer or suppressant, or vegetative ground cover; • All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or a chemical stabilizer or suppressant; • When materials are transported off-site, they shall be covered, effectively wetted to limit visible dust emissions, or maintained with at least 6 inches of freeboard space from the top of the container; • All operations shall limit or expeditiously remove the accumulation of project-generated mud or dirt from adjacent public streets at least once every 24 hours when operations are occurring; • Following the addition of materials to, or the removal of materials from, the surfaces of outdoor storage piles, the storage piles shall be effectively stabilized of fugitive dust emissions using sufficient water or a chemical stabilizer or suppressant; • On-site vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph); • Wheel washers shall be installed for all trucks and equipment	Less Than Significant

Table S-1. Summary of Impacts and Mitigation

Environmental Impacts	Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		exiting from unpaved areas or wheels shall be washed manually to remove accumulated dirt prior to leaving the site; • Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from adjacent project areas with a slope greater than 1 percent; • Excavation and grading activities shall be suspended when winds exceed 20 mph; and • The extent of areas simultaneously subject to excavation and grading shall be limited, wherever possible, to the minimum area feasible.	
		Mitigation Measure 3.2-1b: To reduce nitrogen oxides (NO_X) and visible emissions from heavy-duty diesel equipment, the following measures would be implemented prior to and during construction: • The project shall provide a plan for approval by the City of Sacramento and the SMAQMD demonstrating that the heavy-duty (≥50 horsepower) off-road vehicles to be used in the construction project, including owned, leased, and subcontractor vehicles, would achieve project-wide fleet averages of 20-percent NO_X reduction and 45-percent particulate reduction compared to the most recent California Air Resources Board (CARB) fleet average at the time of construction; and the project representative shall submit a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that would be used an aggregate of 40 or more hours during any portion of the construction project. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not	

Table S-1. Summary of Impacts and Mitigation

Environmental Impacts	Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		be required for any 30-day period in which no construction operations occur. At least 48 hours prior to the use of subject heavy-duty off-road equipment, the project sponsor shall provide the City and SMAQMD with the anticipated construction time line (including start date), and name and telephone number of the project manager and on-site foreman. Acceptable options for reducing emissions include the use of late-model engines, low-emission diesel products, alternative fuels, particulate matter traps, engine retrofit technology, after-treatment products, and/or other options as they become available. • The project shall ensure that emissions from off-road diesel-powered equipment used on the project site do not exceed 40-percent opacity for more than three minutes in any one hour. Any equipment found to exceed 40-percent opacity (or Ringlemann 2.0) shall be repaired immediately, and the City and SMAQMD shall be notified within 48 hours of identification of noncompliant equipment. A visual survey of all in-operation equipment shall be made at least weekly, and a monthly summary of visual survey results shall be submitted throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which no construction operations occur. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey. The City and SMAQMD and/or other officials may conduct periodic site inspections to determine compliance. The above recommendations shall not supersede other SMAQMD or state rules and regulations. • The primary contractor shall be responsible for ensuring that all	

Table S-1. Summary of Impacts and Mitigation

Environmental Impacts	Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		heavy-duty equipment is properly tuned and maintained, in accordance with manufacturers' specifications.	
Impact 3.2-2: Operation of the proposed project would contribute to increased concentrations of ozone precursors.	Less Than Significant	No mitigation is required.	Less Than Significant
Impact 3.2-3: Operation of the proposed project would increase traffic, which would contribute to concentrations of carbon monoxide (CO) at busy roadways and intersections.	Less Than Significant	No mitigation is required.	Less Than Significant
Impact 3.2-4: The proposed project would not significantly increase toxic air contaminants (TACs).	Less Than Significant	No mitigation is required.	Less Than Significant
Impact 3.2-5: The proposed project would not alter air movements, moisture, or temperature, or cause any change in climate.	Less Than Significant	No mitigation is required.	Less Than Significant
Impact 3.2-6: The proposed project would not create objectionable odors.	Less Than Significant	No mitigation is required.	Less Than Significant
Transportation and Circulation			
Impact 3.3-1: Bruceville Road/Kaiser Access – Baseline Plus-Project Conditions – The addition of traffic associated with the proposed project would degrade the LOS at this intersection from LOS A to LOS F during the AM peak hour.	Potentially Significant	**Mitigation Measure 3.3-1:** Prior to occupancy, a traffic signal shall be installed at the Bruceville Road/Kaiser Access intersection and the eastbound (Kaiser Access) approach shall be reconfigured to include a right-turn lane and a left-turn lane.	Less Than Significant
Impact 3.3-2: Mack Road/Valley Hi Drive - La Mancha Way – Baseline Plus-Project Conditions – The addition of traffic associated with the proposed project would degrade the LOS at this intersection from LOS C to LOS D during the PM peak hour.	Potentially Significant	**Mitigation Measure 3.3-2:** Prior to occupancy, the project sponsor shall pay the City of Sacramento to adjust the PM peak-hour traffic signal phase timing (maximum green-light time) on the northbound, southbound, and eastbound approach left-turn and through movements to match projected traffic demands.	Less Than Significant
Impact 3.3-3: Bruceville Road/Kaiser Access – Year 2025	Potentially Significant	Prior to occupancy, the project sponsor shall implement Mitigation	Less Than Significant

Table S-1. Summary of Impacts and Mitigation

Environmental Impacts	Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Plus-Project Conditions – The addition of traffic associated with the proposed project would degrade the LOS at this intersection from LOS A to LOS F during the AM peak hour and from LOS C to LOS D during the PM peak-hour.		Measure 3.3-1.	
Impact 3.3-4: Cosumnes River Boulevard/Bruceville Road – Year 2025 Plus-Project Conditions – The addition of traffic associated with the proposed project would add more than 5 seconds of delay to the PM peak-hour operations (LOS F).	Potentially Significant	**Mitigation Measure 3.3-4:** Prior to occupancy, the project sponsor shall pay the City of Sacramento to adjust the PM peak-hour traffic signal timing by increasing the phase time (maximum green-light time) on the eastbound, westbound, and southbound approach through and left-turn movements, and decreasing the phase time on the northbound approach movements (maximum green-light time) to match projected traffic demands.	Less Than Significant
Impact 3.3-5: Cosumnes River Boulevard/SR 99 Southbound Off-Ramp – Year 2025 Plus-Project Conditions – The addition of traffic associated with the proposed project would add more than 5 seconds of delay to the AM peak-hour traffic intersection operations (LOS F).	Potentially Significant	**Mitigation Measure 3.3-5:** Prior to occupancy, the existing SR 99 southbound off-ramp to Cosumnes River Boulevard approach shall be restriped to allow for a left-turn lane, shared left-turn/right-turn lane, and a right-turn lane, and the cycle length at the intersection shall be increased by ten seconds during the PM peak hour.	Less Than Significant
Impact 3.3-6: SR 99 North of Mack Road – Baseline Plus-Project Conditions – The proposed project would add traffic to mainline SR 99, which is operating at an unacceptable LOS F during the AM peak hour.	Potentially Significant	No feasible mitigation measures were identified.	Significant and Unavoidable
Impact 3.3-7: SR 99 South of Mack Road – Baseline Plus-Project Conditions – The proposed project would add traffic to mainline SR 99, which is operating at an unacceptable LOS F during the PM peak-hour.	Potentially Significant	No feasible mitigation measures were identified.	Significant and Unavoidable
Impact 3.3-8: SR 99 North of Mack Road – Year 2025 Plus-Project Conditions – The proposed project would add traffic to mainline SR 99, which is operating at an unacceptable LOS F during the AM peak-hour.	Potentially Significant	No feasible mitigation measures were identified.	Significant and Unavoidable

Table S-1. Summary of Impacts and Mitigation

Environmental Impacts	Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 3.3-9: SR 99 South of Mack Road – Year 2025 Plus-Project Conditions – The proposed project would add traffic to southbound mainline SR 99, which is operating at an unacceptable LOS F during the PM peak-hour.	Potentially Significant	No feasible mitigation measures were identified.	Significant and Unavoidable

CHAPTER 1 – INTRODUCTION

1.1 BACKGROUND

This Environmental Impact Report (EIR) has been prepared to analyze the environmental effects of the proposed Kaiser South Sacramento Medical Center Expansion (project) in Sacramento, California, pursuant to the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] Sections 21000-21178), and the *CEQA Guidelines* (California Code of Regulations [CCR] Title 14, Chapter 3). The project is proposed by Kaiser Foundation Health Plan, Inc. (project sponsor).

CEQA requires all public agencies to consider the environmental consequences of projects for which they have discretionary authority. The public agency with the principal responsibility for carrying out or approving a project is the "lead agency." CEQA requires the lead agency to prepare an EIR if there is substantial evidence, in light of the whole record, that a project may have a significant effect on the environment. A significant effect is defined in CEQA as a substantial and adverse physical change in the environment. The City of Sacramento (City) is the lead agency for the proposed project. .

1.2 PURPOSE OF THE EIR

According to Section 15121 of the *CEQA Guidelines*, an EIR is an informational document that is written to inform public agency decision-makers and the public of the significant environmental effects of a proposed project. The purpose of an EIR is to:

- Analyze the environmental effects of a proposed project;
- Indicate mitigation measures to avoid or minimize the potentially significant environmental effects of a proposed project; and
- Identify alternatives to the project that would avoid or substantially lessen the significant effects of the project.

Environmental effects that are addressed in an EIR consist of the significant, adverse effects of the project across a spectrum of environmental topics; the growth-inducing effects of the project; and the significant cumulative effects of past, present, and reasonably anticipated future projects.

It is not the purpose of an EIR to recommend either approval or denial of a project. Rather, the purpose is to provide relevant information that will assist decision-makers in their decision to approve or deny a project. The lead agency may chose to approve a project that would result in significant environmental effects that cannot be mitigated. If this occurs, the lead agency is required to prepare a "Statement of Overriding Considerations," pursuant to Section 15093 of the *CEQA Guidelines*.

1.3 USE OF THE EIR

The EIR prepared for the proposed project is the primary environmental document for the project. The EIR is anticipated to be the definitive environmental document for project implementation, including expansion of the Medical Center and any infrastructure improvements needed to provide for it. This document is a Project EIR, which is appropriate because it analyzes the environmental effects of a specific project and contains a detailed level of information regarding development and construction of the proposed uses.

1.4 SCOPE OF THE EIR

As provided for in Sections 15063 and 15126 of the *CEQA Guidelines*, the focus of this EIR is limited to specific issues and concerns identified by the City as causing potentially significant effects on the environment.

1.4.1 Initial Study and Notice of Preparation

To determine the scope of this EIR, the City prepared and distributed an Initial Study and a Notice of Preparation (NOP) for the proposed project. The purpose of an Initial Study is to assist in the preparation of an EIR by focusing the EIR on the effects determined to be potentially significant, identifying the effects determined not to be significant, and explaining the reasons for those determinations. Refer to Section 1.7 (Effects Not Found To Be Significant).

An NOP is a document that is sent by the lead agency to notify public agencies and interested parties that the lead agency plans to prepare an EIR for a proposed project. The purpose of an NOP is to solicit comments from public agencies and interested parties, and to identify specific environmental issues that should be considered in the EIR.

The Initial Study and NOP for the proposed project identified the following issues to be addressed in this EIR:

- Air Quality
- Transportation and Circulation

1.4.2 Public Review Period

The Initial Study and NOP for the proposed project were sent to trustee and responsible agencies, members of the public, other interested parties, and the California State Clearinghouse (SCH) (SCH Number 2005102127) on October 28, 2005. The 30-day review period for the Initial Study and NOP ended on November 28, 2005. During the review period, public agencies and members of the public had the opportunity to respond to the NOP to identify issues of special concern and to suggest additional issues to be considered in the EIR. The Initial Study, NOP, and comments received from public agencies and members of the public are contained in Appendix A (Notice of Preparation, Initial Study and Public Comments).

Comment letters were received from state and local agencies and from several members of the public. Issues mentioned in the comment letters have been addressed in the EIR as follows:

- Phasing of construction (Chapter 2, Project Description)
- Air quality impacts triggering the need for a Traffic Management Plan (Section 3.2, Air Quality)
- Transit impacts (Section 3.3, Transportation and Circulation)
- Parking during construction (Section 3.3, Transportation and Circulation)
- Traffic Impact Study (Section 3.3, Transportation and Circulation)
- Refuge islands (Section 3.3, Transportation and Circulation)

- Enhancement of connections to public transportation (Section 3.3, Transportation and Circulation)
- Alternative sites (Chapter 4, Alternatives)

Other issues raised in the comment letters were addressed in the Initial Study, and have been excluded from further analysis in the EIR. The issues are as follow, and discussion of each issue is provided in this EIR in the section noted in parentheses:

- National Pollution Discharge Elimination System (NPDES) Permit (Section 1.7.4, Water)
- Construction and post-construction best management practices (BMPs) (Section 1.7.4, Water)
- Dewatering permit (Section 1.7.4, Water)
- Construction hours (Section 1.7.10, Noise)
- Noise impacts of the proposed helipad (Section 1.7.10, Noise)
- Proposed helicopter flight paths (Section 1.7.10, Noise)
- Sewer impacts (Section 1.7.11, Public Utilities)

The proposed project's potential impacts on hydrology, biology, noise, and public utilities were determined to be less than significant with mitigation measures, and the project has been redesigned to incorporate those measures (refer to Chapter 2, Project Description). The proposed project would not require a Section 401 permit because it would not discharge into navigable waters of the United States (U.S).

In addition, the California Department of Transportation (Caltrans) suggested that the project include direct and lighted pedestrian access throughout the hospital areas and recommended that the design of transit stops incorporate Americans with Disabilities Act (ADA) features. These issues would be addressed during the City Planning Commission review process.

1.4.3 Contents of Draft EIR

All of the environmental issues determined in the Initial Study to have potentially significant impacts and the issues identified during the public review period for inclusion in the EIR have been incorporated into this EIR. For each environmental issue, the EIR describes the environmental setting (current conditions), then discusses and analyzes the potential related impacts that could be caused by project implementation.

For each potentially significant impact, the EIR specifies ways to mitigate the impact, including implementation of one or a combination of the following mitigation measures:

- Existing goals, objectives, policies and programs of the *City of Sacramento General Plan (General Plan)* and the *South Sacramento Community Plan* (SSCP);
- Applicable mitigation measures of the *Draft and Final EIR for the General Plan*; and/or
- Project-specific mitigation measures designed to mitigate one or more project impacts, as described in this EIR.

The project sponsor must implement all mitigation measures identified in the EIR or their environmental equivalent. "Environmental equivalent" means any mitigation measure and/or timing thereof, subject to the approval of the City, that, compared to the mitigation measure, would have the same or superior result

and would have the same or superior effect on the environment. The City Development Services Department, Environmental Planning Services, in conjunction with any appropriate agencies or other City departments, must determine the adequacy of any proposed environmental equivalent. Any costs associated with information or environmental documentation required to determine environmental equivalency is borne by the project sponsor. As with other mitigation measures, the City would ensure compliance with an environmental equivalent through the mitigation monitoring process.

1.5 ORGANIZATION OF THE EIR

This EIR has been organized into the following sections:

Executive Summary: Summarizes the proposed project, required actions by the City and other agencies, environmental setting, potential impacts of the project, mitigation measures identified to reduce or eliminate significant impacts, and alternatives to the proposed project.

Chapter 1, Introduction: Provides an introduction and overview that describes the proposed project and the purpose of the EIR, summarizes the EIR review and certification process, identifies key areas of environmental concern, and outlines the EIR process.

Chapter 2, Project Description: Presents the project objectives, describes the proposed project in detail (including project phasing), specifies the actions required to implement the project, and identifies the mitigation measures that have been incorporated into the project based on analysis in the Initial Study.

Chapter 3, Existing Conditions, Environmental Impacts, and Mitigation Measures: Describes the existing conditions, analyzes the proposed project's potential environmental impacts (including any cumulative impacts), and specifies measures to mitigate the identified impacts.

Chapter 4, Alternatives: Evaluates a reasonable range of project alternatives (alternative ways of meeting the project objectives) that would reduce or avoid environmental impacts, including the No-Project Alternative.

Chapter 5, Other CEQA Considerations: Discusses significant and unavoidable impacts, significant irreversible impacts, and growth-inducing impacts of the proposed project.

Chapter 6, Report Preparation Personnel: Lists preparers of the EIR, including City staff and consultants.

Chapter 7, References Cited: Lists sources of information used in the preparation of the EIR.

Appendices: Includes the Initial Study and NOP for the EIR, comments received in response to the Initial Study and NOP, and background technical material regarding air quality and traffic analyses.

1.6 TERMINOLOGY USED IN THE EIR

This EIR uses the following terminology to denote the significance of environmental impacts of the proposed project:

- A "beneficial impact" is an environmental impact that would be a positive contribution or improvement to the physical conditions that exist in the area affected by the project.
- An "environmental impact" is a direct or indirect effect that would be caused by the project that constitutes a physical change to the existing natural or man-made conditions within the area affected by the project.
- "No impact" is the lack of any environmental impact, and no mitigation is required.
- A "less than significant" impact or an impact that is "not significant" is an environmental impact that would cause no substantial adverse change in the environment; as such, no mitigation is required.
- A "potentially significant" or "significant" impact is an environmental impact that could or would cause a substantial adverse change in the environment. In such a case, an impact has been identified that, although potentially significant, can be avoided or reduced to less than significant levels through mitigation. Such mitigation may be either project design features that have been incorporated into the project or existing requirements, such as City codes and ordinances, engineering and design requirements (e.g., the Uniform Building Code), and standard regulations set by regional, state and federal agencies.
- A "significant and unavoidable" impact is an environmental impact that could or would cause a substantial adverse change in the environment and cannot be avoided if the project is implemented; mitigation may be recommended, but would not reduce the impact to a less than significant level.
- "Mitigation measures" are defined in *CEQA Guidelines* Section 15370 as:
  - Avoiding the impact altogether by not taking a certain action or parts of an action;
  - Minimizing the impact by limiting the degree or magnitude of the action and its implementation;
  - Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
  - Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and
  - Compensating for the impact by replacing or providing substitute resources or environments.

1.7 EFFECTS NOT FOUND TO BE SIGNIFICANT

Through the Initial Study and NOP scoping process, the City determined that the project would have no significant impact on certain environmental issues and has excluded these issues from further analysis in this EIR. As described below, these excluded issues are land use and planning; population and housing; seismicity, soils and geology; water; biological resources; energy; hazards; noise; public services; utilities; aesthetics, light and glare; cultural resources; and recreation.

1.7.1 Land Use and Planning

The project site has been developed for over 20 years with a Medical Center and is surrounded by other urban uses. The proposed project would be consistent with the *General Plan* and SSCP land use designations of hospital use, and there is no agricultural land associated with the project site. The proposed project would result in less than significant impacts on the present or planned use of the project area and agricultural resources or operations.

1.7.2 Population and Housing

The proposed project would expand an existing Medical Center in a developed area consistent with the *General Plan* and SSCP. The project would help serve a growing residential population, but would not directly or indirectly induce substantial growth on its own. In addition, there is no existing housing that would be displaced by the project. Therefore, less than significant impacts would occur.

1.7.3 Seismicity, Soils and Geology

The proposed project would result in the exposure of people to geologic or seismic hazards. However, all structures would be constructed to current Uniform Building Code (UBC) standards, which would minimize the potential for damage due to ground shaking. The project site has already been developed and, therefore, would involve minimal grading and compaction of the site.

Some erosion could occur as a result of site grading. Soils are especially prone to erosion from stormwater runoff that occurs during or immediately after construction. All grading and erosion control would be conducted in compliance with the requirements of Chapter 15.88 (Grading, Erosion and Sediment Control) of the Sacramento City Code. This chapter requires a project sponsor to show methods to control erosion and sediment during project operation on the project improvement plans. These plans are also required to show methods to control urban runoff pollution from the project site during construction.

According to the project engineer, test borings up to 60 feet in depth did not encounter groundwater, and historical information indicates that groundwater is between 53 and 66 feet deep.[1] Since groundwater is significantly below the finished floor elevation and grade level of the proposed project, construction would not require groundwater pumping or dewatering. There are no recognized unique geologic features or physical features that would be impacted by construction and operation of the proposed Medical Center expansion.

Therefore, project-related impacts on area soils and earth conditions would be less than significant.

1.7.4 Water

The proposed project would not change the existing water absorption rate, drainage pattern, or rate and amount of surface runoff because the area of impervious surface on the site would not change significantly. The project site currently has an on-site surface drainage system consisting of bioswales and storm drains that connect to the City's storm drain system. The project proposes an on-site detention system to capture stormwater and treat it before it enters the City's storm drain system. The system would consist of several bioswales and a City-approved water quality vault below the landscape area, between the proposed parking structure and Bruceville Road on the northeast corner of the project site.

Due to the location of the project site in Zone X as designated by the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), implementation of the project would not expose people and/or property to water-related hazards such as flooding.

[1] David A. Wilson, Division Manager – Site Development, Mark Thomas & Company, Inc., E-mail communication to Mike Monson, Project Director, Lionakis Beaumont Design Group, Inc., October 18, 2005.

Project improvement plans would be required to comply with the City's Grading, Erosion, and Sediment Control Ordinance (Chapter 15.88). Additionally, since the project site is over one acre, the project sponsor would be required to comply with the State's National Pollution Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction Activity. To comply with the NPDES Permit, the project sponsor would need to file a Notice of Intent with the State Water Resources Control Board and prepare a Stormwater Pollution Prevention Plan (SWPPP) prior to construction. The SWPPP must include BMPs. The bioswales and underground vault are considered BMPs because they would filter the stormwater before it enters the City's storm drainage system.

The proposed project would not change the current, course or direction of water movements because the project site is currently paved and covered with structures and does not contain a stream or river, although a channelized creek runs through the project site between Parking Lots 5 and 8.

The project site is entirely developed and covered with impervious surface. The proposed project would not change the quantity of groundwater by directly adding or withdrawing water, intercepting an aquifer or affecting the groundwater recharge capacity because the project would not change the total amount of paved surface on the site. In addition, excavation for the proposed project would not reach the groundwater table during construction, and dewatering would not be required. Given that the City is an urbanized area and largely covered in impervious surfaces, groundwater recharge to the local aquifers is through open space land uses surrounding the City and from the American and Sacramento Rivers. The proposed project would not alter the direction or rate of flow of groundwater because the site is currently paved and the project would not change the amount of impervious surface. The proposed project would not affect groundwater quality because the site conditions that affect groundwater quality, such as pollutants filtering into the groundwater from the surface, would not change after project implementation.

The proposed project would be served through the City's water supply system, which relies entirely on Sacramento and American River water. The proposed project would not use groundwater resources during project operation.

Based on the above discussion, the proposed project would have less than significant impacts on water.

1.7.5 Biological Resources

The project site is completely developed with minimal landscaping and located in an urbanized area. Vegetation on the site consists of turf areas, ornamental shrubs, and over 1,100 mostly non-native ornamental trees, such as beech, oak, alder and Japanese hackberry. The proposed project would require the removal of some street trees, which would require compliance with the City's Tree Preservation Ordinance.

A search of the California Natural Diversity Database identified 17 special-status plant and wildlife species occurring within the Florin, California 7.5-minute topographic quadrangle, which includes the project site. However, all of the wildlife species have specific habitat requirements that are not present on the project site. Because the site is developed, it provides no forging habitat for any of the birds or any nesting habitat for borrowing owls. The nearest occurrence of Swainson's hawk is five miles from the project site. Given the absence of forging habitat and the high disturbance associated with the urban setting, it is unlikely that the large trees on the site could serve as nesting sites for Swainson's hawk.

Therefore, the proposed project would have a less than significant impact on endangered, threatened or rare species or their habitat, wetlands or Heritage Trees.

1.7.6 Energy

The project would consume fossil fuels during construction. All construction equipment would be maintained and tuned at the intervals recommended by the manufacturers to ensure efficient use of fuel. However, construction activities related to the proposed project would result in the irretrievable commitment of nonrenewable energy resources, primarily in the form of fossil fuels, natural gas, and gasoline for automobiles and construction equipment.

The proposed project would require increased energy to operate the additional hospital facilities. However, the proposed project would include energy-efficient lighting and other energy conservation measures and would construct all structures with up-to-date energy-saving equipment. Lighting conservation techniques used in new construction include installation of occupancy sensors to automatically turn off lights when not in use, lighting reflectors, electronic ballasts, and energy-efficient lamps. In addition, compliance with all applicable building codes, planning policies and standard conservation features would ensure that all natural resources are conserved to the maximum extent possible.

Electricity for the proposed project would be provided by the Sacramento Municipal Utility District (SMUD). SMUD has indicated that there would be sufficient capacity to supply the project and no new source of energy would be required.[2] Also, the 4,000-square-foot chiller addition to the Central Utility Plant would support the project's emergency energy needs.

Pacific Gas and Electric Company (PG&E) has indicated that its existing facilities in the area could adequately serve the proposed project and that no new natural gas supplies would need to be obtained.[3]

Although resources would be permanently and continually consumed by the proposed project, the amount and rate of consumption of these resources would not result in the unnecessary, inefficient or wasteful use of energy. Therefore, the proposed project's impact on energy resources would be less than significant.

1.7.7 Hazards

As a medical facility, the Kaiser South Sacramento Medical Center currently generates biohazards and minor amounts of toxic substances. Current procedures for disposal of medical waste include (1) sterilization of infectious and hazardous waste and incineration off-site; (2) holding radioactive waste on-site to decay or transporting to an appropriate facility; and (3) transport of trash, including sterilized waste, to the City of Sacramento's Kiefer Landfill. The Medical Center is currently in compliance with all regulatory agency requirements for the handling of hazardous materials, such as the requirements of the California Department of Toxic Substances Control (DTSC), California Occupational Safety and Health Administration (CalOSHA), Caltrans, Federal Occupational Safety and Health Administration (OSHA), National Institute of Health (NIH), and City of Sacramento Fire and Police Departments.

[2] Richard Ramirez, Sacramento Municipal Utility District, personal communication, October 20, 2005.

[3] Dwayne LaMonde, Pacific Gas and Electric Company, personal communication, October 20, 2005.

Additional waste created by the proposed project would be disposed of using the same established procedures, and would be covered by the facility's current hazardous waste disposal permits.

Hazardous materials would be used in varying amounts during construction and occupancy of the proposed project. Products and materials typically used during construction that could contain hazardous substances include paints, solvents, cements, glues and fuels. Exposure of construction workers, employees or visitors to hazardous materials could occur through improper handling or use of hazardous materials or hazardous waste during construction or occupancy of the proposed project; during a transportation accident; environmentally unsound disposal methods; or by fire, explosion or other emergency.

Construction workers and future visitors and employees could be exposed to hazards associated with an accidental release of hazardous material that could result in adverse health effects. Hazardous materials that could be present during building occupancy include the products previously listed above, based on the nature of the proposed project. However, all allowable uses would be subject to City and state code requirements, as necessary, which would ensure compliance with applicable permits and inspections.

Hazardous materials regulations, codified in Titles 8, 22, and 26 of the CCR and in their enabling legislation set forth in Chapter 6.95 of the California Health and Safety Code, were established by the state to ensure compliance with federal regulations to reduce the risk to human health and the environment from the routine use of hazardous substances. These regulations must be implemented by employers and businesses, as appropriate, and are monitored by the state (e.g., Cal OSHA in the workplace or DTSC for hazardous waste) and/or local jurisdictions (e.g., the City of Sacramento Fire Department and the Sacramento County Environmental Management Department [SCEMD]).

By ensuring that the Medical Center would comply with the above regulations, the City would reduce potential impacts of accidental release of hazardous materials during occupancy of the proposed project that would increase risk of exposure to hazardous materials, and would reduce the potential for an increased demand for emergency response. This would be accomplished by ensuring that regulated activities (health and emergency care, medical offices, etc.) are managed in accordance with applicable regulations such as Hazardous Materials Release Plans and Inventories, the California Accidental Release Prevention Program, and the Hazardous Material Management Plans and Hazardous Material Inventory Statements required by the California Uniform Fire Code.

Project compliance with Title 26, Division 6, of the CCR, which would be monitored by the City, would reduce potential impacts of an accidental release during construction or occupancy of the project site and would reduce the potential for an increased demand for incident emergency response. Project compliance with this regulation would ensure that hospital facilities that use or store hazardous materials adhere to regulations designed to prevent leakage and spills of material in transit and provide detailed information to accident clean-up crews.

Workplace regulations addressing the use, storage and disposal of hazardous materials in Title 8 of the CCR apply to medical care facilities, businesses and public facilities in and adjacent to the project site. Project compliance with these regulations would be monitored by the City of Sacramento Fire Department and the SCEMD when they inspect flammable and hazardous materials storage. Other mechanisms in place to enforce Title 8 regulations are compliance audits and reporting to local and state agencies. Implementation of the workplace regulations would further reduce the potential for hazardous materials release.

Implementation of Title 49, Parts 171-180, of the Code of Federal Regulations would reduce any impacts associated with the potential for accidental release during construction or occupancy of the proposed project or by transporters delivering hazardous materials to or picking up hazardous waste from the project site. These regulations establish standards by which hazardous materials are currently transported, within and adjacent to the project site. Where transport of these materials occurs on roads, the California Highway Patrol is the responsible agency for enforcement of regulations.

Implementation of and compliance with applicable federal and state laws and regulations that are administered and enforced by the SCEMD and City of Sacramento Fire Department (local agency that implements applicable hazardous materials-related sections of the Uniform Fire Code and UBC) would ensure that impacts associated with the routine use, storage and transportation of hazardous materials in the proposed project would be less than significant.

The proposed expansion of the Medical Center would not interfere with existing emergency evacuation plans. Given that the project site is completely developed, it is unlikely that the proposed project would expose people to existing sources of potential health hazards. The project site is currently developed with landscaping that poses minimal fire hazards, and is not located in a high fire hazard area.

Therefore, the proposed project would result in less than significant impacts related to hazards.

1.7.8 Noise

Short Term

Construction of the proposed project would generate short-term noise impacts. However, Section 8.68.080 of the Sacramento Municipal Code exempts noise sources from construction-related activities between 7:00 a.m. and 6:00 p.m. Monday through Saturday, and between 9:00 a.m. and 6:00 p.m. on Sunday.

Although construction noise is exempt from the City's Noise Ordinance, as a hospital, the project site is a sensitive receptor, and mitigation measures would be implemented to ensure that proper noise attenuation of potential severe noise is provided on-site and to adjacent sensitive receptors (residences).

Long Term

Under Sacramento Municipal Code Section 8.68.080, any mechanical device, apparatus or equipment related to or connected with emergency activities or emergency work are exempt from the provisions of the City's Noise Ordinance. Therefore, operational noise generated by the Medical Center's ED, such as ambulances, would be exempt. The proposed project would increase traffic along surrounding roadways, thereby potentially increasing noise levels within the area. However, such potential increased noise would increase ambient noise by only 0.3 A-weighted decibels (dB[A]) or less, which would be a less than significant impact. The project sponsor has construction standards for its facilities, such as dual-pane windows, that would reduce long-term noise impacts on its patients from increased vehicular traffic. Other operational noise on the project site would be created by stationary sources, such as air conditioning equipment, and would potentially impact the adjacent residential structures.

The proposed Helipad would be constructed east of the proposed Trauma Center. The Helipad would be used to receive emergency (medevac) flights only and would likely receive no more than six emergency

helicopter flights per month. Two potential flight paths would be used by incoming helicopters: (1) from the north, flying south above SR 99, over MOB 3, and then directly to the landing pad; and (2) from the south, flying north above SR 99, over Bruceville Road and then to the landing pad.

The Acoustics & Vibration Group prepared a noise study (December 8, 2004) to estimate the potential long-term noise impacts of the proposed Helipad. The noise study examined existing noise levels on the project site and in the off-site sensitive receptor areas, and calculated the potential for noise increases due to helicopter flights. The off-site current average Equivalent Noise Level (L_{eq}) sound levels were measured at outdoor activity areas of the multifamily housing and playground of the nearby child care center to be approximately 49 to 55 dB(A). The existing on-site background sound levels at the hospital were measured at approximately 57 dB(A).

The Acoustics & Vibration Group assumed that helicopter events would typically last one to two minutes each and would be either flyovers or hovering maneuvers around the hospital. The City's Noise Element sets a goal for the Community Noise Equivalent Level (CNEL) or day-night average (L_{dn}) sound levels at school play areas and in residential outdoor activity areas of 65 decibels (dB) or less from aircraft. Calculating a worst-case scenario of one daytime and one nighttime helicopter flight to the Helipad, the projected on-site sound levels near the landing pad would increase to 66 dB(A) and off-site sound levels would increase to 55 to 58 dB(A). Although the City's Noise Element does not specify a goal for exterior hospital sound levels, the project sponsor has construction standards for its facilities, such as double-paned glass, which would reduce the long-term noise impacts on its patients from increased vehicular traffic and the helicopter events.

The impact from helicopter activity when viewed as individual events may differ from the daily average. Helicopters produce a substantial amount of low frequency energy that could be heard inside the nearby residences during nighttime hours. Though unlikely, sleep disturbance is possible from the Sound Exposure Level (SEL) created by a helicopter near the surrounding neighborhood. The disturbance would be similar to that by a loud truck or motorcycle passing by on nearby Wyndham Drive, and the level of disturbance depends on many factors, including sensitivity of the individual to noise during sleep. Hospital rooms that are near the proposed Helipad, however, could experience high enough SEL values to disturb the sleep of some patients.

As described in Chapter 2 (Project Description), the proposed project has incorporated mitigation measures to reduce noise impacts to a less than significant level.

1.7.9 Public Services

The proposed project would include all features required by City code to ensure occupant safety in the case of a fire, such as fire department equipment storage rooms, fire suppression systems, automatic sprinklers, smoke detection systems, and fire separation doors. Emergency exits would be located on the south and west sides of the OSC, on the south and east sides of the Hospital Tower with connections to the exits in the existing hospital, and on the east side of the ED.

While the proposed project would increase the demand for fire protection services, because the project would include fire protection features required by the City, it would not create an inordinate demand for protection services such that new or altered facilities would be required. In addition, the proposed project would be required to pay all applicable City fees toward the provision of fire protection services to meet demands created by the project.

The project site would be served by the City of Sacramento Police Department (SPD). The addition of 115 hospital beds would not increase the demand for police services in the South Sacramento area. The proposed project would not require changes to patrols in the area, nor would it require the construction of a new police station or expansion of an existing station.

The proposed project would also not affect existing schools, nor require any new school facilities.

Given that the proposed project would be consistent with the land use designation of the *General Plan* and SSCP, the project would result in a less than significant impact on public services.

1.7.10 Utilities

The project would not result in the need for new communications systems. According to the City Department of Utilities, the project would not result in significant impacts on existing local or regional water supply facilities, or the need for any new major local or regional water treatment facilities.[4] The City has enough water to supply the site; therefore, water line connections at the project site would not affect existing water system capacity. However, the project may not have sufficient pressure for water to reach the top floors of the proposed Hospital Tower, and an on-site fire pumper may be required. Prior to issuance of building permits, the City would require that the project demonstrate sufficient pressure to all floors. Therefore, the proposed project's impact on water supply and treatment would be less than significant.

The Sacramento Regional County Sanitation District (CSD-1) estimates that the proposed project would generate an average sewage flow of 0.2 million gallons per day, which is half of the design capacity of the site.[5] Thus, there would be sufficient sewer capacity for the proposed project. The project would not result in the need for new sewer systems or supplies, or substantial alterations to existing sewer system, and less than significant impacts would result.

The project site is completely developed, predominantly covered by impervious surface, and has bioswales and an on-site surface drainage system that connect to the City's storm drain system by means of a storm drain service tap. The City has also completed a new detention basin to the north of the site that is sufficient to receive drainage from the site. Given that the proposed project would pave more than one acre, the Department of Utilities would require on-site treatment in a detention system, such as a swale or underground vault. The project proposes an underground detention system that would meet the City's stormwater detention requirements. Therefore, the proposed project's impact on stormwater drainage would be less than significant.

The project would comply with the City's requirements for solid waste recycling and would, therefore, reduce the demands on the City's landfills, resulting in a less than significant impact on solid waste disposal.

[4] Inthira Southiyanon, City of Sacramento Department of Utilities, Water Services, personal communication, August 24, 2005.

[5] Wendy Haggard, Sacramento Regional County Sanitation District, personal communication, August 24, 2005.

1.7.11 Aesthetics, Light and Glare

The project site and surrounding area are not within a scenic vista or adopted view corridor. Under the proposed project, some surface parking lots would be replaced with new structures and landscaping, which would be compatible with the existing visual character of the project site.

The tallest proposed structure would be the five-story Hospital Tower, at 80 feet in height. The addition would be located on the southern side of the existing hospital and would be set back approximately 160 feet from Wyndham Drive. The proposed architectural design would integrate the Hospital Tower with the existing four-story hospital and would include cement plaster walls in light gray, dark gray and brick colors; a metal panel system in charcoal; metal frame windows; and brick accents. The architecture of the Hospital Tower as well as the OSC and other proposed additions would provide a quality design and would improve the overall visual character of the Medical Center campus.

In addition, a five-story parking structure approximately 53 feet in height is proposed on the northeastern portion of the site (in the current location of Parking Lot 3). The parking structure would be set back approximately 50 feet from Bruceville Road and would have a parking structure appearance. Architectural enhancements such as textured paint to match that of the existing campus and landscaping would help soften the appearance of the proposed structure; however, the parking structure would not necessarily result in a demonstrable negative aesthetic effect.

Proposed lighting would be consistent with the requirements of the Sacramento City Code and would include cut-off luminaires to reduce potential skyglow and glare impacts. All mechanical equipment would be screened from off-site view.

The Hospital Tower would be inherently low glare because it would have a cement plaster exterior with small punched openings. The OSC would have a concrete facade with a textured finish similar in appearance to the cement plaster. All full-height windows would be located on the first floor, which would minimize glare onto the adjacent properties and vehicular traffic, pedestrians and other passers-by. The full-height windows would include horizontal shading devices to further reduce glare. Windows on the upper floors would be approximately six feet in height and five to six feet in width, would number between seven and seventeen per floor per side, and would be spaced with up to 24 feet in between. All windows would be glazed and held in aluminum frames, and would produce no significant glare.

Based on the discussion above, the project would not affect a scenic vista or adopted view corridor, have a demonstrable negative aesthetic effect, create light or glare, or create shadows on adjacent properties. Therefore, impacts would be less than significant.

1.7.12 Cultural Resources

The project site is not located in a primary impact area for cultural, historical, or paleontological resources. However, the possibility remains that important cultural resources could be uncovered and impacted during the construction of subgrade components. As described in Chapter 2 (Project Description), mitigation measures have been incorporated into the proposed project to ensure that impacts on cultural resources would be less than significant.

1.7.13 Recreation

The proposed project would not increase demand for neighborhood or regional parks, nor affect existing recreational opportunities, because it would not increase the number of residents in the City or region. Therefore, impacts on recreation would be less than significant.

1.8 OTHER AGENCIES THAT MAY USE THE EIR

This EIR is intended to be used by trustee and responsible agencies (as defined by Sections 15381 and 15386 of the *CEQA Guidelines*) that may have review or discretionary authority over the proposed project or some component of the project thereof. Agencies that may also use this EIR in their review of the project or that may have responsibility over approval of certain project elements include, but are not limited to, the following:

- Federal Aviation Administration (FAA)
- California Department of Transportation (Caltrans)
- Office of Statewide Health Planning and Development (OSHPD)
- Sacramento Area Council of Governments (SACOG)

1.9 FINAL EIR AND PROJECT APPROVAL

1.9.1 Public Review of Draft EIR

In accordance with CEQA, a good-faith effort has been made during the preparation of this EIR to contact all affected agencies, organizations and persons who may have an interest in this project.

This Draft EIR, with an accompanying Notice of Completion (NOC), is being circulated to the California SCH, trustee agencies, responsible agencies, other government agencies, and interested members of the public for a 45-day review period as required by CEQA. The review period for this Draft EIR is between March 28, 2006, and May 12, 2006. During this period, public agencies and members of the public may provide written comments on the analysis and content of the EIR. In reviewing a Draft EIR, readers should focus on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and on ways in which the significant effects of the project might be avoided or mitigated.

All written comments on this Draft EIR must be mailed, delivered, faxed, or e-mailed by 5:00 p.m. on May 12, 2006, and addressed as follows:

Mail or Delivery: City of Sacramento
Development Services Department
Environmental Planning Services
2101 Arena Boulevard, 2nd Floor
Sacramento, California 95834
Attention: Dana Allen, Senior Planner

Fax: Dana Allen, Senior Planner
City of Sacramento
(916) 566-3968

E-mail: dallen@cityofsacramento.org

All comments received on the Draft EIR during the 45-day public review period will be responded to by the City of Sacramento in the Final EIR.

1.9.2 Contents of Final EIR

The following elements will collectively compose the Final EIR:

- The Draft EIR;
- A list of all persons, organizations, and public agencies that commented on the Draft EIR within the public review period;
- Copies of all comments received; and
- Written responses to those comments.

1.9.3 Certification of Final EIR and Project Approval Process

For a period of at least 10 days prior to any public hearing during which the lead agency will take action to certify the EIR, the Final EIR will be made available to, at a minimum, the trustee and responsible agencies that provided written comments on the Draft EIR. Pursuant to Section 15090(a) of the *CEQA Guidelines*, the Final EIR must be certified before the lead agency can take action on the project.

After the EIR is certified, the City will begin evaluating the merits of the project and conduct public hearings as to whether or not to approve the proposed project. Before approving (or conditionally approving) the project, the City must prepare a Mitigation Monitoring and Reporting Program (MMRP). In accordance with Section 15091 of the *CEQA Guidelines*, the City must also prepare CEQA findings that briefly explain the rationale behind the finding for each significant environmental impact identified for the project. If significant environmental impacts that cannot be reduced to a less than significant level are identified for the project, the lead agency must prepare a Statement of Overriding Considerations, pursuant to Section 15093 of the *CEQA Guidelines*.

Certification of the Final EIR and approval of the CEQA findings, MMRP, and Statement of Overriding Considerations may be considered during one final public hearing. The certification of the Final EIR must be the first in this sequence of approvals.

CHAPTER 2 – PROJECT DESCRIPTION

2.1 PROJECT OVERVIEW

This EIR evaluates the potential environmental effects that would result from approval of the proposed Kaiser South Sacramento Medical Center Expansion (project).

2.1.1 Project Objectives

The proposed project has the following objectives, as identified by the project sponsor:

- Provide quality health care that can meet the needs of the growing South Sacramento community through the year 2018;
- Increase the total number of hospital beds to approximately 277;
- Increase parking spaces to meet the growing needs of staff, patients and visitors;
- Increase the energy capacity of the facility and ensure adequate backup for emergency power;
- Expand the Emergency Department (ED) to meet community needs and regulatory requirements;
- Provide greater trauma services through the expanded ED, additional outpatient services and Helipad;
- Expand the Outpatient Surgery Center (OSC) to meet the growing needs of community; and
- Improve traffic circulation on-site by adding dedicated pick-up and drop-off zones, easing congestion and improving on-site way-finding.

These project objectives would address regulatory requirements, provide greater site flexibility, and resolve existing space deficits within the existing Medical Center campus.

2.1.2 Project Definition

For purposes of evaluating the project in accordance with the California Environmental Quality Act (CEQA) and the *CEQA Guidelines*, the "proposed project" identified in this EIR is the project presented in applications on file with the City. This section of the EIR describes the proposed project at a level of detail that provides the reader with a basic understanding of the project. This project description presents the following relevant information:

- Project location
- Project characteristics
- Site characteristics
- Permits and approvals
- Mitigation measures incorporated into the project

Additional information about the existing site conditions is included in Section 3.0, Environmental Impact Analyses, of this Draft EIR.

2.2 PROJECT LOCATION

The project site is located within an existing Medical Center campus (of approximately 48.5 acres) at 6600 Bruceville Road, within the South Sacramento Community Plan area in the City and County of Sacramento. The site is bordered to the north by retail and commercial offices, to the south and west by multifamily residential land uses and a childcare center, and to the east by State Route (SR) 99. The site is identified as Assessor's Parcel Numbers (APNs) 117-0170-061, 117-0170-066, 117-0170-067, 117-0170-074 and 117-0170-075. Refer to Figure 2-1 (Regional Location Map) and Figure 2-2 (Local Vicinity Map).

2.3 PROJECT CHARACTERISTICS

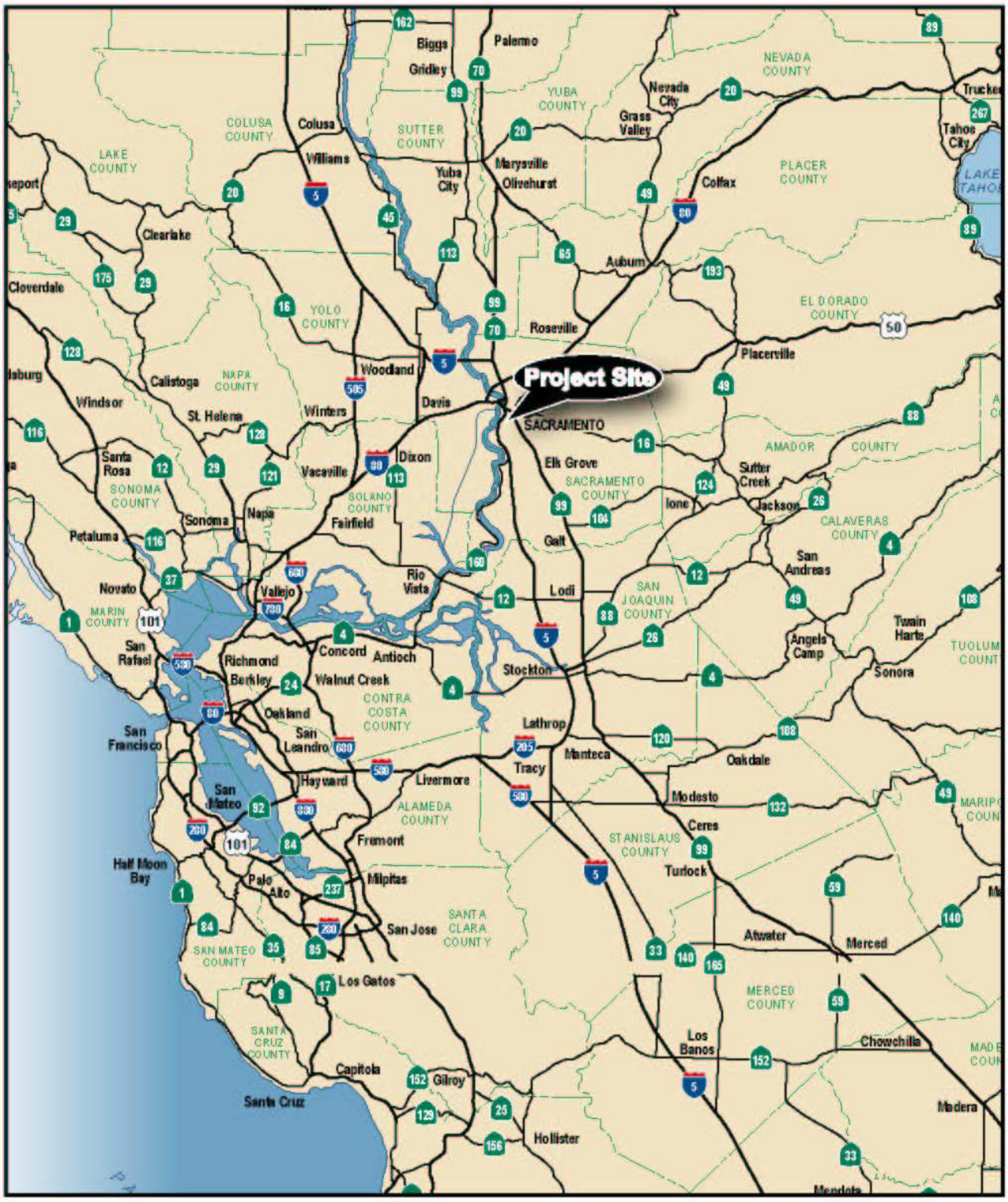
2.3.1 Proposed Project

The proposed project would add seven structures totaling approximately 244,000 square feet to the project site, thereby increasing the entire Medical Center to approximately 793,500 square feet, as follows:

- An approximately 158,000-square-foot Hospital Tower (basement plus five levels above grade) south of the existing hospital building, containing 96 new medical surgery beds, 20 new intensive care beds, and 20 intensive care beds relocated from the existing hospital. Additionally, one existing medical surgery bed would be eliminated from the existing hospital, resulting in a total of 115 new hospital beds;
- A two-story, approximately 57,000-square-foot Outpatient Surgery Center (OSC) with a six-room surgery suite constructed west of the new Hospital Tower;
- A five-story approximately 882-space parking structure on the north side of the campus along Bruceville Road. In addition, surface parking lots on the west side of the campus would be constructed to maintain City and project sponsor parking requirements;
- An addition to the Central Utility Plant consisting of a new single-story approximately 6,000-square-foot chiller addition to support the hospital expansion;
- A single-story, 10,000-square-foot Emergency Department (ED) addition east of the existing ED for a Trauma Center;
- A two-story 15,000-square-foot addition to outpatient services on the west side of the existing medical office building (MOB) 1; and
- An emergency helicopter landing pad (Helipad) as part of the new Trauma Center.

The proposed Helipad would be constructed east of the proposed Trauma Center. The Helipad would be used to receive emergency (medevac) flights only and would likely receive no more than six emergency helicopter flights per month. Two potential flight paths would be used by incoming helicopters: (1) from the north, flying south above SR 99, over MOB 3, and then directly to the landing pad; and (2) from the south, flying north above SR 99, over Bruceville Road and then to the landing pad.

The project includes several additional site upgrades: the realignment of segments of the campus ring road, the addition of dedicated pick-up and drop-off zones, the addition of ingress and egress drives, and the improvement of on-site way-finding. Refer to Figure 2-3 (Proposed Site Plan).



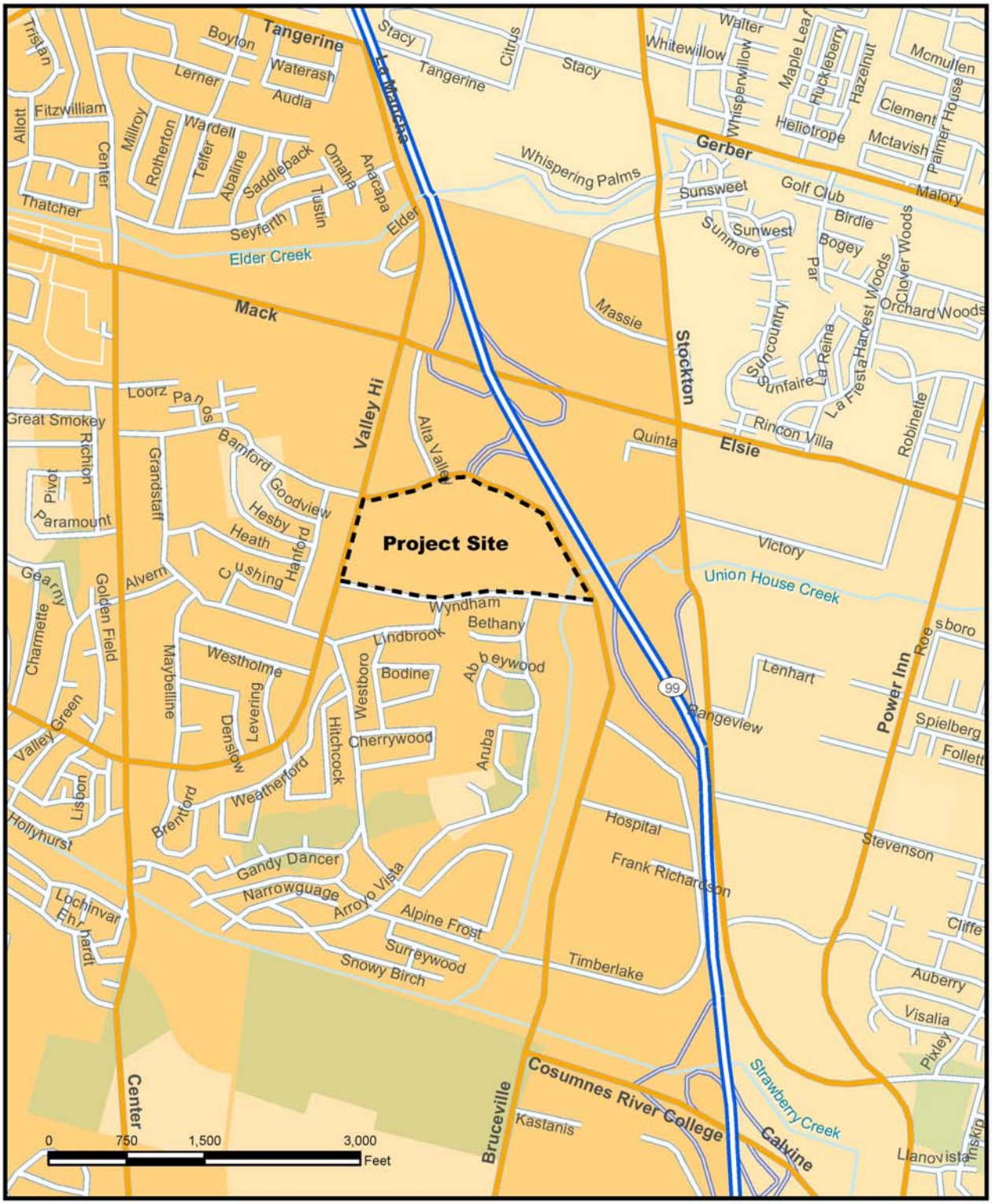
RBF CONSULTING

11/1/05 JN 35-100490

KAISER SOUTH SACRAMENTO MEDICAL CENTER EXPANSION

Regional Location Map

Figure 2-1



RBF CONSULTING

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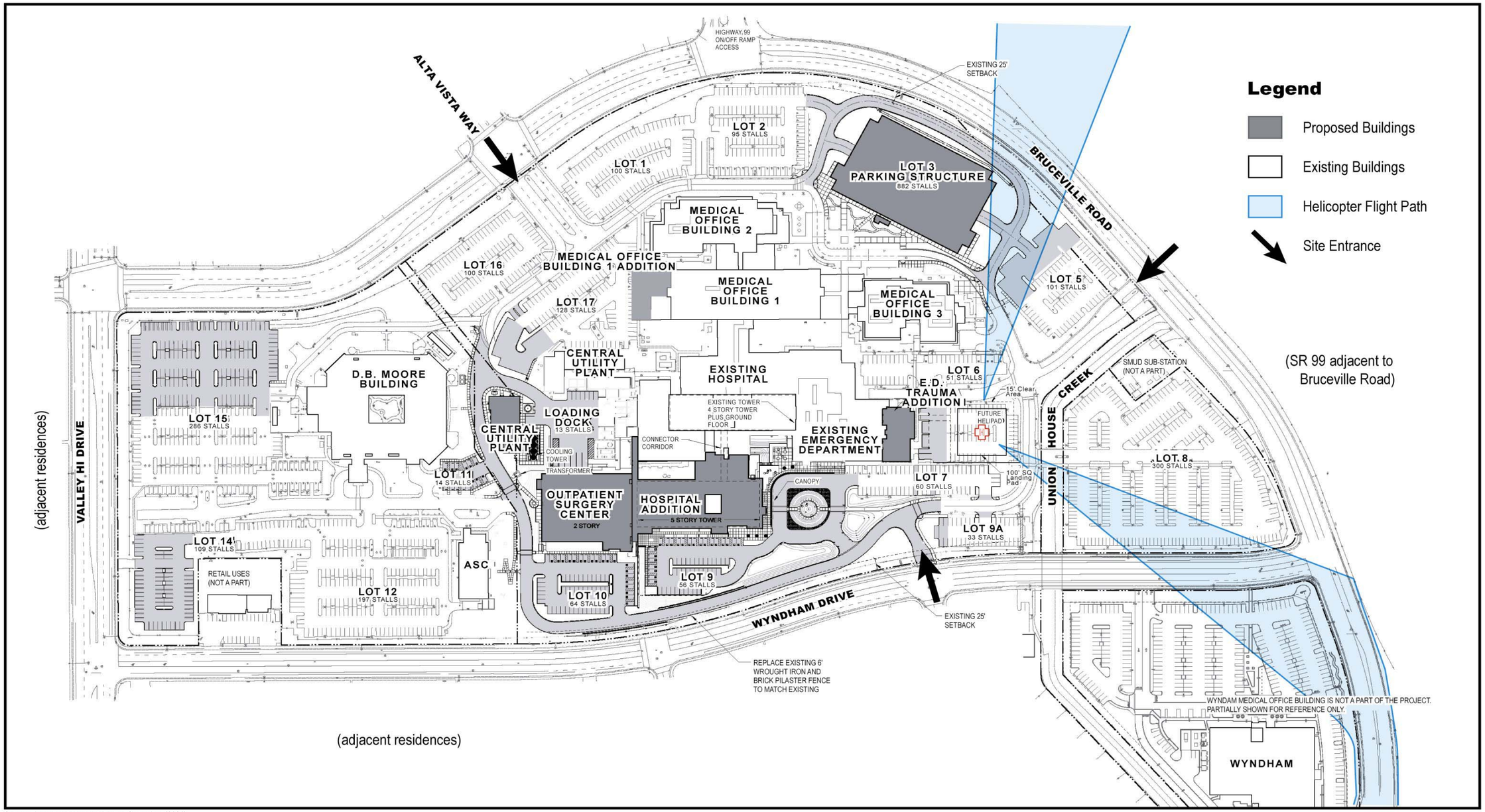
11/1/05 JN 35-100490

KAISER SOUTH SACRAMENTO MEDICAL CENTER EXPANSION

Local Vicinity Map

Figure 2-2



Source: Lionakis Beaumont Design Group Inc. (2006)

RBF CONSULTING

0 180 320 Feet
APPROXIMATE

8/17/05 JN 35-100462

KAISER SOUTH SACRAMENTO MEDICAL CENTER EXPANSION

Proposed Site Plan

Figure 2-3

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2.3.2 Access, Circulation and Parking

Most hospital staff and visitors to the Medical Center enter the project site from Bruceville Road (between Parking Lots 5 and 8), and from Alta Vista Way (between Parking Lots 1 and 16). The project proposes to alter the on-site circulation system to enhance patient and visitor way-finding and improve access to the Emergency Department. A new ring road would be constructed from an entrance off Wyndham Drive to a new drop-off circle in front of the ED. It would then follow Parking Lots 9 and 10 adjacent to Wyndham Drive; continue past Parking Lot 11, the D.B. Moore Building, and the Central Utility Plant to Parking Lots 16 and 17; and exit onto Bruceville Road at Alta Vista Way. An additional access road would parallel Bruceville Road and encircle the new (Lot 3) parking structure on the northeastern portion of the site.

The project site currently has 2,040 parking spaces spread out among 16 surface parking lots. With the new parking structure on the current Parking Lot 3, and the repaving of Parking Lots 14 and 15, the proposed project would increase the total number of parking spaces to 2,580, including 139 spaces accessible to the disabled.

2.3.3 Project Phasing

The proposed project would be constructed in four distinct phases to provide adequate parking throughout construction and to ensure minimal disruption of current hospital services. It is anticipated that the project would begin construction in the spring of 2006. Project completion is expected to take approximately five years, ending in December 2011.

Phase 1: Begin construction of new parking structure on Lot 3, and repaving of Parking Lots 14 and 15. Locate construction yard in southeastern corner of Parking Lot 12. Estimated time: three months.

Phase 2A: Continue construction of new parking structure; finish repaving of Parking Lots 14 and 15; begin construction on new chiller building and reroute ring road; install temporary drop-off for the hospital and ED between Parking Lots 9 and 10; and construct temporary ED drop-off between Parking Lots 7 and 9. Expand construction yard to southwestern corner of Parking Lot 12. Estimated time: nine months.

Phase 2B: Continue construction of new chiller building and reroute ring road; complete construction of new parking structure and ring road; open temporary ED drop-off and driveway to Wyndham Drive; construct ring road and reroute utilities adjacent to Wyndham Drive; and open Valley Hi Driveway between Parking Lots 14 and 15 for construction access only. Estimated time: six months.

Phase 3A: Begin construction of new Hospital Tower and OSC; open temporary hospital entry; and complete ring road. Expand construction yard to entire area of Parking Lot 12. Estimated time: two years.

Phase 3B: Complete Hospital Tower and OSC; and construct final drop-off design. Estimated time: three months.

Phase 4: Complete construction of final drop-off design; and remodel existing hospital. Shrink construction yard to a small southeastern corner of Parking Lot 12. Estimated time: two years.

2.4 SITE CHARACTERISTICS

2.4.1 Topography and Surrounds

The project site is currently developed as a Medical Center with adjacent surface parking lots. The existing parking lots are paved, except for Parking Lots 14 and 15. The topography of the site is relatively flat, and the surrounding South Sacramento community comprises multifamily residential units, a childcare center, and commercial businesses.

2.4.2 Habitat and Vegetation

The project site is completely developed, with minimal landscaping and located in an urbanized area. Vegetation on the site consists of turf areas, ornamental shrubs, and over 1,100 mostly non-native ornamental trees, such as beech, oak, alder and Japanese hackberry. The project site does not provide habitat for any threatened, endangered or special-status plant or wildlife species.

2.4.3 Geology and Soils

The project site is predominantly clay and loam soils, with slopes of zero to two percent.[1] Also, test borings up to 60 feet in depth encountered no groundwater, and historical information indicates that groundwater is between 53 and 66 feet deep.[2] However, the site is currently developed with a Medical Center and the proposed project would not change the soil condition or underlying geology.

2.4.4 Utilities

The project site is currently serviced by underground utilities that connect to the City's water and wastewater system, Sacramento Municipal Utility District (SMUD) electricity lines, and Pacific Gas and Electric Company (PG&E) gas lines. No new utility lines or pipes would need to be installed for the proposed project.

2.5 PERMITS AND APPROVALS

CEQA requires that an EIR identify the principal discretionary actions under consideration in the EIR as well as any other agency permits and approvals that may require consideration under CEQA. These actions, permits and approvals would be granted by the City. Permits and approvals from other agencies may also be necessary in the course of development of the project site. Anticipated and potential permits and approvals are identified in Table 2-1 (Permits and Approvals).

[1] Natural Resources Conservation Service, Soil Survey of Sacramento County, California, November 2005.

[2] David A. Wilson, Division Manager – Site Development, Mark Thomas & Company, Inc., E-mail communication to Mike Monson, Project Director, Lionakis Beaumont Design Group, Inc., October 18, 2005.

Table 2-1. Permits and Approvals

Agency	Permit/Approval
City of Sacramento	Certification of Final Environmental Impact Report, adoption of CEQA findings, and approval of Mitigation Monitoring and Reporting Program Special Permit (Major) Modification for proposed project Special Permit for Helipad Lot Line Adjustment to abandon easements that are no longer used or needed Certification of OSC as built per OSHPD 3 requirements
Office of Statewide Health Planning and Development (OSHPD)	Permits for Central Utility Plant addition, Emergency Department addition and Hospital Tower
Federal Aviation Administration (FAA)	Airspace Determination for Helipad Notice of Landing Area Proposal
California Department of Transportation (Caltrans), Division of Aeronautics	State Heliport Permit
Sacramento Area Council of Governments (SACOG)	Consistency with the Airport Land Use Commission criteria regarding safety, noise and land-use

2.6 MITIGATION MEASURES INCORPORATED INTO THE PROJECT

As described in Chapter 1 (Introduction), an Initial Study was prepared for the proposed project. The project has been redesigned to incorporate the mitigation measures outlined in the Initial Study. The impact analysis in this EIR is based on the assumption that these measures would be implemented as part of the project.

The project has incorporated into the project design the following measures to mitigate project impacts related to noise and cultural resources. These measures would become conditions of approval for the project.

2.6.1 Noise

To reduce the impact of construction noise, the City Building Division would monitor the implementation of the following mitigation measures during project construction:

10-1 All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers, to the satisfaction of the Building Division.

10-2 Stationary construction equipment shall be placed such that emitted noise is directed away from sensitive noise receivers, to the satisfaction of the Building Division.

10-3 Stockpiling and vehicle staging areas shall be located as far as practical from noise sensitive receptors during construction activities, to the satisfaction of the Building Division.

To attenuate potential long-term (operational) noise impacts on sensitive receptors from helicopter flights, mechanical equipment operation and truck deliveries, the proposed project has been redesigned to incorporate the following measures:

10-4 Electrical and mechanical equipment (i.e., ventilation and air conditioning units) shall be located as far away as is feasible from sensitive receptor areas. Additionally, the following shall be considered prior to installation: proper selection and sizing of equipment, installation of equipment with proper acoustical shielding, and incorporating parapets into the building design.

10-5 Loading docks within the project area shall be designed to have either a depressed (i.e., below-grade) loading dock area, an internal bay, or a wall to break the line of sight between noise-sensitive uses and loading operations. During the final site design process, an acoustical consultant shall determine whether operation of the loading docks would result in noise levels that exceed City standards at exterior on- or off-site sensitive uses. If it is determined that the design is not sufficient, proper noise attenuation mitigation measures shall be incorporated into the plans to be submitted by the project sponsor to the City for review and approval, prior to the issuance of building permits.

10-6 Helicopter flight paths shall follow busy roadways so that the road traffic masks the helicopter noise. Low-altitude flyovers shall be avoided, especially above residential property. The hospital shall ensure that patients who require sleep or are more sensitive to noise are located away from the side of the building facing the Helipad.

2.6.2 Cultural Resources

To reduce the impact from construction activities on unknown or undiscovered cultural resources, the construction manager would implement the following mitigation measures, as necessary:

14-1 If subsurface archaeological or historical remains are discovered during construction, work in the area shall stop immediately and a qualified archaeologist and a representative of the Native American Heritage Commission shall be consulted to develop, if necessary, further mitigation measures to reduce any archaeological impact to a less than significant level before construction continues.

14-2 If human burials are encountered, all work in the area shall stop immediately and the Sacramento County Coroner's office shall be notified. If the remains are determined to be Native American in origin, both the Native American Heritage Commission and any identified descendants shall be notified and recommendations for treatment solicited (CEQA Section 15064.5; Health and Safety Code Section 7050.5; and Public Resources Code Section 5097.94 and 5097.98).

CHAPTER 3 – EXISTING CONDITIONS, ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

3.1 INTRODUCTION

This chapter presents the findings of the environmental analyses conducted for the proposed Kaiser South Sacramento Medical Center Expansion (project). Air quality impacts are evaluated in Section 3.2 and transportation and circulation impacts are evaluated in Section 3.3.

3.1.1 Organization of Chapter 3

The narrative text of Sections 3.2 and 3.3 is organized as follows:

- **Existing Conditions** are the on-site and (as relevant) surrounding environmental conditions in existence at the time of publication of the Initial Study and NOP, pursuant to *CEQA Guidelines* Section 15125, as well as relevant regulatory standards and requirements.

- **Environmental Analysis** first specifies the applicable significance thresholds (i.e., the criteria by which the level of significance of each potential impact is evaluated), and then describes changes that would result in the existing physical environment should the proposed project be implemented, in accordance with *CEQA Guidelines* Sections 15126 and 15126.2. Pursuant to *CEQA Guidelines* Section 15143, the analysis focuses on the changes that might result in significant impacts if the project is implemented.

Project impacts are numbered sequentially within each section. For example, potential impacts discussed in Section 3.2 are numbered 3.2-1, 3.2-2, etc., and impacts in Section 3.3 are numbered 3.3-1, 3.3-2, etc. A summary of the potential impact is presented first; its level of significance is specified second; environmental analysis is provided third; and any required mitigation is identified last. If mitigation is required, the section concludes with the residual level of significance (after mitigation).

3.1.2 Mitigation Measures

Pursuant to *CEQA Guidelines* Sections 15002, 15021, and 15126.4, mitigation measures are required (as feasible) when significant impacts are identified. If a mitigation measure itself would cause a significant impact in addition to the impact caused by the project alone, that impact is also discussed, although at a lesser level of detail than the basic impact (pursuant to *CEQA Guidelines* Section 15126.4 (A)(1)(d)). "Mitigation measures must be fully enforceable through permit conditions, agreements, or other legally-binding instruments. In the case of adoption of a plan, policy, regulation, or other public project, mitigation measures can be incorporated into the plan, policy, regulation, or project design" (*CEQA Guidelines* Section 15126.4(a)(2)).

Each mitigation measure is numbered so that it directly correlates to the impact it addresses. Therefore, a measure to mitigate Impact 3.2-1 is numbered Mitigation Measure 3.2-1.

3.2 AIR QUALITY

This section evaluates the potential short- and long-term air quality impacts that would result from buildout of the proposed project. Information in this section is based primarily on the *Guide to Air Quality Assessment in Sacramento County* (*Guide*) (July 2004), provided by the Sacramento Metropolitan Air Quality Management District (SMAQMD); air quality data from the California Air Resources Board for 2000 through 2004; and traffic information provided by Fehr & Peers.

3.2.1 Environmental Setting

The California Air Resources Board (CARB) divides the state into air basins that share similar meteorological and topographical features. The project site is located within the Sacramento Valley Air Basin (Basin), which includes Shasta, Tehama, Glenn, Butte, Sutter, Yuba, Colusa, Placer, Yolo, Solano and Sacramento Counties. The project site is located in the southern portion of the Basin, in Sacramento County (County).

3.2.1.1 Climate and Topography

The Basin is bounded by the Coast and Diablo ranges on the west and the Sierra Nevada on the east. The County is 55 miles northeast of the Carquinez Strait, a sea-level gap between the Coast Range and the Diablo Range; the intervening terrain is flat. The prevailing winds come from the south, primarily due to the marine breezes through the Carquinez Strait. However, during the winter, the sea breezes diminish, allowing winds from the north to occur more frequently.

The mountains surrounding the Basin create a barrier to airflow, which traps air pollutants in the Basin. The highest frequency of air stagnation occurs in autumn and early winter, when large high-pressure cells lie over the Basin. The lack of surface wind during these periods and the reduced vertical flow caused by less surface heating reduces the influx of outside air, allowing air pollutants to become concentrated. The surface concentrations of pollutants are highest when these conditions are combined with smoke from agricultural burning or when temperature inversions trap cool air, fog and pollutants near the ground.

Between late spring and early fall, a layer of warm air often overlays a layer of cool air from the Sacramento River Delta and San Francisco Bay, resulting in an inversion. Typical winter inversions are formed when the sun heats the upper layers of air, trapping the cool air below. Local topography produces many variations that can affect the inversion base and thus influence local air quality.

Hot dry summers and mild rainy winters characterize the Mediterranean climate of the Basin. During the year, the temperature may range from 20 to 115 degrees Fahrenheit with typical summer highs in the 90s and winter lows occasionally below freezing. Average annual rainfall is about 20 inches, and snowfall is rare. The prevailing winds are moderate in strength and vary from moist clean breezes from the south to dry land flows from the north.

3.2.1.2 Attainment Status

The Basin is classified as nonattainment for 8-hour ozone, particulate matter up to 10 and 2.5 microns in diameter (PM_{10} and $PM_{2.5}$, respectively) and attainment for other criteria pollutants under the California Clean Air Act. For federal standards, the Basin is classified as nonattainment for ozone (8-hour standards)

and PM_{10}, and in attainment for other criteria pollutants. Table 3.2-1 (Air Quality Attainment Status of the Basin) describes the Basin's attainment status for criteria pollutants.

Table 3.2-1 Air Quality Attainment Status of the Basin

Pollutant	State Standard	Federal Standard
Ozone 1-Hour Standard	Serious Non-Attainment	NA[1]
Ozone 8-Hour Standard	Serious Non-Attainment	Serious Non-Attainment
Particulate Matter ≤10 microns (PM_{10})	Non-Attainment	Moderate Non-Attainment[2]
Particulate Matter ≤ 2.5 microns ($PM_{2.5}$)	Non-Attainment	Attainment/Unclassified
Carbon Monoxide (CO)	Attainment	Attainment
Nitrogen Oxides (NOx)	Attainment	Attainment
Sulfur Oxides (SOx)	Attainment	Attainment

1. As of June 2005, the EPA revoked the 1-hour ozone standard.
2. Air quality meets federal PM_{10} standards. The Sacramento Metropolitan Air Quality Management District (SMAQMD) must request redesignation as in attainment and submit a maintenance plan to be formally designated as in attainment.

Source: Sacramento Metropolitan Air Quality Management District, http://64.143.64.21/aqdata/attainmentstat.shtml, November 28, 2005.

3.2.1.3 Local Ambient Air Quality

The California Air Resources Board (CARB) maintains several stations that monitor ambient air throughout Sacramento County. The air monitoring station closest to the project site is in the City of Elk Grove, at 12490 Bruceville Road. The Elk Grove monitoring station does not monitor all criteria pollutants; therefore, other stations in the area were also used to provide data for the air quality analysis. These stations are the Sacramento Health Department (2221 Stockton Boulevard) and the T Street Monitoring Station (1309 T Street) in the City of Sacramento (City). Local air quality data from 2000 to 2004 are provided in Table 3.2-2 (Local Air Quality Levels [2000-2004]). This table lists the monitored maximum pollutant concentrations and the number of exceedances of federal and state air quality standards each year, as available.

Ozone

Ozone occurs in two layers of the atmosphere. The layer surrounding the earth's surface is the troposphere. The troposphere extends approximately ten miles above ground level, where it meets the second layer, the stratosphere. The stratosphere (the "good" ozone layer) extends upward from about ten to 30 miles and protects life on earth from the sun's harmful ultraviolet rays (UV-B).

Table 3.2-2 Local Ambient Air Quality Levels (2000-2004)

Pollutant	California	Federal	Year	Maximum Concentration	Days (Samples) State/Federal Standard Exceeded
	Primary Standard				
Ozone (O_3) for 1 hour[1]	0.09 ppm	0.12 ppm	2000 2001 2002 2003 2004	0.10 0.12 0.09 0.11 0.10	3/0 10/0 1/0 10/0 1/0
Ozone (O_3) for 8 hours[1]	0.07 ppm	0.08 ppm	2000 2001 2002 2003 2004	0.09 0.09 0.08 0.09 0.09	NM/1 NM/3 NM/0 NM/5 NM/1
Carbon Monoxide (CO) [3]	9.0 ppm (8 hours)	9.0 ppm (8 hours)	2000 2001 2002 2003 2004	4.43 4.41 4.31 3.40 2.96	0/0 0/0 0/0 0/0 0/0
Nitrogen Dioxide (NO_2) [1]	0.25 ppm (1 hour)	0.053 ppm annual average	2000 2001 2002 2003 2004	0.05 0.06 0.08 0.05 0.04	0/NM 0/NM 0/NM 0/NM 0/NM
Particulate Matter (PM_{10})[2]	50 : g/m^3 (24 hours)	150 : g/m^3 (24 hours)	2000 2001 2002 2003 2004	90.0 61.0 90.0 54.0 46.0	2/0 1/0 4/0 2/0 0/0
Fine Particulate Matter ($PM_{2.5}$)[2,3,4]	12 μg/m^3 annual arithmetic mean	65 : g/m^3 (24 hours)	2000 2001 2002 2003 2004	65.0 42.0 91.0 49.0 47.0	NM /0 NM /0 NM /2 NM /0 NM /0

ppm = parts per million; PM_{10} = particulate matter less than or equal to 10 microns in diameter; NM = not measured; μg/m^3 = micrograms per cubic meter; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; NA = not applicable.

1. Measurements were taken at Elk Grove Monitoring Station, 12490 Bruceville Road, Elk Grove.
2. Measurements were taken at Sacramento Health Department, 2221 Stockton Boulevard, Sacramento.
3. Measurements were taken at T Street Monitoring Station, 1309 T Street, Sacramento.
4. Maximum concentrations are measured over the same period as the California standard.

Source: Aerometric Data Analysis and Measurement System (ADAM), summaries from 2000 to 2004, http://www.arb.ca.gov/adam.

"Bad" ozone is a photochemical pollutant, and needs volatile organic compounds (VOCs), nitrogen oxides (NO_X), and sunlight to form; therefore, VOCs and NO_X are ozone precursors. VOCs and NO_X are emitted from various sources throughout the City. To reduce ozone concentrations, it is necessary to control the emissions of these ozone precursors. Significant ozone formation generally requires an adequate amount of precursors in the atmosphere, several hours in a stable atmosphere, and strong sunlight. High ozone concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins.

While ozone in the upper atmosphere (stratosphere) protects the earth from harmful ultraviolet radiation, high concentrations of ground-level ozone (in the troposphere) can adversely affect the human respiratory system and other tissues. Many respiratory ailments, as well as cardiovascular disease, are aggravated by exposure to high ozone levels. Ozone also damages natural ecosystems (such as forests and foothill plant

communities), agricultural crops, and some man-made materials (such as rubber, paint and plastics). Societal costs from ozone damage include increased health-care costs, the loss of human and animal life, accelerated replacement of industrial equipment and reduced crop yields.

The state ozone standard is 0.09 parts per million (ppm), averaged over one hour. From 2000 through 2004, the ozone levels at the Elk Grove monitoring station ranged between 0.09 ppm and 0.12 ppm, and exceeded the 1-hour state standard 25 times.

Carbon Monoxide

Carbon monoxide (CO) is an odorless, colorless toxic gas that is emitted by mobile and stationary sources as a result of incomplete combustion of hydrocarbons or other carbon-based fuels. In cities, automobile exhaust can cause as much as 95 percent of all CO emissions. At high concentrations, CO can reduce the oxygen-carrying capacity of the blood and cause headaches, dizziness, unconsciousness and death.

State and federal standards were not exceeded between 2000 and 2004 at the Sacramento Health Department monitoring station.

Nitrogen Dioxide

Nitrogen oxides (NO_X) are a family of highly reactive gases that are a primary precursor to the formation of ground-level ozone, and react in the atmosphere to form acid rain. NO_2 (often used interchangeably with NO_X) is a reddish-brown gas that can cause breathing difficulties at high levels. Peak readings of NO_2 occur in areas that have a high concentration of combustion sources (e.g., motor vehicle engines, power plants, refineries and other industrial operations).

NO_X can irritate and damage the lungs, and lower resistance to respiratory infections such as influenza. The health effects of short-term exposure are still unclear. However, continued or frequent exposure to NO_X concentrations that are typically much higher than those normally found in the ambient air may increase acute respiratory illnesses in children and increase the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO_2 may aggravate eyes and mucus membranes and cause pulmonary dysfunction.

State and federal standards were not exceeded between 2000 and 2004 at the Elk Grove monitoring station.

Particulate Matter

Particulate matter pollution consists of very small liquid and solid particles floating in the air, and is a mixture of materials that can include smoke, soot, dust, salt, acids and metals. Particulate matter also forms when gases emitted from motor vehicles and industrial sources undergo chemical reactions in the atmosphere. Some particles are large or dark enough to be seen as soot or smoke; others are so small that they can be detected only with an electron microscope. PM_{10} particles are less than or equal to 10 microns in aerodynamic diameter; $PM_{2.5}$ particles are less than or equal to 2.5 microns in aerodynamic diameter, and are a subset (portion) of PM_{10}.

In the western United States, there are sources of PM_{10} in both urban and rural areas. PM_{10} and $PM_{2.5}$ are emitted from stationary and mobile sources, including diesel trucks and other motor vehicles, power

plants, industrial processing, wood-burning stoves and fireplaces, wildfires, dust from roads, construction, landfills, agriculture, and fugitive windblown dust.

PM_{10} and $PM_{2.5}$ particles are small enough to be inhaled into, and lodge in, the deepest parts of the lung. Health problems begin as the body reacts to these foreign particles. Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases, heart and lung disease, coughing, bronchitis, and respiratory illnesses in children. Recent mortality studies have shown a statistically significant direct association between mortality and daily concentrations of particulate matter in the air. Non-health-related effects include reduced visibility and soiling of buildings.

The state standard for PM_{10} is 50 micrograms per cubic meter ($\mu g/m^3$) averaged over 24 hours; this standard was exceeded nine days at the Sacramento Health Department monitoring station between 2000 and 2004. The federal standard for PM_{10} is 150 $\mu g/m^3$ averaged over 24 hours, and was not exceeded at the Sacramento Health Department monitoring station between 2000 and 2004.

Due to recent increased concerns over health impacts related to fine particulate matter (particulate matter less than or equal to 2.5 microns in diameter), both state and federal $PM_{2.5}$ standards have been created. On January 5, 2005, the EPA published a Final Rule, in the Federal Register that designates Sacramento County portion of the Basin as a nonattainment area for Federal $PM_{2.5}$ standards. The federal standard for $PM_{2.5}$ is 65 $\mu g/m^3$ averaged over 24 hours. As indicated in Table 3.2-2, the air emissions at the Sacramento Health Department monitoring station has not exceeded the federal standards in the past five years. The state standard was not measured at that station.

Sulfur Dioxide

Sulfur dioxide (SO_2) is a colorless, pungent gas belonging to the family of sulfur oxide gases (SO_X), formed primarily by combustion of sulfur-containing fossil fuels (primarily coal and oil), metal smelting and other industrial processes.

The major health concerns associated with exposure to high concentrations of SO_X are effects on breathing, respiratory illness, diminishment of pulmonary defenses, and aggravation of existing cardiovascular disease. Major subgroups of the population that are most sensitive to SO_X are individuals with cardiovascular disease or chronic lung disease (such as bronchitis or emphysema), as well as children and the elderly. Emissions of SO_X also can damage the foliage of trees and agricultural crops. Together, SO_X and NO_X are the major precursors to acid rain, which is associated with the acidification of lakes and streams, and the accelerated corrosion of buildings and public monuments. Sulfur oxides can react to form sulfates, which significantly reduce visibility.

The Basin is in attainment for SO_2.

Toxic Air Contaminants

According to Section 39655 of the California Health and Safety Code, a toxic air contaminant (TAC) is an air pollutant that may cause or contribute to an increase in mortality or an increase in serious illness, or pose a present or potential hazard to human health. In addition, 189 substances that have been listed as federal hazardous air pollutants (HAPs) (pursuant to Section 7412 of Title 42 of the U.S. Code) are TACs under the state's air toxics program (pursuant to Section 39657 (b) of the California Health and Safety Code).

TACs can cause various cancers, depending on the particular chemicals, their type and the duration of exposure. Additionally, some TACs may cause other health effects over the short- or long-term. The ten TACs posing the greatest health risk in California are acetaldehyde, benzene, 1-3 butadiene, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, perchlorethylene and diesel particulate matter.

Reactive Organic Gases and Volatile Organic Compounds

Hydrocarbons are organic gases that are formed solely of hydrogen and carbon. There are several subsets of organic gases including reactive organic gases (ROGs) and volatile organic compounds (VOCs). ROGs comprise all hydrocarbons except those exempted by the CARB; therefore, ROGs are a set of organic gases based on state rules and regulations. VOCs are similar to ROGs in that they are all organic gases, but federal law exempts some ROGs. VOCs are, therefore, a set of organic gases based on federal rules and regulations. Both ROGs and VOCs are emitted from the incomplete combustion of hydrocarbons or other carbon-based fuels. The major sources of hydrocarbons are combustion engine exhaust, oil refineries and oil-fueled power plants; other common sources are petroleum fuels, solvents, dry cleaning solutions and paint (via evaporation).

The health effects of hydrocarbons result from the formation of ozone and its related health effects. High levels of hydrocarbons in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. Carcinogenic forms of hydrocarbons are considered TACs. There are no separate health standards for VOCs, although some VOCs are also toxic; an example is benzene, which is both a VOC and a carcinogen.

3.2.2 Regulatory Setting

3.2.2.1 U.S. Environmental Protection Agency (EPA)

The principal air quality regulatory mechanism at the federal level is the Clean Air Act (CAA) and, in particular, the 1990 amendments to the CAA, and the National Ambient Air Quality Standards (NAAQS) that the CAA establishes. These standards identify levels of air quality for "criteria" pollutants that are considered the maximum levels of ambient (background) air pollutants that are considered safe, with an adequate margin of safety, to protect the public health and welfare. The criteria pollutants are O_3, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead (Pb). Refer to Table 3.2-3 (National and California Ambient Air Quality Standards). The Environmental Protection Agency (EPA) has regulatory and enforcement jurisdiction over emission sources beyond state waters (the outer continental shelf) and those that are under the exclusive authority of the federal government, such as aircraft, locomotives and interstate trucking.

3.2.2.2 California Air Resources Board

The CARB, a department of the California Environmental Protection Agency (CalEPA), oversees air quality planning and control throughout California. Its responsibility lies with ensuring implementation of the 1989 amendments to the CCAA, responding to the CAA requirements, and regulating emissions from motor vehicles sold in California. It also sets fuel specifications to further reduce vehicular emissions. The amendments to the CCAA establish California Ambient Air Quality Standards (CAAQS) and a legal mandate to achieve these standards by the earliest practicable date. These standards apply to the same criteria pollutants as the CAA, as well as sulfate, visibility, hydrogen sulfide, and vinyl chloride. Refer to Table 3.2-3 (National and California Ambient Air Quality Standards).

3.2.2.3 Sacramento Metropolitan Air Quality Management District

The CARB has established a state health-based air quality standard for ozone. Under the CCAA, areas not in compliance with this standard must prepare an ozone reduction plan. All major metropolitan areas within California, including the Sacramento region, must comply with this standard and, therefore, must submit an attainment plan every three years. The Sacramento Metropolitan Air Quality Management District (SMAQMD) approved the *1994 State Implementation Plan (SIP)*, which identified a comprehensive regional strategy to reduce emissions to the level required for attainment of federal standards. The SIP has been updated twice in the past 11 years, most recently in 2002. Although the Sacramento region currently does not meet the federal ozone standard, it has made significant progress towards attainment.

Table 3.2-3 National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standard [1]	Federal Standard[2]	
		Concentration [3]	Primary [3, 4]	Secondary [3, 5]
Ozone (O_3)	1 hour	0.09 ppm (180 μg/m)	0.12 ppm (235 μg/m^3)	0.12 ppm (235 μg/m^3)
	8 hours	0.07 ppm	0.08 ppm (157 μg/m^3)	0.08 ppm (157 μg/m^3)
Particulate Matter (PM_{10})	24 hours	50 μg/m^3	150 μg/m^3	150 μg/m^3
	annual arithmetic mean	20 μg/m^3	50 μg/m^3	50 μg/m^3
Fine Particulate Matter ($PM_{2.5}$)	24 hours	(no separate state standard)	65 μg/m^3	65 μg/m^3
	annual arithmetic mean	12 μg/m^3	15 μg/m^3	15 μg/m^3
Carbon Monoxide (CO)	8 hours	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)
	1 hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	35 ppm (40 mg/m^3)
Nitrogen Dioxide (NO_2)	annual arithmetic mean	N/A	0.053 ppm (100 μg/m^3)	0.053 ppm (100 μg/m^3)
	1 hour	0.25 ppm (470 μg/m^3)	N/A	N/A
Lead (Pb)	30 Days Average	1.5 μg/m^3	N/A	N/A
	calendar quarter	N/A	1.5 μg/m^3	1.5 μg/m^3
Sulfur Dioxide (SO_2)	annual arithmetic mean	N/A	0.030 ppm (80 μg/m^3)	N/A
	24 hours	0.04 ppm (105 μg/m^3)	0.14 ppm (365 μg/m^3)	N/A
	3 hours	N/A	N/A	0.5 ppm (1300 μg/m^3)
	1 hour	0.25 ppm (655 μg/m^3)	N/A	N/A
Visibility-Reducing Particles	8 hours (10 am to 6 pm, PST)	extinction coefficient = 0.23 km@<70% RH	**No Federal Standards**	
Sulfates	24 hours	25 μg/ m^3		
Hydrogen Sulfide	1 hour	0.03 ppm (42 μg/ m^3)		

ppm = parts per million; μg/ m^3 = micrograms per cubic meter; mg/ m^3 = milligrams per cubic meter; km = kilometers; RH = relative humidity; PST = Pacific Standard Time; N/A = not applicable.

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, suspended particulate matter-PM_{10}, and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations. In 1990, the California Air Resources Board (CARB) identified vinyl chloride as a toxic air contaminant and determined that there was not sufficient available scientific evidence to support the identification of a threshold exposure level. This action allows the implementation of health-protective control measures at levels below the 0.010 ppm ambient concentration specified in the 1978 standard.
2. National standards (other than ozone, particulate matter, and those based on an annual average or annual arithmetic mean) are not to be exceeded more than once a year. The U.S. Environmental Protection Agency (EPA) also may designate an area as *attainment/unclassifiable* if (1) monitored air quality data show that the area has not violated the ozone standard over a three-year period; or (2) there is not enough information to determine the air quality in the area. For PM_{10}, the 24-hour standard is attained when 99 percent of the daily concentrations, averaged over the three years, are equal to or less than the standard. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the EPA for further clarification and current federal policies.
3. Concentration is expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 millimeters (mm) of mercury. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 mm of mercury (1,013.2 millibar); ppm in this table refers to ppm by volume (micromoles of pollutant per mole of gas).
4. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.
5. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

Source: California Air Resources Board, http://www.arb.ca.gov/aqs/aqs.htm, April 2005.

3.2.3 Environmental Analysis

3.2.3.1 Significance Criteria

For purposes of this EIR, impacts on air quality are considered significant if the proposed project would:

- Cause a predicted violation of the carbon monoxide (CO) ambient air quality standards (8-hour or 1-hour state standards) due to project traffic on the local street network on either a project or a cumulative level;
- Create emissions of an ozone precursor or PM_{10} exceeding the SMAQMD recommended thresholds of significance; refer to Table 3.2-4 (SMAQMD Air Emission Thresholds).

Table 3.2-4 SMAQMD Air Emission Thresholds

Phase	Pollutants (lbs/day)	
	ROG	NOX
Short-Term (Construction)	NA	85
Long-Term (Operational)	65	65

Source: SMAQMD, *Guide to Air Quality Assessment in Sacramento County*, 2004.

- Result in a net increase of any criteria pollutants, on a project-specific or cumulative level, for which the project region is in non-attainment under an applicable federal or state ambient air quality standard.
- Expose sensitive receptors to substantial pollutant concentrations; for CO, this would be concentrations in excess of the CAAQS.

3.2.3.2 Methodology

SMAQMD Guide to Assessing Air Quality Impacts in Sacramento County

The *SMAQMD Guide* provides guidance to assist local government agencies and consultants in developing environmental documents required by CEQA. With this methodology, local land use planners

and other consultants are able to analyze and document how proposed land uses would affect the region's air quality. The analysis for this project utilized the most recent information provided by the SMAQMD website, as well as consultation with the SMAQMD.

Short-term (construction) and long-term (operational) emissions from both mobile and stationary sources resulting from the proposed project were analyzed and compared to the SMAQMD's standards for criteria pollutants.

URBEMIS 2002

Emissions were estimated using the approach included in the URBEMIS model combined with emission factors developed by the CARB and the SMAQMD. This model is used to calculate construction and operational emissions associated with land development projects and has EPA, SMAQMD, and CARB emission factors embedded within it. URBEMIS was developed under the guidance of several California air districts and is available from the SMAQMD's website.

URBEMIS 2002 was developed to provide meaningful analysis of both short- and long-term impacts, and to encourage mitigation measures during project planning. Discrete URBEMIS 2002 analysis is limited to annual periods. URBEMIS 2002 uses a simplified set of emission factors to estimate impacts separately for predetermined construction periods and for operational periods as independent events and does not factor in small discrete periods of project overlap, incremental periods smaller than one year, individual buildout rates for each particular element of construction, schedule utilization of individual pieces of equipment, pro-ration for occupancy rate, retrofit technology over the life of equipment, pollutant reactivity or pollutant transport.

URBEMIS 2002 operational emissions are comprised of two separate sources, area sources (i.e., emissions from space heating, landscape maintenance) and mobile sources. These emissions are calculated for the build-out period and take into account future fleet mixes and emission controls. For the proposed project, when site-specific or project-specific data were available, URBEMIS 2002 factors were modified to fit with the information. Where little or no information was available for a project, default values were selected. For the cumulative analysis, air emissions in the Basin were utilized.

CALINE-4 Air Quality Model

CALINE-4 is an off-site consequence model used in conjunction with traffic-related information. This program allows microscale CO concentrations to be estimated along each roadway corridor or near intersections. This model is designed to identify localized concentrations of CO, often termed "hot spots." A CO hot-spot analysis was performed when the results of the traffic study showed a level of service (LOS) of "D" or worse. A hot-spot analysis estimates localized concentration (micrograms per cubic meter) of CO related to mobile sources. This model is used for cumulative traffic-related impacts.

3.2.3.3 Impacts and Mitigation

Impact 3.2-1: Construction of the proposed project would generate emissions of particulate matter less than or equal to 10 microns in diameter (PM_{10}) and ozone precursors. (Potentially Significant Impact)

Short-term air quality impacts are predicted to occur during project grading and construction. Short-term air quality analysis considers cumulative construction emissions of the activities associated with each improvement within the project areas. Temporary air emissions would result from the following activities:

- Particulate (fugitive dust) emissions from grading for the parking lot and building construction; and
- Exhaust emissions from the construction equipment, motor vehicles of the construction crew, use of off-site areas for employee parking, and traffic delays in accessing parking lots.

Potential odors could arise from the diesel construction equipment used on-site, as well as from architectural coatings and asphalt off-gassing. Potential odors generated during construction operations would be temporary and would not be considered a significant impact. Emissions produced during grading and construction activities would be short-term, as they would exist only during construction.

To estimate the project's short-term air quality impacts, the URBEMIS 2002 Version 8.7 was utilized. Information was obtained from the project contractor regarding the types of equipment being used on-site, project scheduling, and other construction activities. Refer to Appendix B (Air Quality Data) for project assumptions. According to the project contractor, the proposed project would be built in four distinct phases lasting approximately five years as described in Chapter 2 (Project Description) and in Table 3.2-5 (Project Construction Air Emissions) indicates the results of the URBEMIS 2002 model.

Fugitive Dust Emissions

Construction activities would be a source of fugitive dust (PM_{10}) emissions that may result in a substantial temporary impact on local air quality. In addition, fugitive dust may be a nuisance to those living and working in the project vicinity. Fugitive dust emissions are associated with land clearing, ground excavation, cut-and-fill operations, and truck travel on unpaved roadways. Dust emissions also vary substantially from day to day, depending on the level of activity, the specific operations, and weather conditions.

Fugitive dust from grading and construction would be short-term, and would cease upon project completion. Additionally, most of this material would be inert silicates and would be less harmful than the complex organic particulates released from combustion sources. Dust (larger than ten microns) generated by such activities usually becomes more of a local nuisance than a serious health problem. As previously discussed, PM_{10} poses a serious health hazard, alone or in combination with other pollutants. The proposed project would not require significant grading activities, which typically result in the greatest emission of fugitive dust. Implementation of Mitigation Measure 3.2-1a regarding dust control techniques (e.g., daily watering), limitations on construction hours, and adherence to SMAQMD Rules 403 (which require watering of inactive and perimeter areas, track out requirements, etc.), would reduce PM_{10} fugitive dust impacts. As shown in Table 3.2-5 (Project Construction Air Emissions), impacts associated with PM_{10} would be below the SMAQMD threshold and, therefore, would be less than significant.

Table 3.2-5 Project Construction Air Emissions[1]

Emission Source	Pollutants (pounds/day)		
	ROG	NO_x	PM_{10}
Phases 1, 2A and 2B (approximately 18 months)			
Year 1			
Unmitigated Construction Emissions	12.69	80.68	13.42
Mitigated Emissions[2]	12.69	80.68	4.91
With Additional SMAQMD Mitigation (required 20-percent reduction) [3]	10.15	64.54	3.92
SMAQMD Threshold	NA	85	NA
Threshold Exceeded?	**NA**	**No**	**No**
Year 2			
Unmitigated Construction Emissions	12.75	87.14	3.68
Mitigated Emissions[2]	12.75	87.14	3.68
SMAQMD Threshold	NA	85	NA
With Additional SMAQMD Mitigation (required 20-percent reduction) [3]	10.2	69.71	2.94
SMAQMD Threshold	NA	85	NA
Threshold Exceeded?	**NA**	**No**	**No**
Phase 3A and 3B (approximately 27 months)			
Year 1			
Unmitigated Construction Emissions	14.56	95.45	34.11
Mitigated Emissions[2]	14.56	95.45	8.59
With Additional SMAQMD Mitigation (required 20-percent reduction) [3]	11.65	76.36	6.8
SMAQMD Threshold	NA	85	NA
Threshold Exceeded?	**NA**	**No**	**No**
Year 2			
Unmitigated Construction Emissions	10.64	65.84	2.70
Mitigated Emissions[2]	10.64	65.84	2.70
With Additional SMAQMD Mitigation (required 20-percent reduction) [3]	8.51	52.67	2.16
SMAQMD Threshold	NA	85	NA
Threshold Exceeded?	**NA**	**No**	**No**
Phase 4 (approximately 24 months)			
Year 1			
Unmitigated Construction Emissions	11.18	61.83	2.01
Mitigated Emissions[2]	11.18	61.83	2.01
With Additional SMAQMD Mitigation (required 20-percent reduction) [3]	8.94	49.46	1.61
SMAQMD Threshold	NA	85	NA

Emission Source	Pollutants (pounds/day)		
	ROG	NO_x	PM_{10}
Threshold Exceeded?	**NA**	**No**	**No**
Year 2			
Unmitigated Construction Emissions	11.18	61.83	2.01
Mitigated Emissions[2]	11.18	61.83	2.01
With Additional SMAQMD Mitigation (required 20-percent reduction) [3]	8.94	49.46	1.61
SMAQMD Threshold	NA	85	NA
Threshold Exceeded?	**NA**	**No**	**No**

1. Calculations include emissions from numerous sources, including grading, construction worker trips, stationary equipment, diesel mobile equipment, and asphalt off-gassing.
2. Refer to Appendix B (Air Quality Data) for assumptions used in this analysis, including quantified emissions reduction by standard mitigation. Mitigation includes applying soil stabilizers to inactive areas, replacing ground cover in disturbed areas quickly, watering exposed surfaces twice daily, and covering stockpiles with a tarpaulin, which are included in SMAQMD Rule 403.
3. The SMAQMD requires a 20-percent reduction in NO_x emissions as well as a 45-percent reduction in PM_{10}. In accordance with SMAQMD recommendations, the proposed project would be required to prepare a Construction Emissions/Dust Control Plan prior to construction. This plan would ensure that the required air emission reductions are met. The percentage reductions have been incorporated within the construction emissions calculations per SMAQMD guidance.

Source: Emissions were calculated using the URBEMIS 2002 Computer Model, as recommended by the SMAQMD.

ROG Emissions

The application of asphalt and surface coatings creates ROG emissions, which are O_3 precursors. In accordance with the methodology prescribed by the SMAQMD, the ROG emissions associated with paving have been quantified with the URBEMIS 2002 model (refer to Table 3.2-6). In addition, the project would comply with SMAQMD Rule 442 (Architectural Coatings), which specifies painting practices and regulates the ROG content of paint. Impacts associated with ROG emissions would be less than significant.

Construction Equipment and Worker Vehicle Exhaust

Exhaust emissions from construction activities include emissions associated with the transport of machinery and supplies to and from the project site, emissions produced on-site as the equipment is used, and emissions from trucks transporting materials to and from the site. The site would be balanced (i.e., there would be no import or export of soil). The emitted pollutants would include ROG, NO_X, and PM_{10}. As shown in Table 3.2-6, NO_x emissions during construction would not result in a significant air quality impact. NO_x emissions would be mitigated to less than significant levels with the implementation of the SMAQMD standard construction mitigation, as described in Mitigation Measure 3.2-1b. Per the SMAQMD, the project sponsor would be required to submit a Construction Emission/Dust Control Plan to the SMAQMD prior to commencing construction. The proposed project would be phased within a five-year period to reduce impact on sensitive receptors as well as to meet parking requirements. With the implementation of mitigation measures, impacts from short-term construction would be less than significant.

In accordance with the recommendations of the SMAQMD, the project sponsor would be required to implement the following mitigation measures to reduce temporary construction emissions. In addition, project construction activities would be required to comply with SMAQMD Rule 403 (Fugitive Dust),

Rule 442 (Architectural Coatings), and Rule 453 (Asphalt Paving). The project sponsor would also submit a Construction Emission/Dust Control Plan to the SMAQMD for review and approval prior to groundbreaking.

Mitigation Measure 3.2-1a: To reduce fugitive dust emissions, in compliance with Rule 403 of the Sacramento Metropolitan Air Quality Management District (SMAQMD), the following mitigation measures shall be implemented during construction:

- All disturbed areas, including storage piles that are not being actively used for construction purposes, shall be effectively stabilized of dust emissions using water, a chemical stabilizer or suppressant, or vegetative ground cover;
- All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or a chemical stabilizer or suppressant;
- When materials are transported off-site, all material shall be covered, effectively wetted to limit visible dust emissions, or maintained with at least six inches of freeboard space from the top of the container;
- All operations shall limit or expeditiously remove the accumulation of project generated mud or dirt from adjacent public streets at least once every 24 hours when operations are occurring;
- Following the addition of materials to, or the removal of materials from, the surfaces of outdoor storage piles, the storage piles shall be effectively stabilized of fugitive dust emissions using sufficient water or a chemical stabilizer or suppressant;
- On-site vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph);
- Wheel washers shall be installed for all trucks and equipment exiting from unpaved areas or wheels shall be washed manually to remove accumulated dirt prior to leaving the site;
- Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from adjacent project areas with a slope greater than one percent;
- Excavation and grading activities shall be suspended when winds exceed 20 mph; and
- The extent of areas simultaneously subject to excavation and grading shall be limited, wherever possible, to the minimum area feasible.

Mitigation Measure 3.2-1b: To reduce nitrogen oxides (NO_X) and visible emissions from heavy-duty diesel equipment, the following measures shall be implemented prior to and during construction:

- The project shall provide a plan for approval by the City of Sacramento and the SMAQMD demonstrating that the heavy-duty (≥50 horsepower) off-road vehicles to be used in the construction project, including owned, leased, and subcontractor vehicles, would achieve project-wide fleet-averages of 20-percent NO_X reduction and 45 percent particulate reduction compared to the most recent California Air Resources Board (CARB) fleet average at the time of construction; and the project sponsor shall submit a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that would be used an aggregate of 40 or more hours during any portion of the construction project. The inventory shall be updated and submitted monthly throughout the duration of the project,

except that an inventory shall not be required for any 30-day period in which no construction operations occur. At least 48 hours prior to the use of subject heavy-duty off-road equipment, the project sponsor shall provide the City and SMAQMD with the anticipated construction time line (including start date), and the name and telephone number of the project manager and on-site foreman. Acceptable options for reducing emissions include the use of late-model engines, low-emission diesel products, alternative fuels, particulate matter traps, engine retrofit technology, after-treatment products, and/or other options as they become available.

- The project shall ensure that emissions from off-road diesel-powered equipment used on the project site do not exceed 40-percent opacity for more than three minutes in any one hour. Any equipment found to exceed 40-percent opacity (or Ringlemann 2.0) shall be repaired immediately, and the City and SMAQMD shall be notified within 48 hours of identification of noncompliant equipment. A visual survey of all in-operation equipment shall be made at least weekly, and a monthly summary of visual survey results shall be submitted throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which no construction operations occur. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey. The City and SMAQMD and/or other officials may conduct periodic site inspections to determine compliance. The above recommendations shall not supersede other SMAQMD or state rules and regulations.
- The primary contractor shall be responsible for ensuring that all heavy-duty equipment is properly tuned and maintained, in accordance with manufacturers' specifications.

Impact 3.2-2: Operation of the proposed project would contribute to increased concentrations of ozone precursors. (Less Than Significant Impact)

Mobile Source Emissions

Mobile sources emissions would be generated from the vehicle trips generated by the proposed project. An estimated 6,395 daily vehicle trips would be generated by the project. The medical office would generate 2,960 trips, while the expansion of the hospital would generate approximately 3,435 daily trips. The current facility is operating under a Transportation Management Plan, which encourages carpooling and provides other incentive for alternative modes of commuting. The proposed project would revise this Transportation Management Plan to address the additional daily trips associated with the proposed project.

Area Source Emissions

Area source emissions would be generated by the increased consumption of electrical energy and natural gas associated with the proposed project. This assumption is based on the supposition that those power plants supplying electricity to the site are utilizing fossil fuels. Electric power generating plants are distributed throughout the Basin and western United States, and their emissions contribute to the total regional pollutant burden. The primary use of natural gas by the proposed project would be for combustion to produce space heating, water heating, miscellaneous heating, air conditioning, consumer products and medical equipment.

Total Operational Emissions

As shown in Table 3.2-6 (Project Operational Air Emissions), the project operational emissions would result in 36.79 pounds (lbs)/day of ROGs, 43.23 lbs/day of NO_X, and 49.00 lbs/day of PM_{10} of

unmitigated emissions upon completion. As indicated in Table 3.2-6, the proposed project would not exceed the SMAQMD standards for ROGs and NOx, and would result in a less than significant impact on long-term operational air quality.

Table 3.2-6 Project Operational Air Emissions

Emission Source	Pollutants (lbs/day)		
	ROG	NO_x	PM_{10}
Area Source Emissions	3.79	1.64	0.01
Mobile Source Emissions	33.0	41.59	48.99
SMAQMD Threshold	36.79	43.23	49.00
Threshold Exceeded?	**No**	**No**	**NA**

1. Refer to the worksheets in Appendix B (Air Quality Data) for detailed assumptions.
2. Mitigation measures were not recommended or programmed in the URBEMIS 2002 model since unmitigated emissions did not exceed the SMAQMD thresholds for ROG and NO_x.

Source: Emissions were calculated using the URBEMIS 2002 Computer Model, as recommended by the SMAQMD.

Impact 3.2-3: Operation of the proposed project would increase traffic, which would contribute to concentrations of carbon monoxide (CO) at busy roadways and intersections. (Less Than Significant Impact)

Local air quality is a major concern along roadways. CO is a primary pollutant and, unlike ozone, is directly emitted from a variety of sources. For this reason, CO concentrations are usually indicative of the local air quality generated by a roadway network and are used as an indicator of its impacts upon the local air quality. Comparisons of levels with state and federal CO standards indicate the severity of the existing concentrations for receptors in the project area.

An impact is potentially significant if the project produces emissions levels that exceed the state or federal ambient air quality standards (AAQS) (refer to Table 3.2-3). Because CO is produced in greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, adherence to AAQS is typically demonstrated through an analysis of localized CO concentrations. Areas of vehicle congestion have the potential to create pockets of CO called "hot spots." These hot spots have the potential to exceed the state 1-hour standard of 20.0 ppm and/or the 8-hour standard of 9.0 ppm. Note that federal levels are based on 1- and 8-hour standards of 35.0 and 9.0 ppm, respectively.

Because traffic congestion is highest at intersections where vehicles queue and are subject to reduced speeds, hot spots are typically produced at intersection locations. To identify CO hotspots, intersections operating at level of service (LOS) D or worse were analyzed using the CALINE4 model.[1] A higher LOS would result in greater risk of a CO hot-spot. Table 3.2-7 (Future Year 2025 Traffic Level of Service), indicates the volume–to-capacity (VC ratio) along with the LOS for intersections that could potentially lead to CO hotspots. As shown in Table 3.2-8, five intersections (Mack Road/Valley Hi Drive-La Mancha Way, Cosumnes River Boulevard/Bruceville Road, Cosumnes River Boulevard/SR 99 SB Ramps, and Calvine Road/Power Inn Road) would require a CO hot-spot analysis.

[1] Greg Tholen, Sacramento Metropolitan Air Quality Management District, personal communication, December 19, 2005.

Table 3.2-8 (Year 2025 Carbon Monoxide Concentrations), indicates the results from the CO modeling analysis. The analysis provides a worst-case scenario. Intersection turning movements are based on traffic data. The PM peak hour was utilized in the analysis because it results in a higher VC ratio (i.e., worse LOS). Year 2025 projections were modeled using the existing lane configurations and included the improvements discussed in the traffic analysis. The projected traffic volumes were then modeled using the CALINE-4 dispersion model. The resultant values were then added to an ambient concentration.

The maximum Year 2025 1-hour CO concentration would be 2.8 ppm for the Cosumnes River Boulevard/Bruceville Road intersection, and the 8-hour CO concentration would be 1.96 ppm. The CO levels would be well below the state and federal 1- and 8-hour standards. All other intersections would be below the Cosumnes River Boulevard/Bruceville Road concentrations. Therefore, the proposed project would not result in adverse CO emissions, and impacts would be less than significant.

Table 3.2-7 Future Year 2025 Traffic Level of Service

Intersection	Without Project		With Project	
	AM Peak Hour VC Ratio (LOS)	PM Peak Hour VC Ratio (LOS)	AM Peak Hour VC Ratio (LOS)	PM Peak Hour VC Ratio (LOS)
1. Mack Road/Valley Hi Drive-La Mancha Way	32.0 (C)	**37.0 (D)**	32.0 (C)	**38.9 (D)**
2. Mack Road/Alta Valley Way	10.4 (B)	31.7 (C)	12.4 (B)	33.9 (C)
3. Valley Hi Drive/Bruceville Road-Bamford Drive	21.6 (C)	26. 3 (C)	21.9 (C)	27.3 (C)
4. Valley Hi Drive/Wyndham Drive	19.0 (C)	23.3 (C)	19.8 (C)	**25.8 (D)**
5. Bruceville Road/Alta Valley Way	23.0 (C)	30.9 (C)	24.1 (C)	34.4 (C)
6. Bruceville Road/SR 99 SB Ramps	24.1 (C)	22.4 (C)	24.8 (C)	22.9 (C)
7. Bruceville Road/Kaiser Access	23.5 (C)	123.1 (F)	**111.0 (F)**	**120.7 (F)**
8. Bruceville Road/Wyndham Drive	14.7 (B)	16.2 (B)	14.3 (B)	16.0 (B)
9. Wyndham Drive/Arroyo Vista Drive	11.2 (B)	12.2 (B)	13.5 (B)	14.0 (B)
10. Wyndham Drive/Kaiser Access	12.6 (B)	12.9 (B)	--	--
11. Cosumnes River Boulevard/Bruceville Road	**90.8 (F)**	**182.1 (F)**	**93.1 (F)**	**191.6 (F)**
12. Cosumnes River Boulevard/SR 99 SB Ramps	**111.5 (F)**	**115.7 (F)**	**117.6 (F)**	**118.9 (F)**
13. Cosumnes River Boulevard/SR 99 NB Ramps	9.7 (A)	14.0 (B)	10.0 (A)	14.1 (B)
14. Calvine Road/Power Inn Road	**1.571 (F)**	**1.831 (F)**	**1.581 (F)**	**1.831 (F)**

VC = volume-to-capacity

Source: Fehr & Peers, 2005.

Table 3.2-8 Year 2025 Carbon Monoxide Concentrations

Intersection	Carbon Monoxide (parts per million)			
	1-Hour		8-Hour	
	1-Hour Standard	Project Emissions	8-Hour Standard	Project Emissions
Mack Road/Valley Hi Drive-La Mancha Way	20	2.5	9	1.75
Valley Hi Drive/Wyndham Drive	20	2.3	9	1.61
Bruceville Road/Kaiser Access	20	2.3	9	1.61
Cosumnes River Boulevard/Bruceville Road	20	2.8	9	1.96
Cosumnes River Boulevard/SR 99 SB Ramps	20	2.7	9	1.89
Calvine Road/Power Inn Road	20	2.7	9	1.89

1. Carbon monoxide (CO) was measured at a distance of 10 feet from the corner of the intersection predicting the highest value. Presented 1-hour CO concentrations include a background concentration of 2.20 ppm (derived from the SMAQMD Isopleth Tables). Eight-hour concentrations are based on a persistence of 0.7 of the 1-hour concentration.
2. The state 1-hour standard is 20 ppm; the federal standard is 35 ppm. The most stringent standard is reflected in the table.
3. Both the state 8-hour and federal 8-hour standard is 9 ppm.

Source: Air Quality Data (Appendix B).

Impact 3.2-4: The proposed project would not significantly increase toxic air contaminants (TACs). (Less Than Significant Impact)

Stationary Sources

The proposed project would result in the use of stationary mechanical equipment (such as backup generators and equipment at the central utility plant) that could generate toxic air contaminants (TACs). These TACs could potentially affect both existing on- and off-site sensitive land uses. Under SMAQMD Rule 201 (General Permit Requirements) and Rule 207 (Title V Federal Operating Permit Program), all sources that possess the potential to emit TACs are required to obtain permits from the SMAQMD. Permits may be granted to these operations if they are constructed and operated in accordance with applicable regulations, including Rule 202 (New Source Review) and Rule 904 (Air Toxics Control Measures). Given that compliance with applicable standards is required for the construction and operation of land uses that may result in the emissions of TACs, emissions from routine use of the equipment are expected to be within established standards. Thus, a less than significant impact would result.

Impact 3.2-5: The proposed project would not alter air movements, moisture, or temperature, or cause any change in climate. (Less Than Significant Impact)

The project would not result in the alteration of air movement, moisture, or temperature, or in any change in climate, either locally or regionally. Therefore, a less than significant impact would result.

Impact 3.2-6: The proposed project would not create objectionable odors. (Less Than Significant Impact)

Construction equipment and materials could emit odors perceptible to residents within the project vicinity. However, any construction-related odors would be localized to the immediate vicinity of construction operations and would be temporary (i.e., would occur only during active construction). Operation of the proposed project, including the chiller addition, would not create permanent objectionable odors. Therefore, impacts would be less than significant.

3.2.4 Cumulative Impacts

As stated in the SMAQMD Guide to Air Quality Assessment in Sacramento County, development projects would be considered cumulatively significant if the project requires a change in the existing land use designation (e.g., general plan amendment or rezone) and if project emissions (ROGs and NO_x) of the proposed project are greater than the emissions anticipated for the site if developed under the existing land use designation. The proposed project would not require a change in land use designation since it proposes additional facilities and the expansion of the existing hospital. Additionally, as indicated in the analysis above, the proposed project would not result in short-term or long-term air quality and toxics impacts. Therefore, cumulative impacts would be less than significant.

3.3 TRANSPORTATION AND CIRCULATION

This section describes the potential impacts on the transportation system of the proposed Kaiser South Sacramento Medical Center Expansion (project). The traffic impact analysis examines the roadway, transit, and bicycle/pedestrian components of the overall transportation system under baseline and cumulative (Year 2025) conditions, with and without the proposed project. Significant impacts as defined by CEQA are identified for each component and, as necessary, mitigation measures are identified to offset those impacts. The data used in this analysis of transportation and circulation impacts are in Traffic Data (Appendix C).

This section has two parts: the environmental setting, which describes the existing transportation system, and the impact analysis, which includes standards of significance used in the evaluation, specific project impacts, and proposed mitigation measures.

3.3.1 Environmental Setting

The existing roadway, transit, bicycle, and pedestrian components of the transportation system are described below. Figure 3.3-1 (Study Area) displays the roadways within the study area.

3.3.1.1 Roadway System

The roadway network in the vicinity of the proposed project is described below.

- *State Route 99 (SR 99)* is six lanes (two mixed-flow lanes and one high-occupancy vehicle lane in each direction) within the study area. SR 99 serves as the commute corridor between downtown and the southern area of the City of Sacramento and the City of Elk Grove.
- *Bruceville Road* is a north-south roadway continuing from Valley Hi Drive just south of Mack Road and extending south beyond Elk Grove Boulevard. Bruceville Road is four lanes north of Cosumnes River Boulevard, within the project area. South of Cosumnes River Boulevard, it is being widened from a two-lane roadway to a minimum of four lanes. This road provides access to the existing Medical Center north of the Wyndham Drive/Bruceville Road intersection and at the Alta Valley Way/Bruceville Road intersection.
- *Mack Road* is a four-lane roadway that connects West Stockton Boulevard to Brookfield Drive. It continues west to I-5 as Meadowview Drive and east as Elsie Avenue, and provides access to SR 99.
- *Cosumnes River Boulevard* intersects Franklin Boulevard, continues east as a two-lane roadway, and widens to six lanes just east of Bruceville Road. This road becomes Calvine Road just east of SR 99 and continues into the City of Elk Grove.
- *Valley Hi Drive* is a two- to four-lane roadway from Mack Road to Center Parkway.
- *Wyndham Drive* is a two-lane east-west roadway that connects Bruceville Road and Valley Hi Drive. This road provides access to the Medical Center.

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STUDY AREA

FIGURE 3.3-1

- *Arroyo Vista Drive* is a two-lane north-south roadway that serves residential uses south of Wyndham Drive.

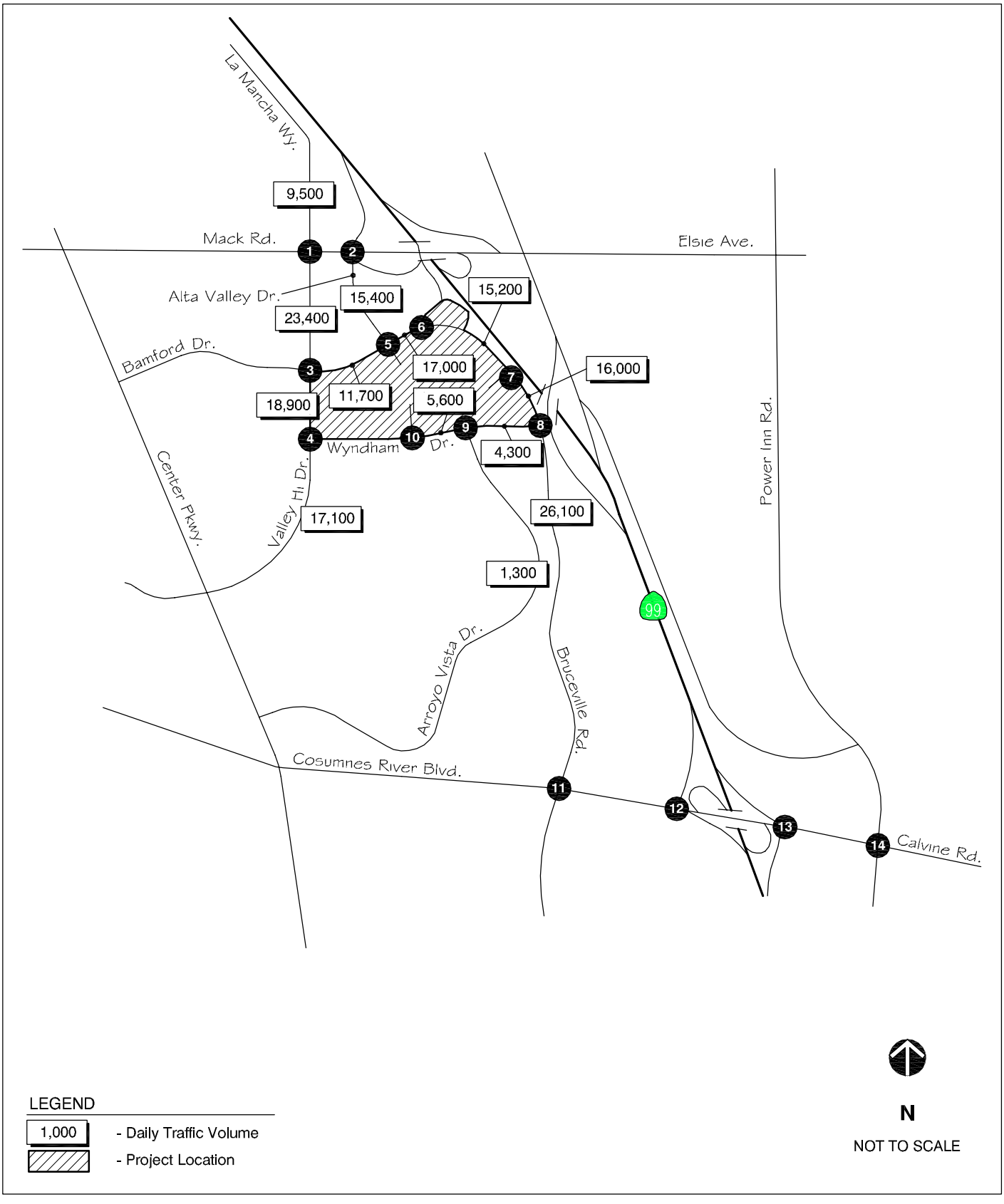
3.3.1.2 Study Intersections

The fourteen study intersections selected in consultation with the City of Sacramento staff are:

1. Mack Road/Valley Hi Drive – La Mancha Way
2. Mack Road/Alta Valley Way
3. Valley Hi Drive/Bruceville Road – Bamford Drive
4. Valley Hi Drive/Wyndham Way
5. Bruceville Road/Alta Valley Way (Existing Medical Center Access)
6. Bruceville Road/SR 99 Southbound Ramps
7. Bruceville Road/Kaiser Medical Center Access
8. Bruceville Road/Wyndham Drive
9. Wyndham Drive/Arroyo Vista Drive
10. Wyndham Drive/Kaiser Medical Center Access
11. Cosumnes River Boulevard/Bruceville Road
12. Cosumnes River Boulevard/SR 99 Southbound Ramps
13. Cosumnes River Boulevard/SR 99 Northbound Ramps
14. Calvine Road/Power Inn Road

Traffic counts were collected during the AM (7:00 – 9:00) and PM (4:00 – 6:00) peak hours at four study intersections in March 2005 and at ten intersections in June 2005. All traffic counts were conducted while school was in session. The existing peak-hour traffic volumes, lane configurations, and traffic controls at each study intersection are displayed in Figures 3.3-2A/B (Peak Hour and Average Daily Traffic Volumes and Lane Configurations – Existing Conditions).

Signal timings were collected from the California Department of Transportation (Caltrans) for the intersections on Cosumnes River Boulevard at the SR 99 northbound and southbound off-ramps. The City of Sacramento provided the existing signal timings for the Mack Road/Valley Hi Drive-La Mancha Way, Valley Hi Drive/Bruceville Road, Bruceville Road/Alta Valley Way, Cosumnes River Boulevard/Bruceville Road, and Bruceville Road/SR 99 southbound ramps intersections. The County of Sacramento provided the signal timing data for the Calvine Road/Power Inn Road intersection.



PEAK HOUR AND AVERAGE DAILY TRAFFIC VOLUMES AND LANE CONFIGURATIONS - EXISTING CONDITIONS

FIGURE 3.3-2A

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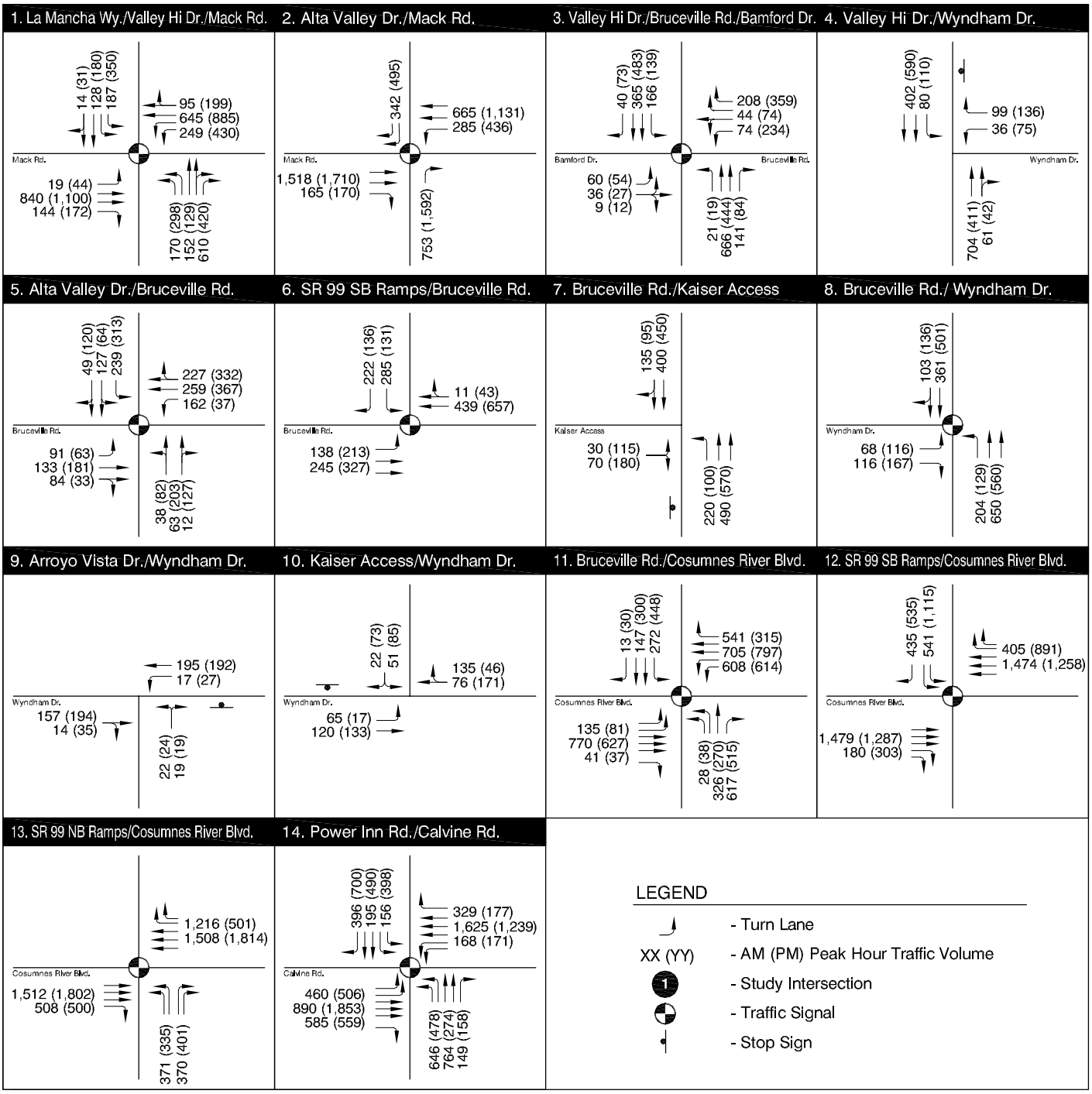

PEAK HOUR AND AVERAGE DAILY TRAFFIC VOLUMES AND LANE CONFIGURATIONS - EXISTING CONDITIONS

FIGURE 3.3-2B

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3.3.1.3 Analysis Methodology

Traffic level of service (LOS) is a qualitative measure describing the operating condition of intersections and roadways. LOS ranges from A through F, which represents driving conditions from best to worst, respectively. In general, LOS A represents free-flow conditions with no congestion, and LOS F represents severe congestion and delay under stop-and-go conditions.

Signalized Intersections

The signalized intersections were analyzed using the methodology presented in the *Highway Capacity Manual (2000 HCM),* Transportation Research Board, 2000. This methodology determines the LOS at signalized intersections by comparing the average traffic control delay per vehicle at the intersection to the thresholds shown in Table 3.3-1 (Level of Service Definitions for Signalized Intersections [City of Sacramento and Caltrans]). Traffic signal timing was assumed to remain the same as the existing timing for all analysis scenarios.

Table 3.3-1. Level of Service Definitions for Signalized Intersections (City of Sacramento and Caltrans)

Level of Service	Description	Average Traffic Control Delay per Vehicle (seconds)
A	Operations with very low delay occurring, with favorable progression and/or short cycle lengths.	≤ 10.0
B	Operations with low delay occurring, with good progression and/or short cycle lengths.	10.1 – 20.0
C	Operations with average delays, resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.1 – 35.0
D	Operations with longer delays, due to a combination of unfavorable progression, long cycle lengths, or high volume-to-capacity ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 – 55.0
E	Operations with high delay values, indicating poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	55.1 – 80.0
F	Operation with delays unacceptable to most drivers occurring, due to over saturation, poor progression, or very long cycle lengths.	> 80.0

Source*:* Transportation Research Board, *Highway Capacity Manual,* 2000.

In accordance with Sacramento County's *Traffic Impact Guidelines* (2004), signalized intersections in Sacramento County were analyzed using the methodology described in *Interim Materials on Highway Capacity – Circular 212* (Transportation Research Board, 1980). This methodology calculates LOS based on the volume-to-capacity ratio (V/C) of critical lane volumes. As specified in the *Traffic Impact Analysis Guidelines,* a peak-hour factor (PHF) of 1.0 was assumed at each intersection to represent hourly conditions. The critical lane capacities and V/C LOS thresholds are presented in Table 3.3-2 (Level of Service Criteria for Signalized Intersections [Sacramento County]).

Table 3.3-2. Level of Service Criteria for Signalized Intersections (Sacramento County)

Level of Service	Sum of Critical Lane Volumes by Signal Phasing (vehicles/critical lane/hour)			Volume-to-Capacity Ratio
	2 Phases	3 Phases	4+ Phases	
A	0-990	0-930	0-900	< 0.60
B	991-1155	931-1085	901-1050	0.61 – 0.70
C	1156-1320	1086-1240	1051-1200	0.71 – 0.80
D	1321-1485	1241-1395	1201-1350	0.81 – 0.90
E	1486-1650	1396-1550	1351-1500	0.91 – 1.00
F	>1650	>1550	>1500	>1.00

Source: Transportation Research Board, *Interim Materials on Highway Capacity, Circular 212,* 1980; and *County of Sacramento Traffic Impact Analysis Guidelines.*

Unsignalized Intersections

The unsignalized intersections were also analyzed using methods described in the *2000 HCM*. This methodology reports the LOS using the control delay thresholds shown in Table 3.3-3 (Level of Service Definitions for Unsignalized Intersections). As described in the *2000 HCM,* the LOS for all-way stop controlled intersections is based on the average control delay for the entire intersection. Conversely, for side-street stop-controlled intersections, the LOS is measured separately for each individual movement. To be consistent with the City's significance criteria the intersection LOS designation is based on the average control delay for the intersection. Control delay for the worst-case movement is reported for information only.

Table 3.3-3. Level of Service Definitions for Unsignalized Intersections

Level of Service	Average Control Delay (seconds/vehicle)
A	≤ 10.0
B	10.1 – 15.0
C	15.1 – 25.0
D	25.1 – 35.0
E	35.1 – 50.0
F	> 50.0

Source*:* Transportation Research Board, *Highway Capacity Manual,* 2000.

The Valley Hi Drive/Wyndham Drive, Bruceville Road/Wyndham Drive, Bruceville Road/Kaiser Access, Wyndham Drive/Arroyo Vista Drive – Kaiser Access intersections were evaluated to determine whether they would meet the peak hour traffic signal warrants (*Manual of Uniform Traffic Control Devices*, 2003). The peak-hour warrant is one of several criteria used to determine whether a traffic signal is warranted. Refer to Traffic Data (Appendix C).

3.3.1.4 Intersection Operations

The traffic volumes displayed in Figures 3.3-2A/B were used to determine the existing operations at each study intersection. Table 3.3-4 (Peak Hour Intersection Operations – Existing Conditions) summarizes the traffic operations during the AM and PM peak hours. Twelve of the study intersections operate acceptably; the following intersection operates unacceptably:

- Calvine Road/Power Inn Road – LOS F during the PM peak hour

Table 3.3-4. Peak Hour Intersection Operations – Existing Conditions

Intersection	Control	Average Delay (seconds per vehicle) or Volume-to-Capacity Ratio (Level of Service)	
		AM Peak Hour	PM Peak Hour
1. Mack Road/Valley Hi Drive–-La Mancha Way	Signal	29.7 (C)	30.0 (C)
2. Mack Road/Alta Valley Way	Signal	10.2 (B)	20.2 (C)
3. Valley Hi Drive/Bruceville Road–Bamford Drive	Signal	21.4 (C)	26.5 (C)
4. Valley Hi Drive/Wyndham Drive	TWSC	2.1 (A) 16.0 (C)	3.2 (A) 16.1 (C)
5. Bruceville Road/Alta Valley Way	Signal	22.4 (C)	29.0 (C)
6. Bruceville Road/SR 99 Southbound Ramps	Signal	22.7 (C)	18.1 (B)
7. Bruceville Road/Kaiser Access	TWSC	3.1 (A) 21.7 (C)	12.8 (B) 62.5 (F)
8. Bruceville Road/Wyndham Drive	Signal	14.4 (B)	16.1 (B)
9. Wyndham Drive/Arroyo Vista Drive	TWSC	1.3 (A) 10.4 (B)	1.4 (A) 10.9 (B)
10. Wyndham Drive/Kaiser Access	TWSC	2.8 (A) 11.1 (B)	3.7 (A) 11.4 (B)
11. Cosumnes River Boulevard/Bruceville Road	Signal	34.1 (C)	33.6 (C)
12. Cosumnes River Boulevard/SR 99 Southbound Ramps	Signal	14.7 (B)	19.4 (B)
13. Cosumnes River Boulevard/SR 99 Northbound Ramps	Signal	8.3 (A)	9.6 (A)
14. Calvine Road/Power Inn Road	Signal[1]	0.97[1] (E)	**1.06[1] (F)**

1. County of Sacramento Traffic Signal – Volume-to-Capacity Ratio
Boldface value in shaded cell indicates an unacceptable LOS.

Source: Fehr & Peers, 2005.

3.3.1.5 Study Roadways

Daily (24-hour) traffic counts were conducted on twelve roadway segments in June 2005. Throughout this report, daily traffic volumes are reported for each scenario as a measure of the magnitude of traffic volume change. In the study area, the basic roadway system has been established and intersection operations are the limiting factor that may result in an impact.

3.3.1.6 Freeway Facilities

Freeway Ramps

A merge and diverge analysis was conducted for the following freeway ramps:

1. SR 99 northbound loop on-ramp from eastbound Mack Road
2. SR 99 northbound slip on-ramp from westbound Mack Road
3. SR 99 southbound off-ramp to westbound Mack Road
4. SR 99 southbound off-ramp to eastbound Mack Road and Bruceville Road
5. SR 99 southbound on-ramp at Bruceville Road

Freeway ramp junctions were analyzed using the Highway Capacity Software (HCS), which applies the Highway Capacity Manual procedures. Table 3.3-5 (Freeway Ramp Merge and Diverge Level of Service Criteria) presents the freeway ramps merge and diverge LOS criteria.

Table 3.3-5. Freeway Ramp Merge and Diverge Level of Service Criteria

LOS	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 to 20
C	speeds are 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 to 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 to 35
E	Operation is 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
F	Represents a breakdown in flow.	Volume exceeds capacity
1. Density in passenger cars per mile per lane.		

Source: Transportation Research Board, *Highway Capacity Manual,*(2000.

Table 3.3-6 (Freeway Ramp Operations – Existing Conditions) presents the results of the freeway ramp LOS analysis. The following ramps are operating at unacceptable levels of service:

- SR 99 northbound loop on-ramp from eastbound Mack Road – LOS F during the AM peak hour
- SR 99 northbound slip on-ramp from westbound Mack Road – LOS F during the AM peak hour
- SR 99 southbound off-ramp to westbound Mack Road – LOS F during the PM peak hour
- SR 99 southbound off-ramp to Mack Road and Bruceville Road – LOS F during the PM peak hour
- SR 99 southbound on-ramp from Bruceville Road – LOS F during the PM peak hour

Table 3.3-6. Freeway Ramp Operations – Existing Conditions

Freeway Ramp Junction	Evaluation Type	AM Peak-Hour			PM Peak-Hour		
		Volume	Density [1]	LOS [2]	Volume	Density	LOS
SR 99 Northbound loop on-ramp from Mack Road	Merge	1,055	52.3	**F**	1,700	33.2	D
SR 99 Northbound slip on-ramp from Mack Road	Merge	585	57.2	**F**	350	33.3	D
SR 99 Southbound off-ramp to westbound Mack Road	Diverge	342	34.7	D	495	58.4	**F**
SR 99 Southbound off-ramp to eastbound Mack Road and Bruceville Road	Diverge	879	37.1	E	1261	60.5	**F**
SR 99 Southbound on-ramp from Bruceville Road	Merge	149	25.6	C	256	44.2	**F**

1. Density in passenger cars per mile per lane.
2. Level of service (LOS) calculations are based on the *Highway Capacity Manual* 2000 procedures

Boldface value in shaded cell indicates intersection is an unacceptable LOS.

Source: Fehr & Peers, 2005.

Freeway Ramps Queue Lengths

Queue lengths at the northbound and southbound SR 99 off-ramps at the Mack Road and Cosumnes River Boulevard interchanges were analyzed during the peak hours using the Synchro 6.0 intersection analysis software program. The 95th percentile queues were determined and compared to the available storage on the ramps. Table 3.3-7 (Off-Ramp Queues – Existing Conditions) shows the queue lengths for existing conditions. From the table it can be seen that, vehicles exiting the SR 99 off-ramps at the two interchanges are not expected to queue onto the SR 99 mainline.

Table 3.3-7. Off-Ramp Queues – Existing Conditions

Off-Ramp	Movement	Storage Provided[1]	Peak Hour	95th Percentile Queue[2]
				No Project
SR 99/ Cosumnes River Boulevard Northbound Off–Ramp	Left	1,380 feet +500 feet	AM	155 feet
			PM	135 feet
	Right	1,380 feet +500 feet	AM	150 feet
			PM	180 feet
SR 99/ Cosumnes River Boulevard Southbound Off-Ramp	Left	1,250 feet +500 feet	AM	180 feet
			PM	400 feet
	Right	1,250 feet	AM	420 feet[3]
			PM	545 feet[3]
SR 99/ Bruceville Road Southbound Off-Ramp	Left	1,680 feet +130 feet	AM	310 feet
			PM	205 feet
	Right	1,680 feet +130 feet	AM	230 feet
			PM	125 feet
SR 99/ Westbound Mack Road Southbound Off-Ramp	Right	1,500 feet +250 feet	AM	220 feet
			PM	500 feet

1. Storage is measured from stop line to gore point plus additional storage that is provided by dual turn lanes (i.e., +500 feet indicates that a second turn lane with 500 feet of storage is provided).
2. 95th percentile queue reported in feet per lane.
3. Vehicle queues may be longer than reported. Queue shown is maximum after two cycles.

Source: Fehr & Peers, 2005.

Freeway Mainline

An analysis was conducted for the following freeway mainline segments:

1. SR 99 northbound between the Mack Road slip on-ramp and Florin Road off-ramp
2. SR 99 northbound south of the Mack Road loop on-ramp
3. SR 99 southbound between Florin Road on-ramp and the Mack Road slip off-ramp
4. SR 99 southbound south of the Mack Road/Bruceville Road off-ramp

Freeway mainline segments were analyzed using the HCS, which applies the HCM 2000 procedures. Table 3.3-8 (Freeway Mainline Level of Service Criteria) presents the freeway mainline segment analysis criteria.

Table 3.3-8. Freeway Mainline Level of Service Criteria

Level of Service (LOS)	Density[1]
A	≤10
B	>10 to 16
C	>16 to 24
D	>24 to 32
E	>32 to 45
F	>45

1. Density in passenger cars per mile per lane.
Level of service (LOS) calculations are based on the *Highway Capacity Manual* 2000 procedures.

Source: Transportation Research Board, *Highway Capacity Manual*, 2000.

Based on vehicle density, the following freeway segments operate at an unacceptable LOS (LOS F); refer to Table 3.3-9 (Freeway Mainline Operating Conditions – Existing Conditions):

- Northbound SR 99 north of Mack Road – LOS F during the AM peak hour
- Northbound SR 99 south of Mack Road – LOS F during the AM peak hour
- Southbound SR 99 north of Mack Road – LOS F during the PM peak hour
- Southbound SR 99 south of Mack Road – LOS F during the PM peak hour

Table 3.3-9. Freeway Mainline Operating Conditions – Existing Conditions

Location	AM Peak Hour			PM Peak Hour		
	Volume	Density[1]	LOS[2]	Volume	Density	LOS[2]
Northbound SR 99 north of Mack Road	8,190	>45	**F**	4,780	28.7	D
Northbound SR 99 south of Mack Road	6,550	>45	**F**	2,730	16.1	B
Southbound SR 99 north of Mack Road	4,610	27.5	D	7,790	>45	**F**
Southbound SR 99 south of Mack Road	3,538	20.8	C	6,290	>45	**F**

1. Density in passenger cars per mile per lane.
2. Calculated LOS. Segment LOS can be impacted by downstream congestion.
Boldface value in shaded cell indicates intersection is an unacceptable LOS.

Source: Fehr & Peers, 2005.

3.3.1.7 Bicycle and Pedestrian Facilities

Existing and planned bicycle facilities within the study area are displayed in Figure 3.3-3 (Existing and Proposed Bicycle Facilities). As shown, no off-street bike paths are located within the study area. Class II on-street bike lanes (signed and striped) are located on Bruceville Road north of Cosumnes River Boulevard and on Cosumnes River Boulevard west of Center Parkway and east of Bruceville Road. A Class III on-street bike route exists on the SR 99 overpass. According to the *Sacramento City/County 2010 Bikeway Master Plan* (September 1992), Class II on-street bike lanes are planned along Bruceville Road south of Cosumnes River Boulevard and the remaining portion of Cosumnes River Boulevard.

In the study area, sidewalks are provided on both sides of Valley Hi Drive, Bruceville Road north of Cosumnes River Boulevard, Mack Road west of Valley Hi Drive, and Cosumnes River Boulevard east of Bruceville Road. A sidewalk along the west side of Bruceville Road and south side of Cosumnes River Boulevard provides a pedestrian connection to Cosumnes River College. Wyndham Drive and Arroyo Vista Drive also have sidewalks.

3.3.1.8 Transit Service

The Sacramento Regional Transit District (RT) provides public transit service within the project area, as shown in Figure 3.3-4 (Existing Transit Service). Five routes provide direct fixed-route service to the project area. Bus stops are located along Bruceville Road between Valley Hi Drive and Alta Valley Way, and along Valley Hi Drive. These bus routes are described below:

- *Route 4 (Meadowview – Gerber)* provides service between the Meadowview Light Rail Station and Gerber Road, traveling on Valley Hi Drive, Bruceville Road, and Alta Valley Way in the study area.

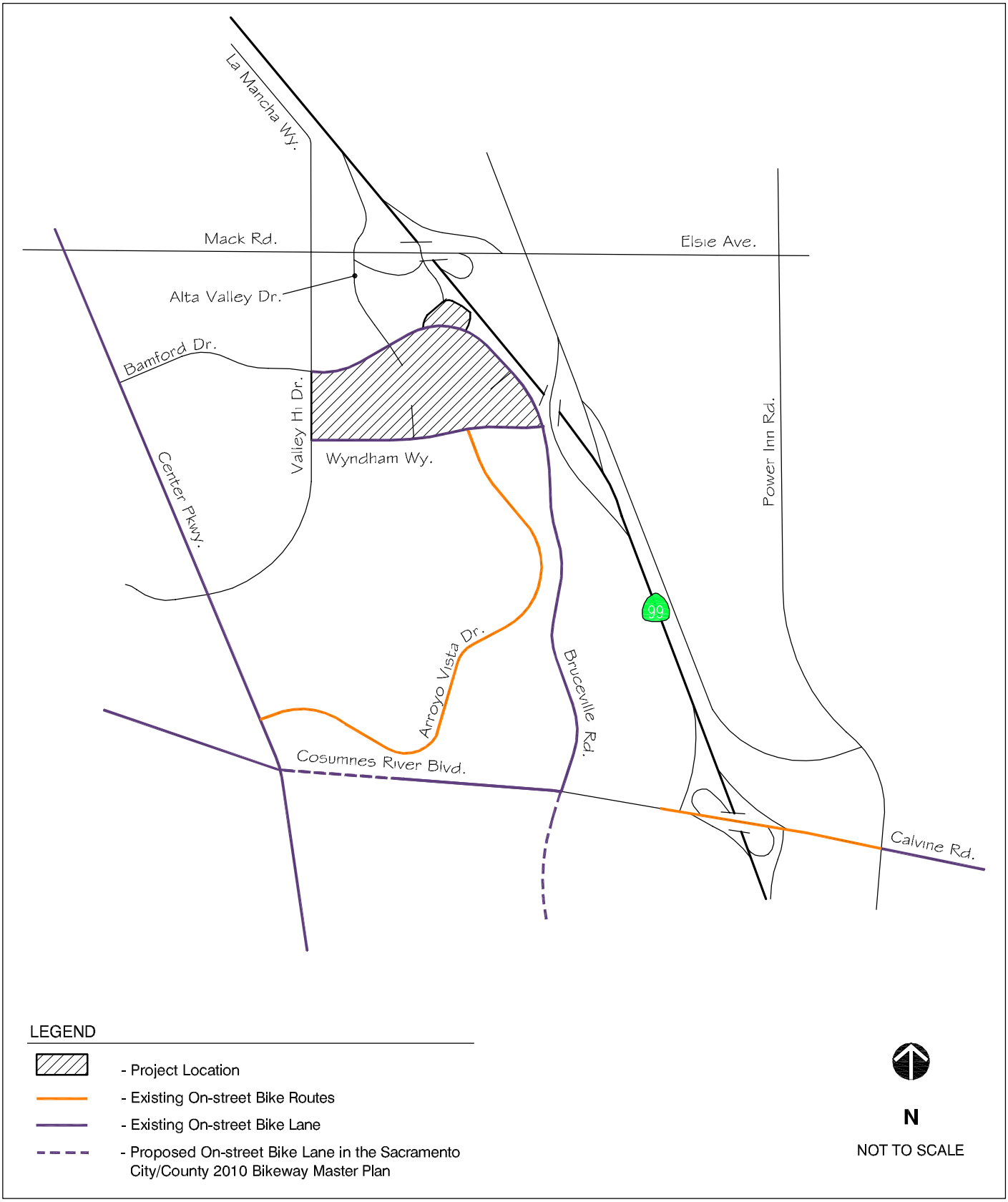
- *Route 5 (Meadowview- Valley Hi)* operates between the Meadowview Light Rail Station and Florin High School traveling on Valley Hi Drive, Bruceville Road, and Alta Valley Drive in the study area.

- *Route 54 (Center Parkway)* operates between the Florin Light Rail Station and Cosumnes River College Transit Center, traveling on Center Parkway and Bruceville Road in the study area.

- *Route 55 (Scottsdale)* provides service between the Florin Mall Transit Center and Cosumnes River College Transit Center, traveling on Bruceville Road and Timberlake Way in the study area.

- *Route 56 (Elk Grove - Pocket)* operates between the Pocket Transit Center, Meadowview Light Rail Station, and Cosumnes River College Transit Center, traveling on Bruceville Road and Timberlake Way in the study area.

The RT South Line extension will provide future light rail transit service to the project area. RT is conducting the planning study and preparing the environmental documents for Phase 2 of the South Line extension from Meadowview to Cosumnes River College. Phase 2 will provide an additional four miles of light rail transit service in South Sacramento, with stops planned along Cosumnes River Boulevard at Franklin Boulevard and Center Parkway, and on Bruceville Road at Cosumnes River College. The final environmental documents are expected to be completed in the summer of 2006 and construction is planned between 2007 and 2010.



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EXISTING AND PROPOSED BICYCLE FACILITIES

FIGURE 3.3-3

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EXISTING TRANSIT SERVICE

FIGURE 3.3-4

3.3.1.9 Project Land Use and Circulation

The proposed project is located in the area bounded by Bruceville Road, Valley Hi Drive, and Wyndham Drive. The expansion includes a new approximately 158,000-square foot Hospital Tower and the addition of 115 new hospital beds; a new approximately 57,000-square-foot Outpatient Surgery Center (OSC); an approximately 15,000 square foot addition to the existing outpatient services building; 10,000-square-foot support building and an approximately 6,000-square-foot addition to the Central Utility Plant. The expansion would add a total of 244,316 square feet to the existing Medical Center. A new five story, 882-space-parking garage is also included in the proposed project.

According to the project site plan, three driveways would provide access to the site, as described below.

- *Bruceville Road at Alta Valley Way Kaiser Driveway* – An existing full-access driveway located on Bruceville Road at the Bruceville Road/Alta Valley Way intersection.

- *Bruceville Road Kaiser Driveway* – The existing emergency center access, located on Bruceville Road approximately 670 feet north of the Bruceville Road/Wyndham Drive intersection, which also provides full access to and from the project site.

- *Wyndham Drive Kaiser Driveway* – An existing full-access driveway on Wyndham Drive, 430 feet west of the Wyndham Drive/Arroyo Vista Drive intersection, which is planned to be closed with construction of the proposed project and would be replaced by a full access at the Wyndham Drive/Arroyo Vista Drive intersection.

Existing emergency vehicle routes would remain the same with project implementation. Currently, emergency vehicles enter the Medical Center from the east off Bruceville Road, between Parking Lots 5 and 8. This entrance is also used most by medical office visitors and staff, and would not change with project implementation. The proposed Helipad would be constructed east of the proposed Trauma Center. The Helipad would be used to receive emergency (medevac) flights only and would likely receive no more than six emergency helicopter flights per month. Two potential flight paths would be used by incoming helicopters: (1) from the north, flying south above SR 99, over MOB 3, and then directly to the landing pad; and (2) from the south, flying north above SR 99, over Bruceville Road and then to the landing pad. Refer to Figure 2-3 (Proposed Site Plan).

3.3.2 Regulatory Setting

3.3.2.1 City of Sacramento General Plan

The *City of Sacramento General Plan* (October 1987) outlines goals and policies that coordinate the transportation and circulation system with planned land uses. The General Plan (Goal D, Streets and Roads section) identifies LOS C or better as the traffic operational goal for the City's local and major street system.

3.3.3 Environmental Analysis

3.3.3.1 Significance Criteria

Impact significance criteria are summarized below for study area intersections, bicycle and pedestrian facilities, and transit facilities.

Intersections

The City of Sacramento has established a traffic operation standard for intersections of LOS C, based on the average control delay at signalized and unsignalized intersections. As stated in the City's *Traffic Impact Guidelines* (February 1996), a significant traffic impact would occur if:

- The addition of project-generated traffic would cause an intersection to change from LOS A, B or C to LOS D, E or F; or

- The addition of project-generated traffic would increase the average stopped delay by five seconds or more at an intersection already operating worse than LOS C.

The County of Sacramento considers the minimum acceptable operating level for intersections and roadway segments to be LOS E in urban areas and LOS D in rural areas. Since the study area is located within the urban service area, the minimum acceptable operating level for study intersections and roadway segments is LOS E.

A significant project impact would occur at a signalized intersection if:

- The addition of project traffic degrades an intersection operating at an acceptable level (LOS E or better) to an unacceptable level (LOS F); or

- The addition of project traffic at a signalized intersection currently operating at an unacceptable level (LOS F) increases the volume-to-capacity ratio (V/C) more than 0.05 or the average stopped delay by five seconds or more..

Freeway Facilities

Based on a comment letter on the Notice of Preparation (NOP) for the project from Caltrans, Caltrans considers that project traffic would have a significant impact on freeway ramps and mainline if it causes any of the following to occur:

- Vehicle queues at off-ramps extend into the ramp's deceleration area or onto the freeway;

- Vehicle queues at intersections exceed existing lane storage;

- Any ramp's merge/diverge LOS to be worse than the freeway's LOS; or

- The freeway or intersection LOS deteriorates beyond LOS E for the freeway and LOS D for highway and intersections. (If the LOS is already E or F, then a quantitative measure of increased queue lengths and delay should be used to determine appropriate mitigation measures).

Bicycle Facilities

A significant impact on a bikeway would occur if:

- Implementation of the project disrupts or interferes with existing or planned (Bicycle Master Plan) facilities.

Pedestrian Facilities

A significant impact on pedestrian circulation would occur if:

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

Transit Facilities

A significant impact on the transit system would occur if:

- The project-generated ridership, when added to existing or future ridership, exceeds available or planned system capacity; capacity is defined as the total number of passengers the system of busses and light rail vehicles can carry during the peak hours of operation.

3.3.3.2 Traffic Volume Forecasts

Traffic volume forecasts for baseline and Year 2025 conditions, with and without the project, are discussed below.

Baseline Conditions

Traffic forecasts were developed under "baseline" conditions to reflect development of planned and approved projects within the study area that will increase traffic volumes on the roadways adjacent to the project site. Regional growth is accounted for by reviewing short- and long-term growth forecasts and adjusting existing traffic counts by appropriate growth factors to reflect near-term (Year 2009) conditions. The forecasts were developed by modifying existing traffic counts to include the traffic generated by the following approved projects:

- *College Square Planned Unit Development*: This project is located on the southeast quadrant of the Cosumnes River Boulevard/Bruceville Road intersection. The following land use was assumed under baseline conditions: 207,328 square feet of retail uses, a 19,200-square-foot drug store, and a 3,000-square-foot fast food restaurant with a drive-through lane. Phase 1 of College Square would generate approximately 11,600 new daily trips (including 610 AM peak-hour trips and 1,210 PM peak-hour trips). These trips were assigned to the existing traffic counts, based on the project trip distribution developed for the College Square traffic study to yield baseline traffic volumes.

- *Strawberry Creek Shopping Center*: This project is located on the northeast quadrant of the Cosumnes River Boulevard/Bruceville Road intersection. The project was assumed to include 73,000 square feet of retail and 7,000 square feet of fast-food (drive-through) restaurants. The

shopping center would generate approximately 5,611 new daily trips (including 277 AM peak-hour trips and 477 PM peak-hour trips). These trips were assigned to the existing traffic counts, based on the project trip distribution developed for the Strawberry Creek Shopping Center traffic study.

- *Department of Motor Vehicles (DMV) Office*: This project is a 15,000-square-foot California DMV office building located on La Mancha Way, housing up to 36 employees. The project would generate approximately 2,129 new daily trips (including 136 AM peak-hour and 256 PM peak-hour trips). These trips were assigned to the existing traffic counts, based on the project trip distribution developed in *Traffic Impact Analysis South Shopping Center,* Dowling Associates, Inc., February 2005.

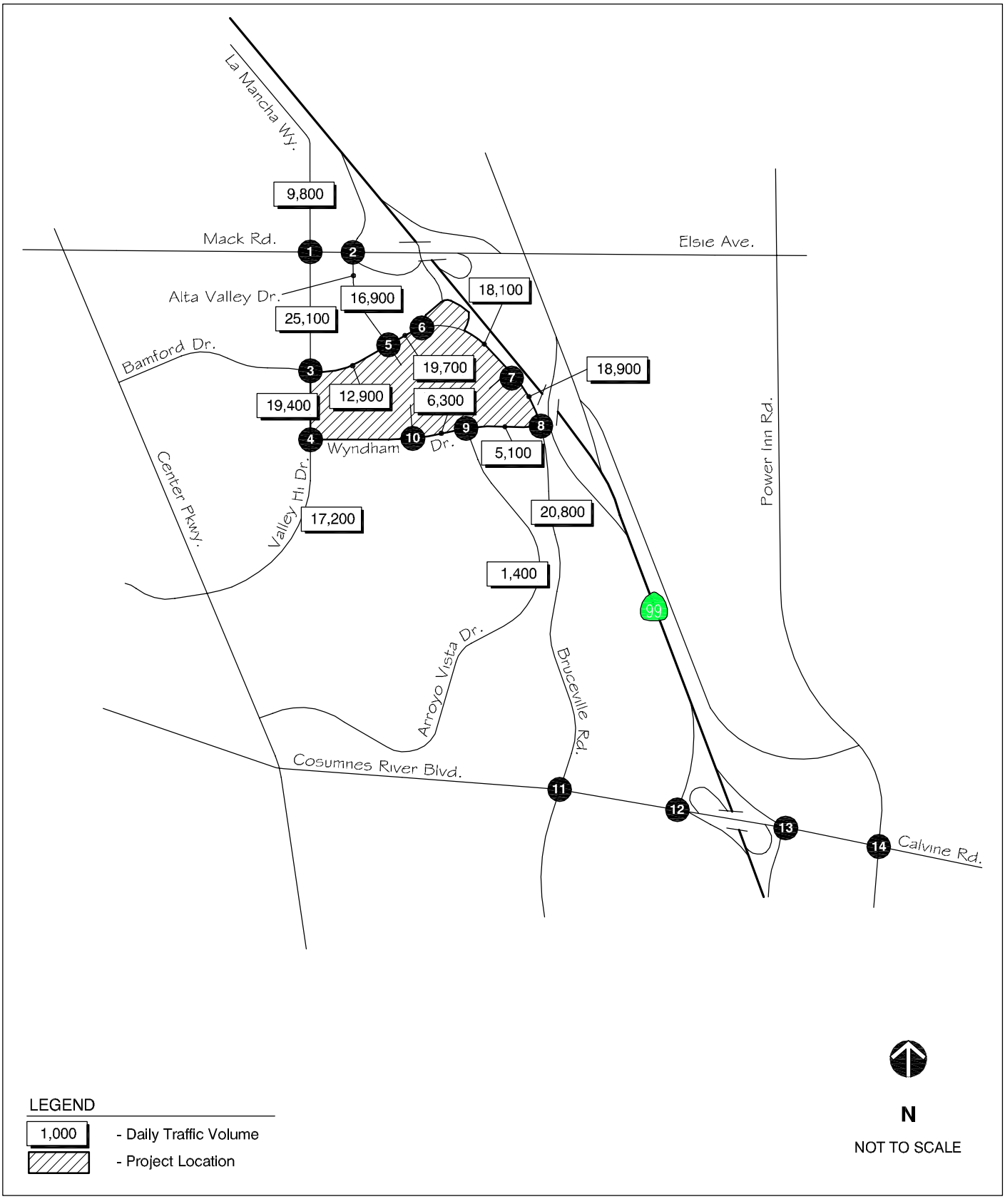
In addition, the following roadway improvements will be constructed as part of Phase 1 of the College Square development and were assumed in place for baseline conditions:

- *Bruceville Road/Cosumnes River Boulevard Intersection Improvements*: The northbound Bruceville Road approach to the intersection will be widened to provide dual left-turn lanes, two through lanes, and dual right-turn lanes.

- *West Stockton Boulevard*: This roadway will be extended westward from its current terminus to connect with Bruceville Road.

- *Bruceville Road*: This roadway will be widened to five lanes between Cosumnes River Boulevard and West Stockton Boulevard (three northbound lanes and two southbound lanes).

Figures 3.3-5A/B (Peak Hour and Average Daily Traffic Volumes and Lane Configurations – Baseline No Project Conditions) displays the AM and PM peak-hour traffic volumes and assumed lane configurations at each study intersection under baseline conditions. Average daily traffic volumes on each study roadway segment are displayed on these figures and summarized in Table 3.3-10 (Daily Traffic Volumes – Baseline Conditions).



PEAK HOUR AND AVERAGE DAILY TRAFFIC VOLUMES AND LANE CONFIGURATIONS - BASELINE NO PROJECT CONDITIONS

FIGURE 3.3-5A

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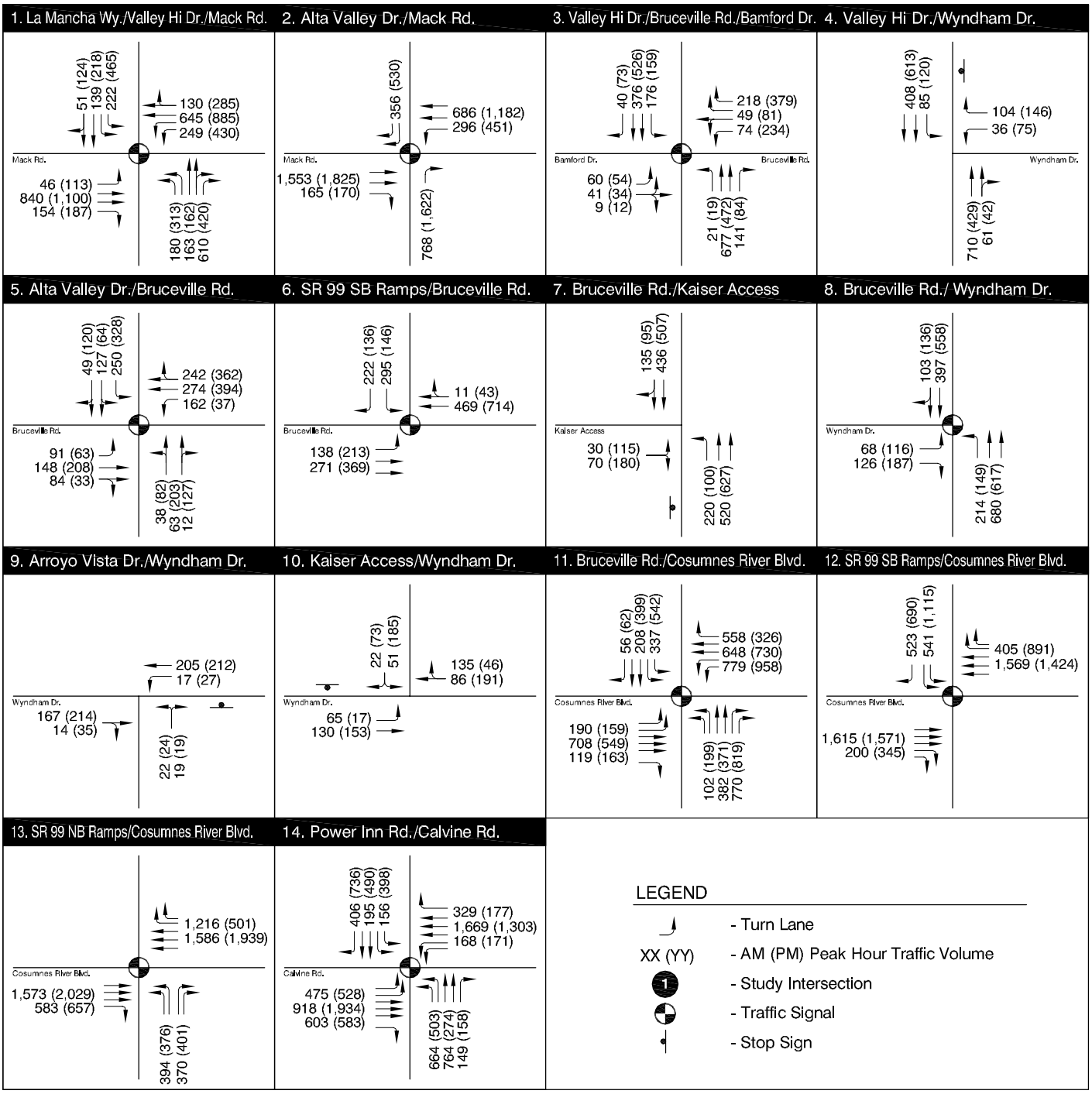

PEAK HOUR AND AVERAGE DAILY TRAFFIC VOLUMES AND LANE CONFIGURATIONS - BASELINE NO PROJECT CONDITIONS

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FIGURE 3.3-5B

Table 3.3-10. Daily Traffic Volumes – Baseline Conditions

Roadway Segment	Daily Traffic Volume
Bruceville Road – Valley Hi Drive to Alta Valley Way	12,900
Bruceville Road – Alta Valley Way to SR 99 Southbound Ramps	19,700
Bruceville Road – SR 99 Southbound Ramps to Kaiser Driveway	18,100
Bruceville Road – Kaiser Driveway to Wyndham Drive	18,900
Bruceville Road – South of Wyndham Drive	20,800
Wyndham Drive – Bruceville Road to Arroyo Vista Drive	5,100
Wyndham Drive – Arroyo Vista Drive to Valley Hi Drive	6,300
Valley Hi Drive – Mack Road to Bruceville Road	25,100
Valley Hi Drive – Bruceville Road to Wyndham Drive	19,400
Valley Hi Drive – South of Wyndham Drive	17,200
Alta Valley Way – Mack Road to Bruceville Road	16,900
La Mancha Way – North of Mack Road	9,800
Arroyo Vista Drive – South of Wyndham Drive	1,400

Source: Fehr & Peers, 2005.

Year 2025 Conditions

The Sacramento Metropolitan Travel Demand Model (SACMET) (V.01) that was previously modified for the College Square and Strawberry Creek Shopping Center traffic studies was used to develop traffic volume forecasts for Year 2025 conditions. For these traffic studies, the SACMET base year (2000) and cumulative year (2025) roadway networks were updated to include the appropriate number of lanes, travel speeds, and loading of traffic analysis zones (TAZs) to the roadway network. The following roadway improvements are identified in the Metropolitan Transportation Plan for 2025 (Sacramento Area Council of Governments, May 2002); they are funded and expected to be in place by Year 2025 and are reflected in the model (SACMET).

- Widening of Bruceville Road to six lanes south of Cosumnes River Boulevard
- Widening of Cosumnes River Boulevard to four lanes west of Bruceville Road

In Year 2025, light rail transit is planned to run south along Center Parkway and will continue to the east along Cosumnes River Boulevard. In addition, a light rail transit station will be located at Cosumnes River College. The Year 2025 SACMET model contains the future light rail transit line extension to Cosumnes River Boulevard and the transit station at Cosumnes River College. Therefore, the Year 2025 traffic forecasts developed with the SACMET model reflect the presence of light rail transit in the project vicinity.

Land uses in the 2000 and 2025 models were compared to verify that the 2025 model land uses are higher than the 2000 land uses and that this growth was assumed within the project area. The area bounded by Mack Road to the north, Sheldon Road to the south, Elk Grove -- Florin Road to the east, and Interstate 5 (I-5) to the west was evaluated to determine the anticipated growth. The 2025 model contains a growth of approximately 10,600 new residential dwelling units and 8,100 new employees (retail and non-retail) within this boundary. In addition, the 2025 SACMET model assumes a growth of 8,600 new students for Cosumnes River College.

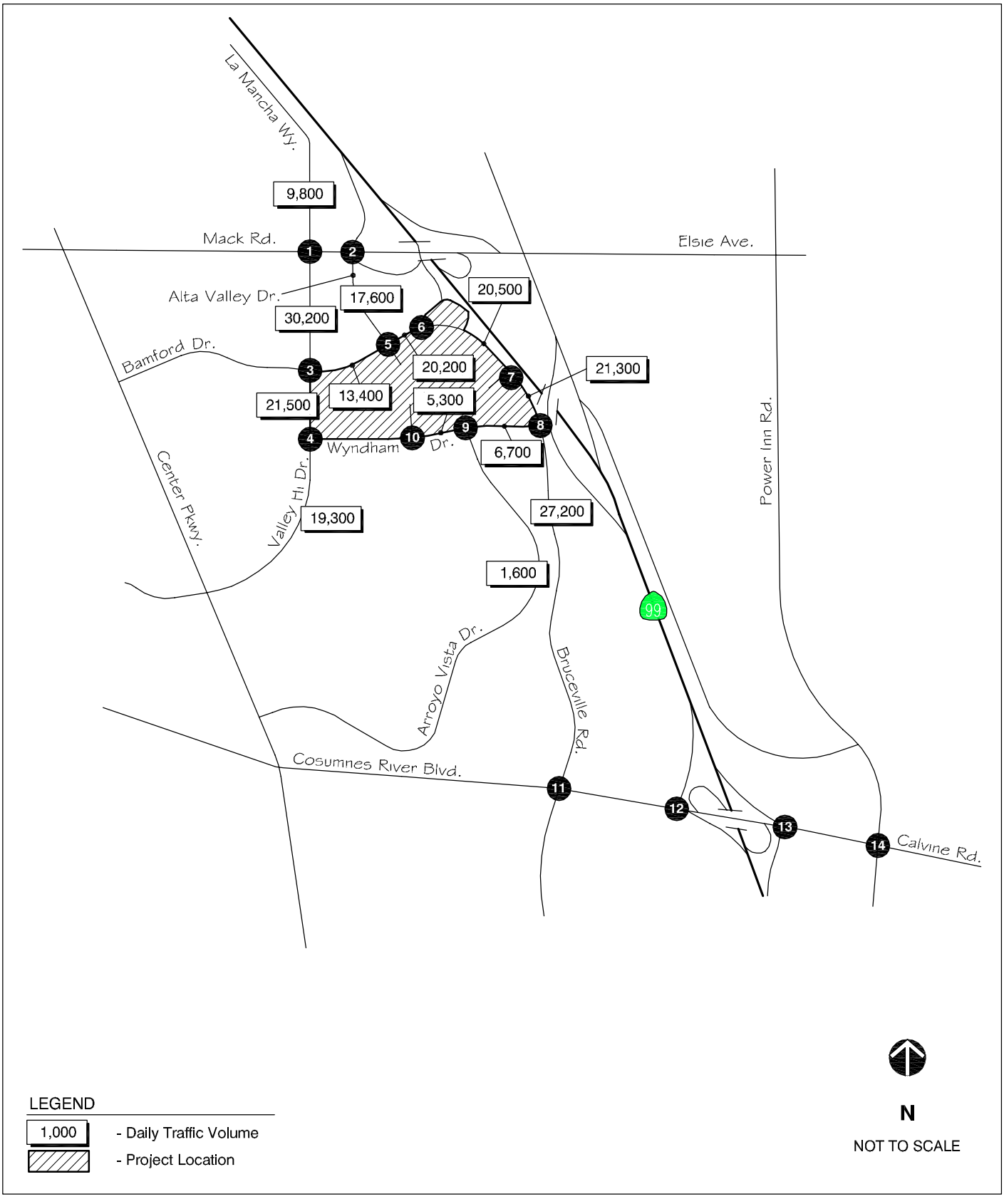
To develop Year 2025 traffic volumes without the proposed project, land uses assumed in the model for the project site were reviewed to determine that the expansion of the Medical Center was not included in the base model. Peak-hour intersection traffic volumes and daily roadway volumes were developed by running both the 2000 and 2025 SACMET models and adjusting (i.e., using the difference method) to account for inaccuracies in the base year version of the model.

To develop Year 2025 traffic volumes with the project, project trips were manually assigned to the roadway network, based on the expected trip generation and distribution of the project. The volumes were adjusted to reflect the extension of West Stockton Boulevard to Bruceville Road, based on output from the SACMET travel demand model.

The following intersection improvement was assumed in place for Year 2025 conditions:

- Cosumnes River Boulevard/Bruceville Road: An additional westbound left-turn lane on Cosumnes River Boulevard (identified as a cumulative mitigation measure in the College Square traffic study)

Figures 3.3-6A/B (Peak Hour and Average Daily Traffic Volumes and Lane Configurations – Year 2025 Without Project Conditions) displays the AM and PM peak-hour traffic volumes and assumed lane configurations at each study intersection under Year 2025 no-project conditions. Average daily traffic volumes on each study roadway segment are displayed on these figures and summarized in Table 3.3-11 (Daily Traffic Volumes – Year 2025 No Project Conditions).



PEAK HOUR AND AVERAGE DAILY TRAFFIC VOLUMES AND LANE CONFIGURATIONS - YEAR 2025 NO PROJECT CONDITIONS

FIGURE 3.3-6A

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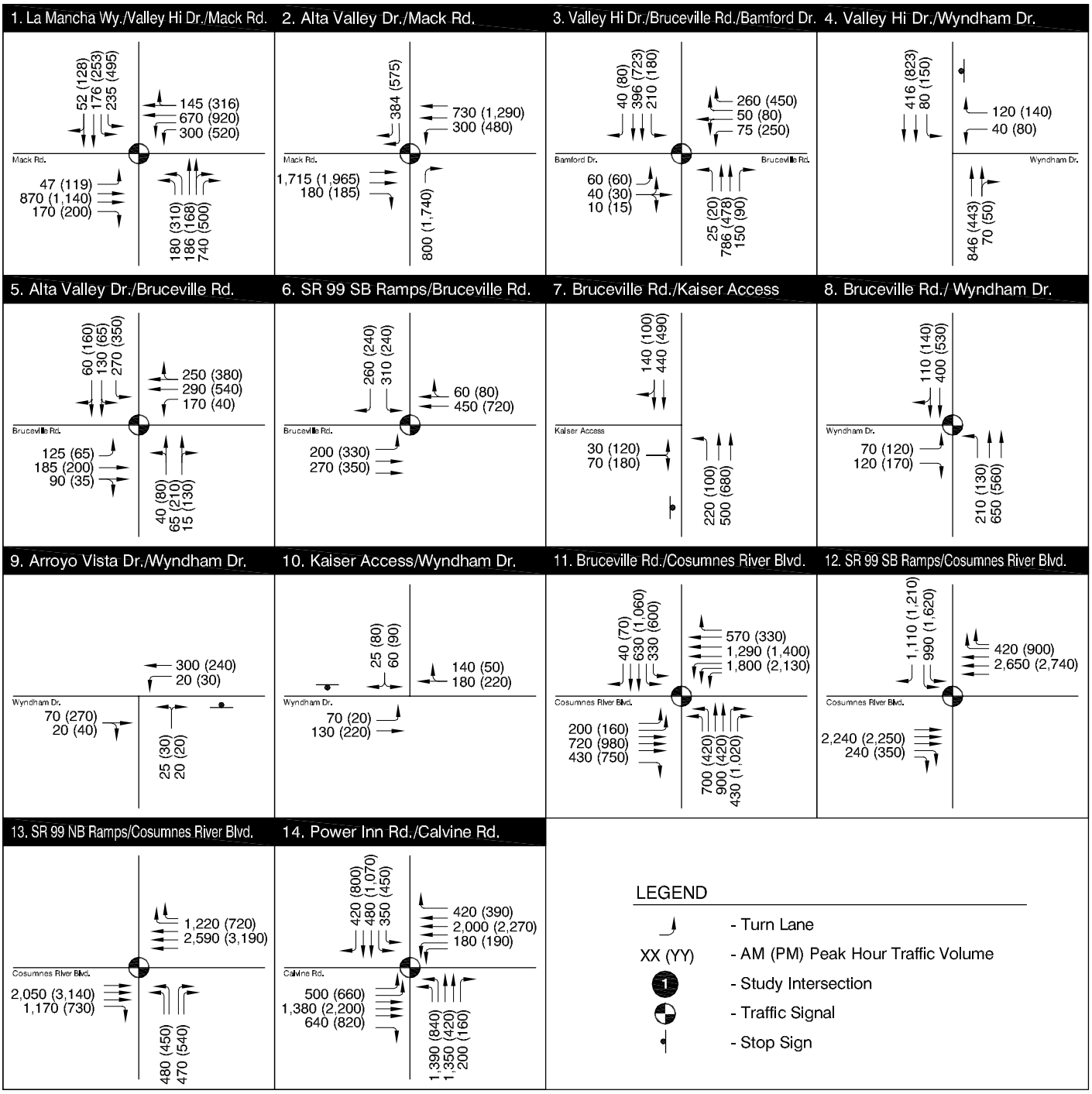

PEAK HOUR AND AVERAGE DAILY TRAFFIC VOLUMES AND LANE CONFIGURATIONS - YEAR 2025 NO PROJECT CONDITIONS

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FIGURE 3.3-6B

Table 3.3-11. Daily Traffic Volumes – Year 2025 No-Project Conditions

Roadway Segment	Daily Traffic Volume
Bruceville Road – Valley Hi Drive to Alta Valley Way	13,400
Bruceville Road – Alta Valley Way to SR 99 Southbound Ramps	20,200
Bruceville Road – SR 99 Southbound Ramps to Kaiser Driveway	20,500
Bruceville Road – Kaiser Driveway to Wyndham Drive	21,300
Bruceville Road – South of Wyndham Drive	27,200
Wyndham Drive – Bruceville Road to Arroyo Vista Drive	6,700
Wyndham Drive – Arroyo Vista Drive to Valley Hi Drive	5,300
Valley Hi Drive – Mack Road to Bruceville Road	30,200
Valley Hi Drive – Bruceville Road to Wyndham Drive	21,500
Valley Hi Drive – South of Wyndham Drive	19,300
Alta Valley Way – Mack Road to Bruceville Road	17,600
La Mancha Way – North of Mack Road	9,800
Arroyo Vista Drive – South of Wyndham Drive	1,600

Source: Fehr & Peers, 2005.

3.3.3.3 Trip Generation

Trip generation rates published in *Trip Generation*, 7th Edition, Institute of Transportation Engineers (ITE) were used to estimate the project's trip generation.

Using the ITE trip generation rates, as shown in Table 3.3-12 (Project Vehicle Trip Generation), the project would generate 6,395 daily trips (including 453 AM peak-hour trips and 559 PM peak-hour trips). The trip rates and number of inbound and outbound trips are shown in Table 3.3-12. Non-vehicular on-site trips between the medical office buildings and the hospital were accounted for by a ten-percent internal trip factor. The internal trip factor was developed using *Trip Generation Handbook,* 2nd Edition, Institute of Transportation Engineers (ITE); *Draft Traffic and Parking Study for Sutter Roseville Medical Center*, Fehr & Peers, November 10, 2004; and trip generation evaluation for medical centers throughout Northern California conducted by Fehr & Peers. These trips comprise patient and staff trips between the various buildings on site.

Table 3.3-12. Project Vehicle Trip Generation

Land Use	Amount [2]	Daily		Trip Rate [1]			Trips			Trip Rate [1]			Trips		
		Trip Rate	Trips	AM Peak Hour			AM Peak Hour			PM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Hospital	158.0 KSF	23.99 TE/KSF	3,791	67%	33%	1.83 TE/ KSF	194	95	289	33%	67%	2.19 TE/ KSF	114	232	346
Medical Offices	86.3 KSF	38.40 TE/KSF	3,314	79%	21%	2.48 TE/ KSF	169	45	214	27%	73%	3.19 TE/ KSF	74	201	275
Internal	(10%)		-710				-36	-14	-50				-19	-43	-62
Total			6,395				327	126	453				169	390	559

1. Trip generation rates are from *Trip Generation,* 7th Edition (Institute of Traffic Engineers, 2003).
2. KSF=thousand square feet. Based on Kaiser Permanente South Sacramento Medical Center Expansion Planning Application, February 15, 2005.

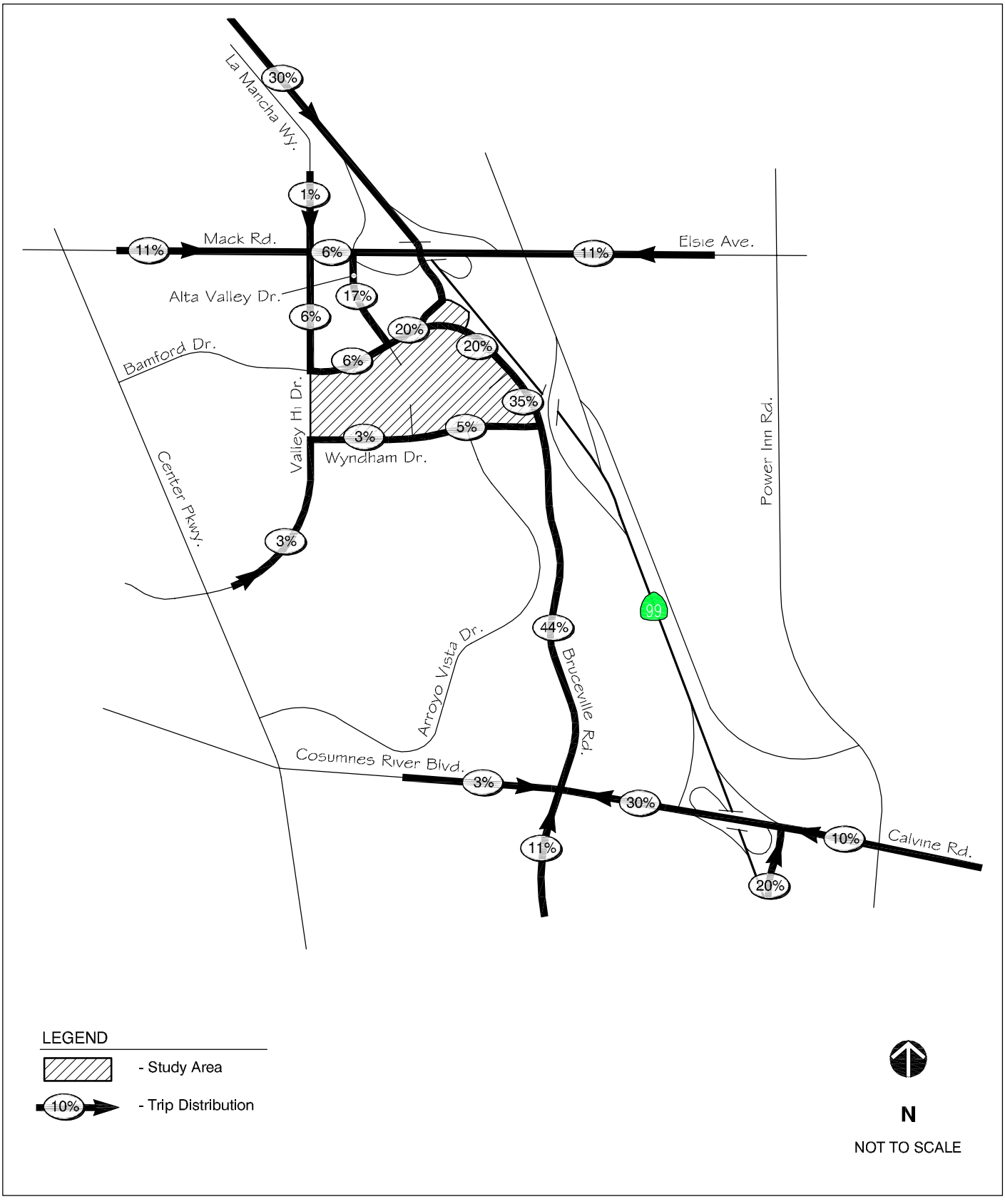
Source: Fehr & Peers, 2004

3.3.3.4 Trip Distribution

The distribution of trips was determined based on the land uses adjacent to the existing and future transportation network and the existing travel patterns of the Medical Center. Figure 3.3-7 (Trip Distribution – Entering) and Figure 3.3-8 (Trip Distribution – Exiting) display the project trip distribution used to assign trips under the baseline plus-project and Year 2025 plus-project conditions. Figures 3.3-9A/B (Peak Hour and Average Daily Traffic Volumes and Lane Configurations – Project Only Conditions) display the proposed-project-only "new" trips at the study intersections.

Parking

Potential short-term parking impacts with construction of the proposed project were analyzed. Table 3.3-13 (Project Parking Analysis) compares the parking demand vs. parking supply for the various phases of the project construction. At no time during the construction would the parking supply fall below the City of Sacramento parking requirements. However, in the early phases of construction, the parking supply would be less than the existing supply (Phase 1A and Phase 2A). By Phase 2B the parking garage would be constructed and parking supply would substantially exceed parking demand. The parking analysis does not include demand for parking generated by construction activities; the construction contractors would be required to provide parking for their employees. To address construction-related activities and parking, a Construction Management Plan would be required to be developed and submitted to the City of Sacramento for review and approval prior to the initiation of construction.



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TRIP DISTRIBUTION - ENTERING

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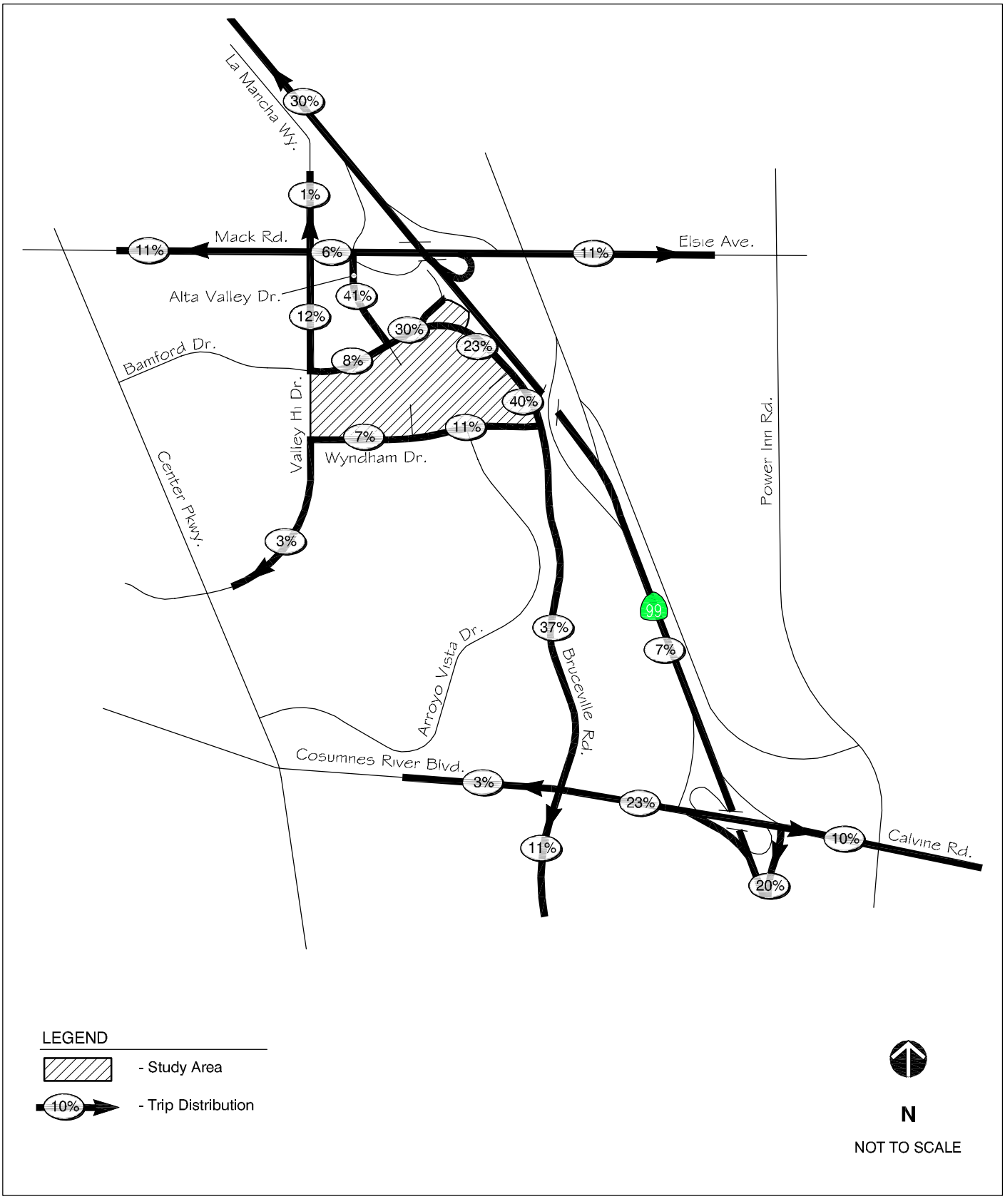

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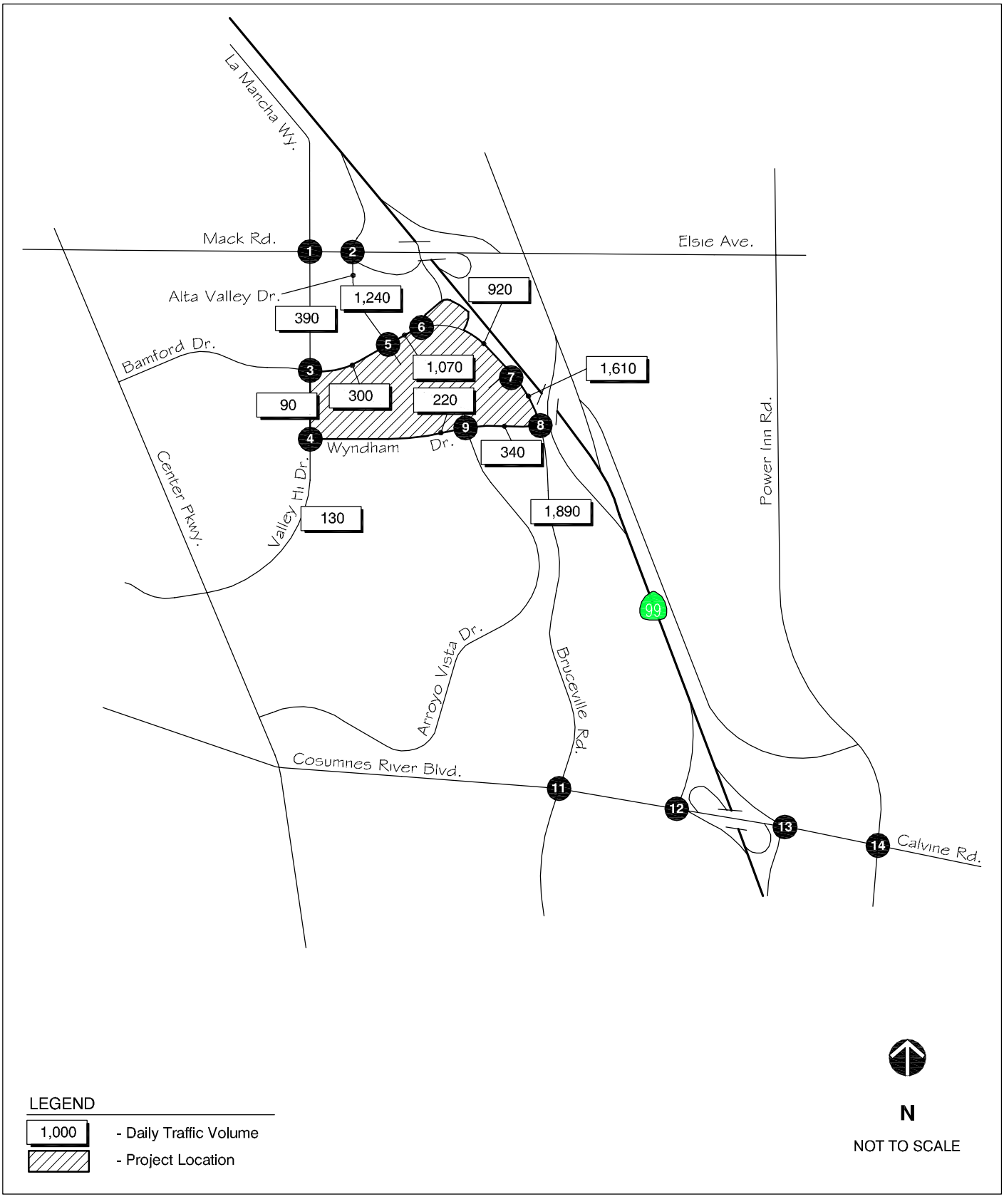
TRIP DISTRIBUTION - EXITING

FIGURE 3.3-8



PEAK HOUR AND AVERAGE DAILY TRAFFIC VOLUMES AND LANE CONFIGURATIONS - PROJECT ONLY CONDITIONS

FIGURE 3.3-9A

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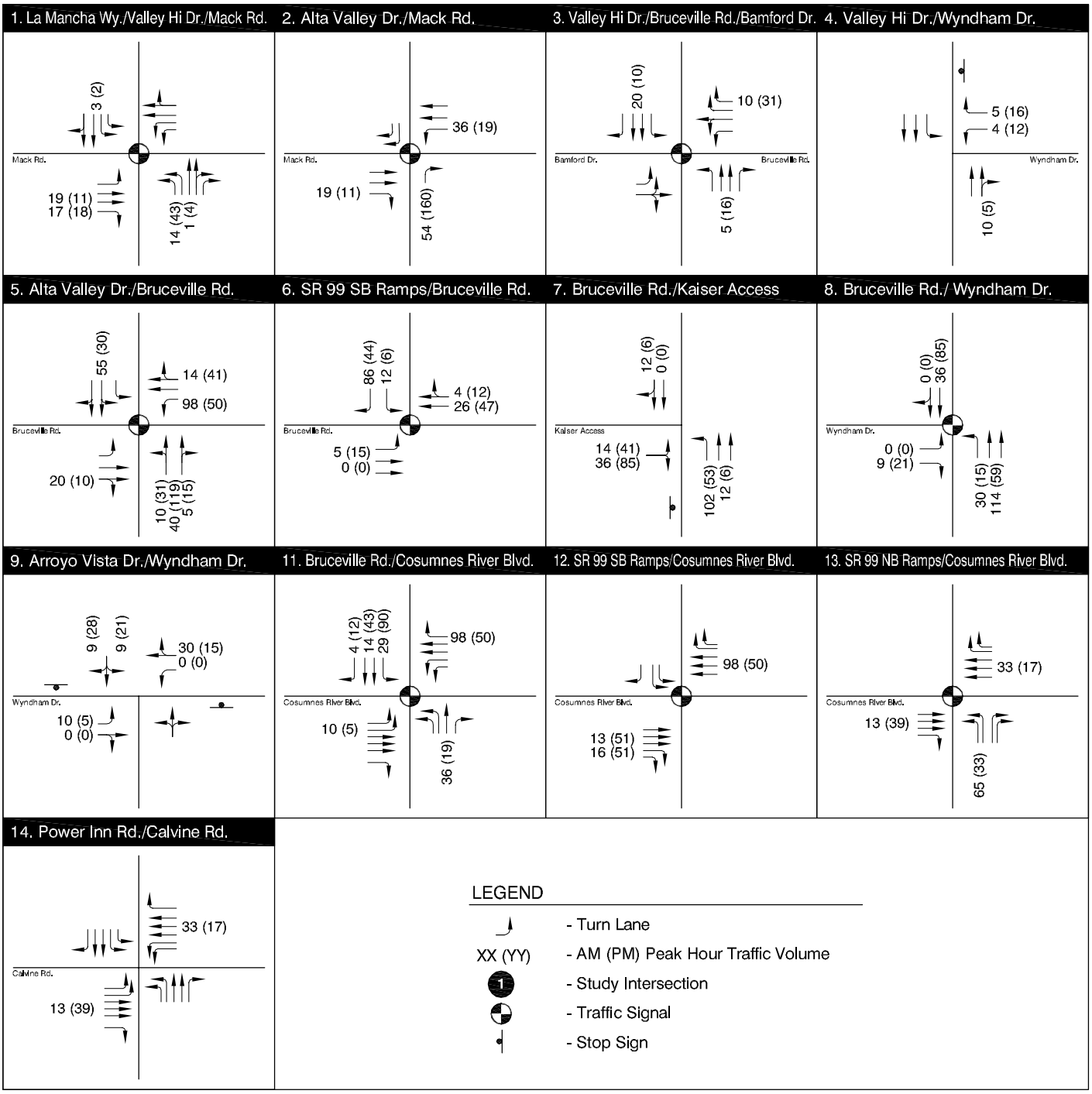

PEAK HOUR AND AVERAGE DAILY TRAFFIC VOLUMES AND LANE CONFIGURATIONS - PROJECT ONLY CONDITIONS

FIGURE 3.3-9B

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Table 3.3-13. Project Parking Analysis

Phase	Duration	Parking Spaces			Parking Spaces Required by City Code
		Surface Lots	Structure	Total	
Existing		2,174	0	2,174	1,598
Phase 1A	April 2006–June 2006	1,932	0	1,932	1,598
Phase 2A	June 2006–March 2007	1,806	0	1,806	1,598
Phase 2B	March 2007–Sept. 2007	1,534	882	2,416	1,598
Phase 3A	Sept. 2007–Dec. 2009	1,434	882	2,316	1,598
Phase 3B	Dec. 2009–Feb. 2010	1,574	882	2,456	1,598
Phase 4	Feb. 2010–Dec. 2011	1,711	882	2,593	1,954
Final		**1,735**	**882**	**2,617**	**2,029**

Source: Fehr & Peers, 2005, and City of Sacramento Parking Code.

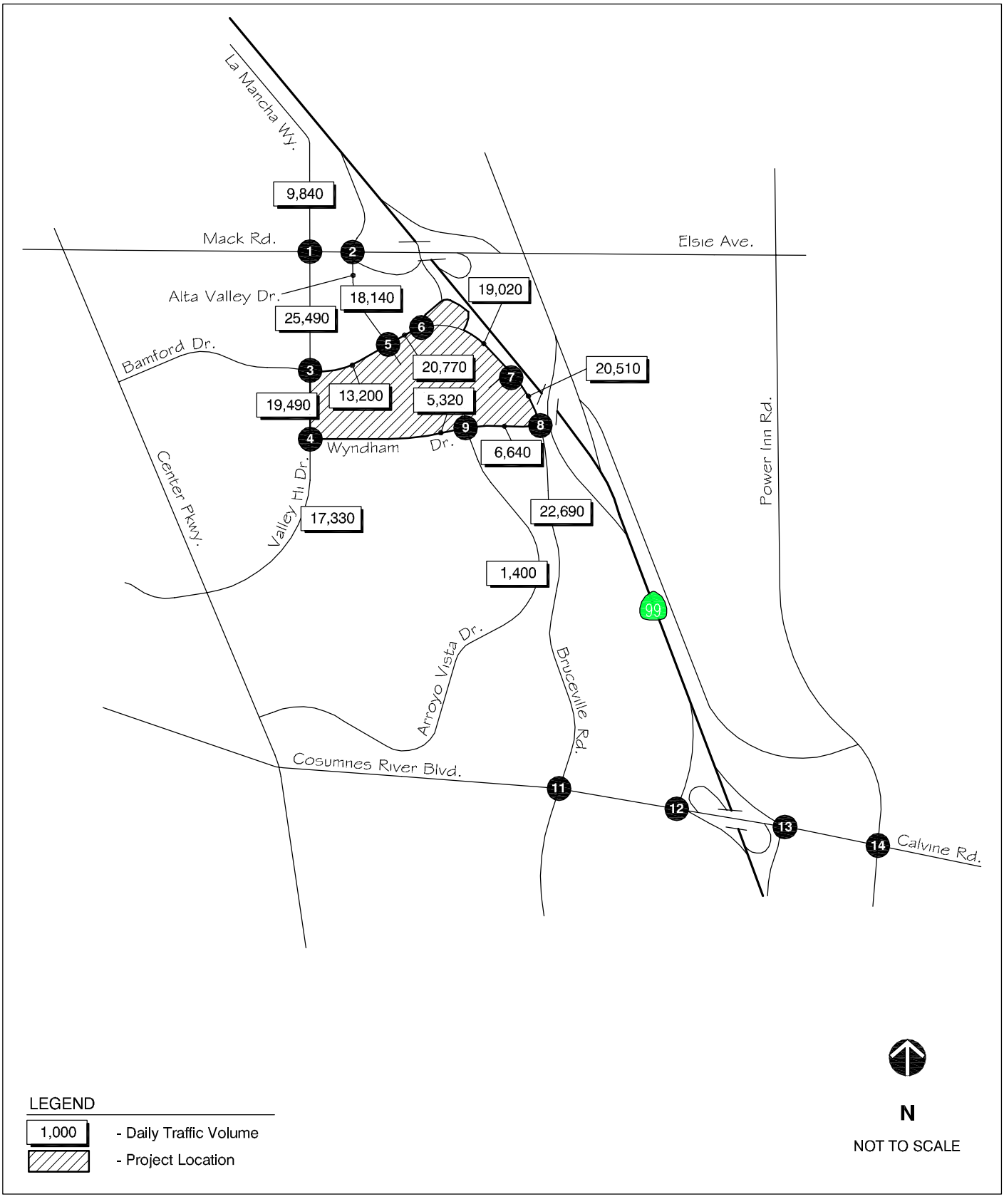
Baseline Plus-Project Conditions

Using the trip distribution shown in Figures 3.3-7 and 3.3-8, project trips were manually added to baseline no project traffic volumes (refer to discussion in Section 3.3.3.2) to develop "baseline plus project" traffic volumes. The AM and PM peak hour and average daily traffic volumes with the proposed project are displayed in Figures 3.3-10A/B (Peak Hour and Average Daily Traffic Volumes and Lane Configurations – Baseline Plus Project Conditions). Table 3.3-14 (Daily Traffic Volumes – Baseline- Plus-Project Conditions) summarizes the daily traffic volumes under baseline conditions.

Table 3.3-14. Daily Traffic Volumes – Baseline-Plus-Project Conditions

Roadway Segment	Daily Traffic Volumes	
	Baseline No-Project Conditions	Baseline-Plus-Project Conditions
Bruceville Road – Valley Hi Drive to Alta Valley Way	12,900	13,200
Bruceville Road – Alta Valley Way to SR 99 Southbound Ramps	19,700	20,770
Bruceville Road – SR 99 Southbound Ramps to Kaiser Driveway	18,100	19,020
Bruceville Road – Kaiser Driveway to Wyndham Drive	18,900	20,510
Bruceville Road – South of Wyndham Drive	20,800	22,690
Wyndham Drive – Bruceville Road to Arroyo Vista Drive	6,300	6,640
Wyndham Drive – Arroyo Vista Drive to Valley Hi Drive	5,100	5,320
Valley Hi Drive – Mack Road to Bruceville Road	25,100	25,490
Valley Hi Drive – Bruceville Road to Wyndham Drive	19,400	19,490
Valley Hi Drive – South of Wyndham Drive	17,200	17,330
Alta Valley Way – Mack Road to Bruceville Road	16,900	18,140
La Mancha Way – North of Mack Road	9,800	9,840
Arroyo Vista Drive – South of Wyndham Drive	1,400	1,400

Source*: Fehr & Peers*, 2005.



PEAK HOUR AND AVERAGE DAILY TRAFFIC VOLUMES AND LANE CONFIGURATIONS - BASELINE PLUS PROJECT CONDITIONS

FIGURE 3.3-10A

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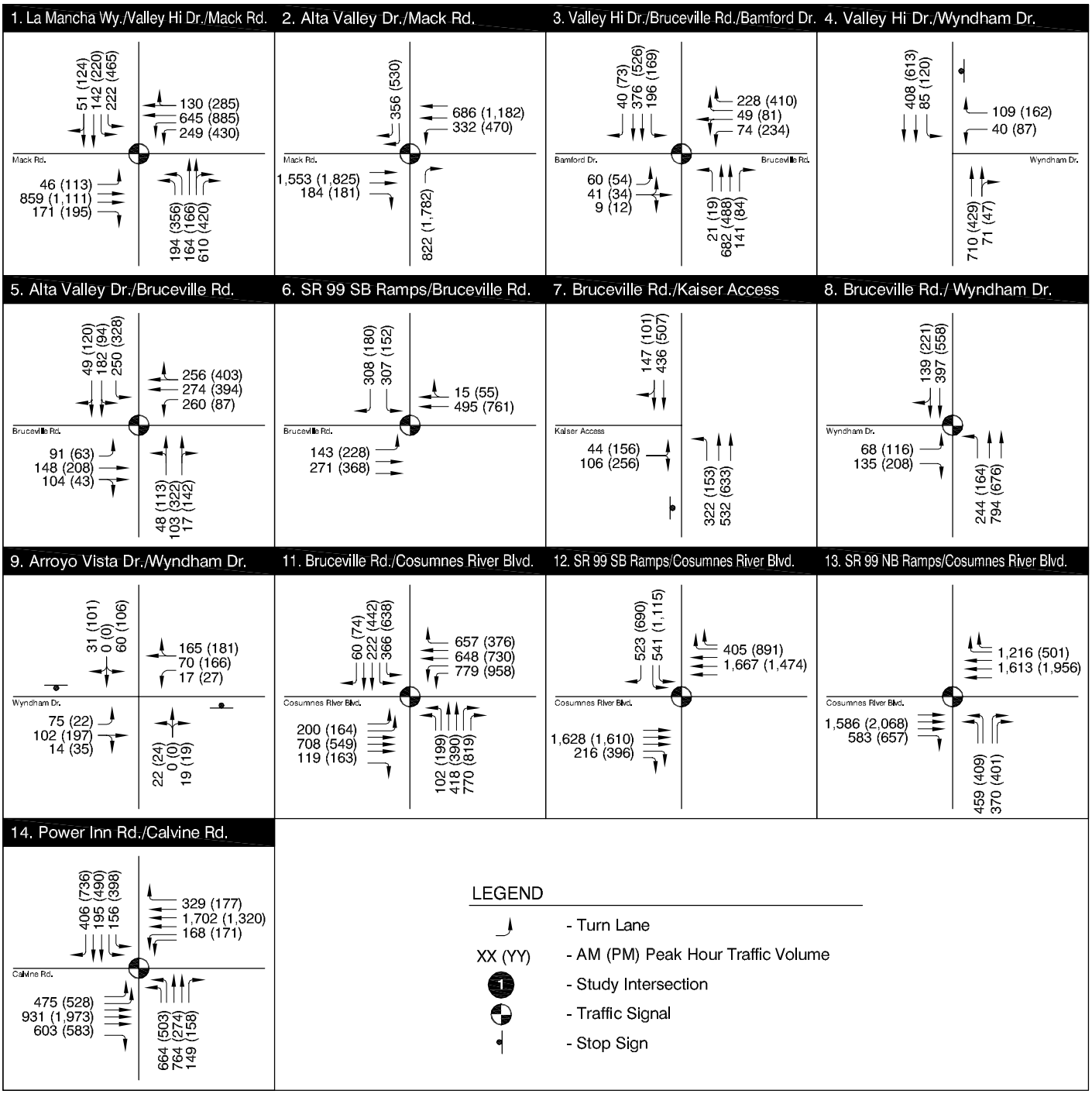

PEAK HOUR AND AVERAGE DAILY TRAFFIC VOLUMES AND LANE CONFIGURATIONS - BASELINE PLUS PROJECT CONDITIONS

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FIGURE 3.3-10B

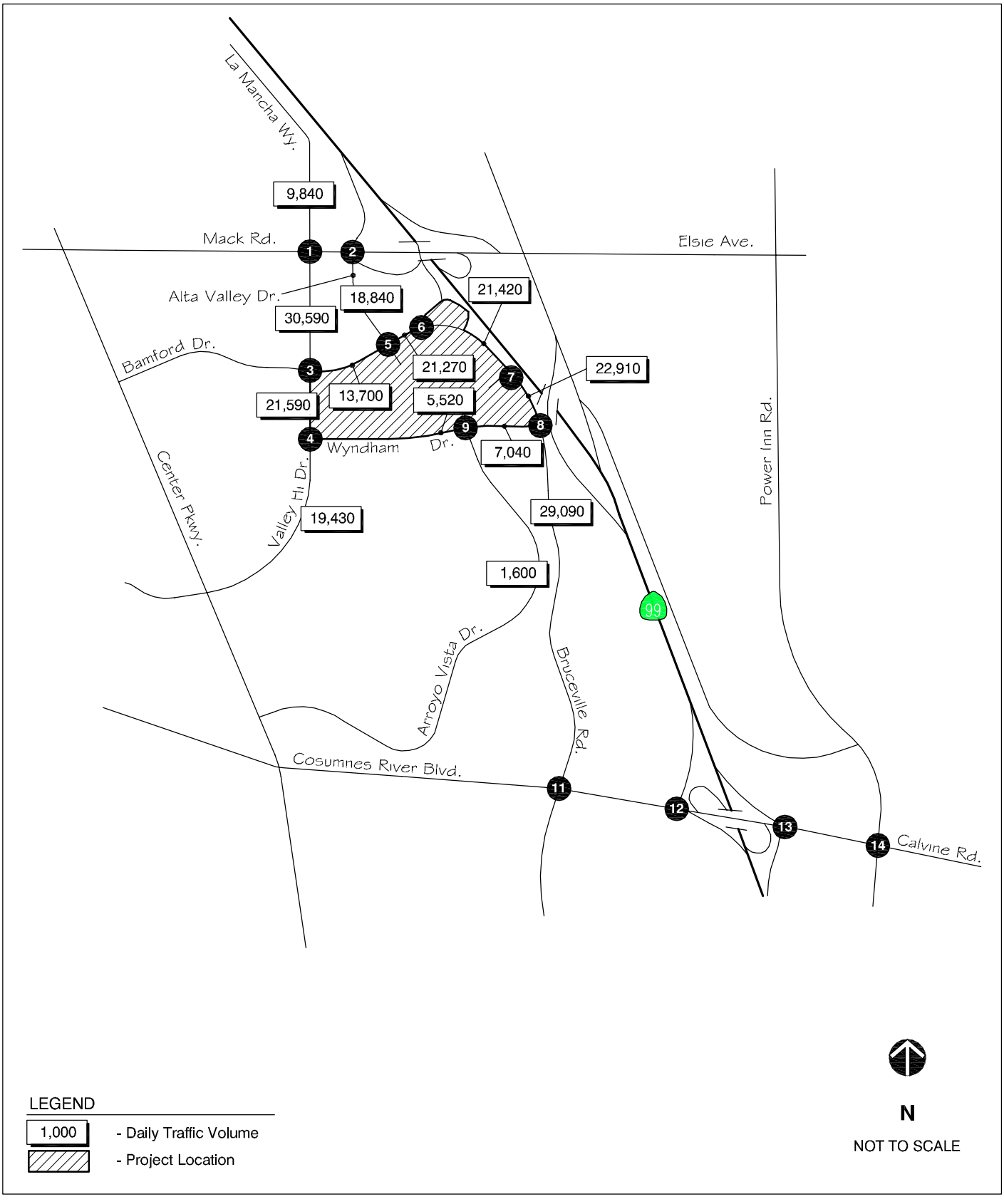
Year 2025 Plus Project Conditions

Project trips were also manually assigned under Year 2025 conditions, using the trip distribution shown in Figures 3.3-7 and 3.3-8. Project trips were manually added to Year 2025 no-project traffic volumes to develop "Year 2025 plus project" traffic volumes. The AM and PM peak-hour and average daily traffic volumes with the proposed project are displayed in Figures 3.3-11A/B (Peak Hour and Average Daily Traffic Volumes and Lane Configurations – Year 2025 Plus Project Conditions). Table 3.3-15 (Daily Traffic Volumes –Year 2025 Plus Project Conditions) summarizes the daily traffic volumes under Year 2025 conditions.

Table 3.3-15. Daily Traffic Volumes –Year 2025 Plus-Project Conditions

Roadway Segment	Daily Traffic Volumes	
	Year 2025 No-Project Conditions	Year 2025 Plus-Project Conditions
Bruceville Road – Valley Hi Drive to Alta Valley Way	13,400	13,700
Bruceville Road – Alta Valley Way to SR 99 Southbound Ramps	20,200	21,270
Bruceville Road – SR 99 Southbound Ramps to Kaiser Driveway	20,500	21,420
Bruceville Road – Kaiser Driveway to Wyndham Drive	21,300	22,910
Bruceville Road – South of Wyndham Drive	27,200	29,090
Wyndham Drive – Bruceville Road to Arroyo Vista Drive	6,700	7,040
Wyndham Drive – Arroyo Vista Drive to Valley Hi Drive	5,300	5,520
Valley Hi Drive – Mack Road to Bruceville Road	30,200	30,590
Valley Hi Drive – Bruceville Road to Wyndham Drive	21,500	21,590
Valley Hi Drive – South of Wyndham Drive	19,300	19,430
Alta Valley Way – Mack Road to Bruceville Road	17,600	18,840
La Mancha Way – North of Mack Road	9,800	9,840
Arroyo Vista Drive – South of Wyndham Drive	1,600	1,600

Source: Fehr & Peers, 2005.



PEAK HOUR AND AVERAGE DAILY TRAFFIC VOLUMES AND LANE CONFIGURATIONS - YEAR 2025 PLUS PROJECT CONDITIONS

FIGURE 3.3-11A

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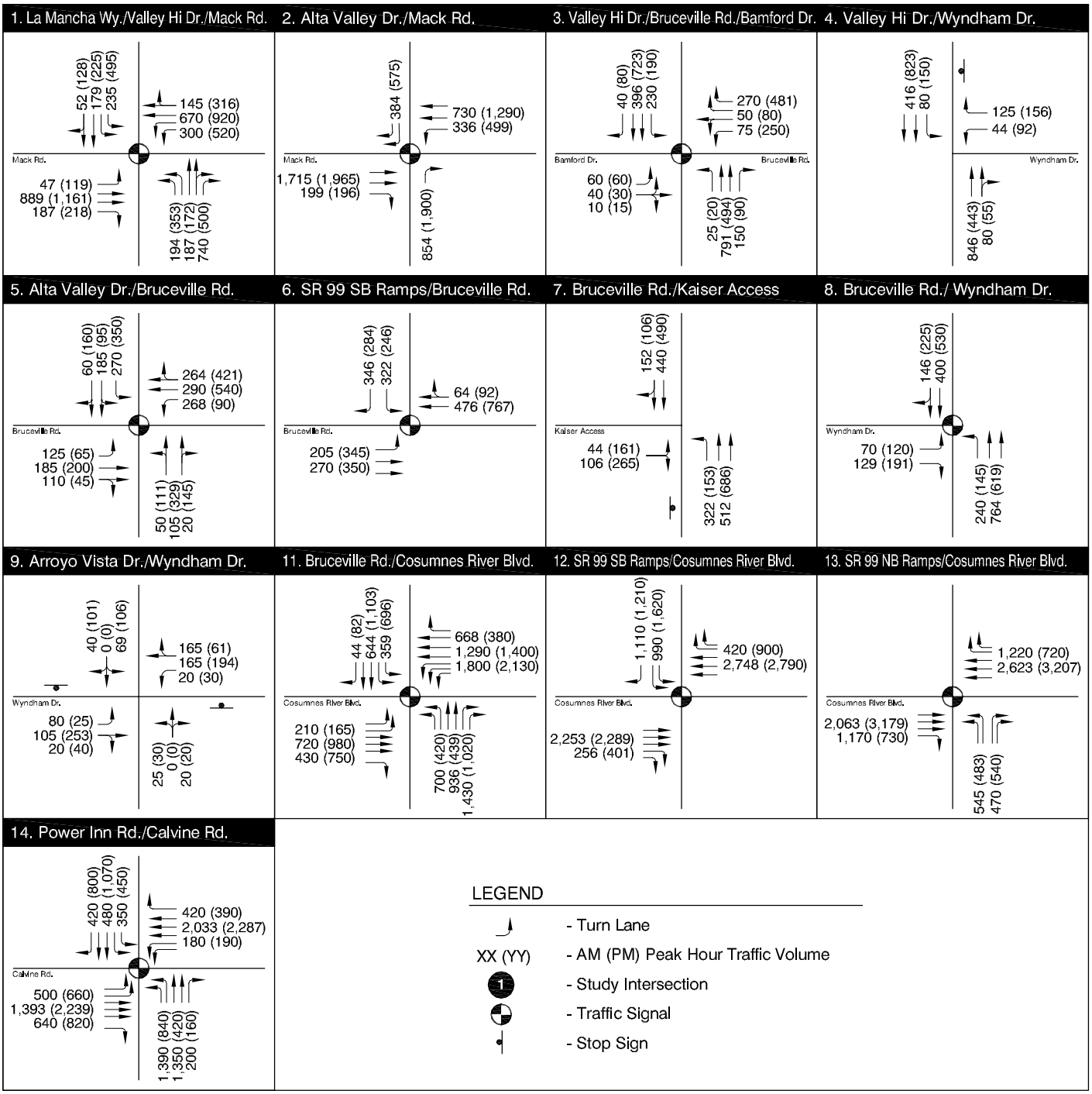

PEAK HOUR AND AVERAGE DAILY TRAFFIC VOLUMES AND LANE CONFIGURATIONS - YEAR 2025 PLUS PROJECT CONDITIONS

FIGURE 3.3-11B

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3.3.3.5 Analysis Results

The analysis methodologies and traffic forecasts discussed above were used to analyze traffic operations with the additional traffic generated by the proposed project. The LOS results for the study intersections are summarized below. On-site circulation for vehicles, pedestrians, and bicyclists is also evaluated.

Intersections

Traffic operations were analyzed during the AM and PM peak hours using the lane configurations and traffic volumes from the figures discussed above. Table 3.3-16 (Peak Hour Intersection Operations – Baseline Conditions) summarizes the peak-hour traffic operations under baseline conditions with and without the proposed project. For the baseline no-project condition, the following study intersections would operate at an unacceptable LOS:

- Cosumnes River Boulevard/Bruceville Road – LOS D during the PM peak hour
- Calvine Road/Power Inn Road – LOS F during the PM peak hour

Table 3.3-16. Peak-Hour Intersection Operations – Baseline Conditions

Intersection	Control	Average Delay or Volume-to-Capacity Ratio (Level of Service)			
		Baseline No Project Conditions		Baseline Plus Project Conditions	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
1. Mack Road/Valley Hi Drive-La Mancha Way	Signal	30.8 (C)	35.0 (C)	30.8 (C)	***35.4 (D)***
2. Mack Road/Alta Valley Way	Signal	9.9 (A)	24.4 (C)	11.9 (B)	26.3 (C)
3. Valley Hi Drive/Bruceville Road-Bamford Drive	Signal	21.7 (C)	26.8 (C)	21.9 (C)	26.9 (C)
4. Valley Hi Drive./Wyndham Drive	TWSC	2.2 (A) 16.2 (C)	3.4 (A) 16.9 (C)	2.3 (A) 16.7 (C)	3.8 (A) 18.0 (C)
5. Bruceville Road/Alta Valley Way	Signal	22.3 (C)	29.6 (C)	23.4 (C)	31.9 (C)
6. Bruceville Road/SR 99 Southbound Ramps	Signal	22.6 (C)	18.1 (B)	23.1 (C)	18.5 (B)
7. Bruceville Road/Kaiser Access	TWSC	3.2 (A) 23.8 (C)	18.3 (C) 97.6 (F)	***61.8 (F)*** 105. 0 (F)	24.2 (C) 100.7 (F)
8. Bruceville Road/Wyndham Drive	Signal	14.4 (B)	16.1 (B)	14.1 (B)	15.9 (B)
9. Wyndham Drive/Arroyo Vista Drive	TWSC	1.3 (A) 10.5 (B)	1.3 (A) 11.2 (B)	4.0 (A) 12.0 (B)	4.7 (A) 12.9 (B)
10. Wyndham Drive/Kaiser Access (2)	TWSC	2.7 (A) 11.3 (B)	3.5 (A) 11.8 (B)	--	--
11. Cosumnes River Boulevard Bruceville Road	Signal	32.8 (C)	**37.9 (D)**	34.2 (C)	**42.2 (D)**
12. Cosumnes River Boulevard/SR 99 Southbound Ramps	Signal	16.9 (B)	28.3 (C)	16.6 (B)	28.1 (C)
13. Cosumnes River Boulevard/SR 99 Northbound Ramps	Signal	8.3 (A)	9.5 (A)	8.1 (A)	9.5 (A)
14. Calvine Road/Power Inn Road	Signal[1]	0.97[1] (E)	**1.06[1] (F)**	0.97[1] (E)	**1.07[1] (F)**

TWSC = Two-way stop controlled
1. County of Sacramento Traffic Signal – Volume to Capacity Ratio
2. Intersection closed with development of the proposed project.
Boldface in shaded cell indicates an unacceptable LOS.
Boldface italic in shaded cell indicates a significant impact.

Source: *Fehr & Peers*, 2005.

For the baseline plus project conditions, the following intersections would operate at an unacceptable LOS:

- Bruceville Road/Kaiser Access – LOS F during the AM peak hour
- Cosumnes River Boulevard/Bruceville Road – LOS D during the PM peak hour
- Calvine Road/Power Inn Road – LOS F during the PM peak hour
- Mack Road/Valley Hi Drive – La Mancha Way – LOS D during the PM peak hour

The Wyndham Drive/Arroyo Vista Drive, Wyndham Drive/Kaiser Access, and Valley Hi Drive/Wyndham Drive intersections would not meet peak hour traffic signal warrants under baseline-no-project conditions. The Valley Hi Drive/Wyndham Drive and Wyndham Drive/Arroyo Vista Drive/ Kaiser Access intersections would not meet peak hour traffic signal warrants under baseline-plus-project conditions. Refer to Appendix C.

Table 3.3-17 (Peak Hour Intersection Operations – Year 2025 Conditions) summarizes the peak-hour traffic operations under Year 2025 conditions with and without the proposed project. For the Year 2025 no-project conditions, the following study intersections would operate at an unacceptable LOS:

- Mack Road/Valley Hi Drive – La Mancha Way – LOS D during the PM peak hour
- Cosumnes River Boulevard/Bruceville Road – LOS F during the AM and PM peak hours
- Cosumnes River Boulevard/SR 99 southbound ramps – LOS F during the AM and PM peak hours
- Calvine Road/Power Inn Road – LOS F during both the AM and PM peak hours

For the Year 2025 plus project conditions, the following intersections would operate at an unacceptable LOS:

- Mack Road/Valley Hi Drive – La Mancha Way – LOS D during the PM peak hour
- Bruceville Road/Kaiser Access – LOS F during the AM peak hour and LOS D during the PM peak hour
- Cosumnes River Boulevard/Bruceville Road – LOS F during the AM and PM peak hours
- Cosumnes River Boulevard/SR 99 southbound ramps – LOS F during the AM and PM peak hours
- Calvine Road/Power Inn Road – LOS F during both the AM and PM peak hours

The Wyndham Drive/Arroyo Vista Drive, Wyndham Drive/Kaiser Access, and Valley Hi Drive/Wyndham Drive intersections do not meet peak hour traffic signal warrants under Year 2025 no-project conditions. The Valley Hi Drive/Wyndham Drive and Wyndham Drive/Arroyo Vista Drive/Kaiser Access intersections would not meet peak hour traffic signal warrants under Year 2025 plus-project conditions. Refer to Traffic Data (Appendix C).

Table 3.3-17. Peak Hour Intersection Operations – Year 2025 Conditions

Intersection	Control	Average Delay or Volume-to-Capacity Ratio (Level of Service)			
		Year 2025 No-Project Conditions		Year 2025 Plus-Project Conditions	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
1. Mack Road/Valley Hi Drive-La Mancha Way	Signal	32.0 (C)	**37.0 (D)**	32.0 (C)	**37.1 (D)**
2. Mack Road/Alta Valley Way	Signal	10.4 (B)	31.7 (C)	12.4 (B)	33.9 (C)
3. Valley Hi Drive/Bruceville Road-Bamford Drive	Signal	21.6 (C)	26. 3 (C)	21.9 (C)	27.3 (C)
4. Valley Hi Drive./Wyndham Drive	TWSC	2.5 (A) 19.0 (C)	3.8 (A) 23.3 (C)	2.6 (A) 19.8 (C)	4.5 (A) 25.8 (D)
5. Bruceville Road/Alta Valley Way	Signal	23.0 (C)	30.9 (C)	24.1 (C)	34.4 (C)
6. Bruceville Road/SR 99 Southbound RampsSouthbound	Signal	24.1 (C)	22.4 (C)	24.8 (C)	22.9 (C)
7. Bruceville Road/Kaiser Access	TWSC	3.2 (A) 23.5 (C)	22.6 (C) 123.1 (F)	***64.2 (F)*** 111.0 (F)	***28.4 (D)*** 120.7 (F)
8. Bruceville Road/Wyndham Drive	Signal	14.7 (B)	16.2 (B)	14.3 (B)	16.0 (B)
9. Wyndham Drive/Arroyo Vista Drive	TWSC	1.2 (A) 11.2 (B)	1.3 (A) 12.2 (B)	4.0 (A) 13.7 (B)	4.8 (A) 14.7 (B)
10. Wyndham Drive/Kaiser Access [(2)]	TWSC	2.7 (A) 12.6 (B)	3.5 (A) 12.9 (B)	--	--
11. Cosumnes River Boulevard Bruceville Road	Signal	**90.8 (F)**	**182.1 (F)**	**94.1 (F)**	***199.6 (F)***
12. Cosumnes River Boulevard/SR 99 Southbound Ramps	Signal	**111.5 (F)**	**115.7 (F)**	***120.2 (F)***	**120.2 (F)**
13. Cosumnes River Boulevard/SR 99 Northbound Ramps	Signal	9.7 (A)	14.0 (B)	11.0 (B)	15.0 (B)
14. Calvine Road/Power Inn Road	Signal[1]	**1.42[1] (F)**	**1.54[1] (F)**	**1.42[1] (F)**	**1.54[1] (F)**

TWSC = Two-way stop controlled
1. County of Sacramento Traffic Signal – Volume-to-Capacity Ratio
2. Intersection closed with development of the proposed project.
Boldface in shaded cell indicates an unacceptable LOS.
Boldface italic in shaded cell indicates a significant impact.

Source: Fehr & Peers, 2005

Freeway Facilities

Freeway Ramp Operations

Operations were evaluated at the study area SR 99 freeway ramps. Table 3.3-18 (Freeway Ramp Operations – Baseline Conditions), and Table 3.3-19 (Freeway Ramp Operations – Year 2025 Conditions) summarize the peak-hour traffic operations under the baseline and Year 2025 conditions, with and without the proposed project.

The following ramps operate at an unacceptable LOS (LOS F) under baseline with- and without-project conditions:

- SR 99 northbound loop on-ramp from eastbound Mack Road – LOS F during the AM peak hour
- SR 99 northbound slip on-ramp from westbound Mack Road – LOS F during the AM peak hour
- SR 99 southbound off-ramp to westbound Mack Road – LOS F during the PM peak hour
- SR 99 southbound off-ramp to Mack Road-Bruceville Road – LOS F during the PM peak hour
- SR 99 southbound on-ramp from Bruceville Road – LOS F during the PM peak hour

Table 3.3-18. Freeway Ramp Operations – Baseline Conditions

Freeway Ramp Junction	Evaluation Type	Baseline Conditions						Baseline Plus Project Conditions					
		AM Peak			PM Peak			AM Peak			PM Peak		
		Vol	Density[1]	LOS [2]	Vol	Density	LOS	Vol	Density	LOS	Vol	Density	LOS
SR 99 Northbound loop on-ramp from Mack Road	Merge	1,081	53.1	**F**	1,785	34.8	D	1,121	53.4	**F**	1,903	35.7	E
SR 99 Northbound slip on-ramp from Mack Road	Merge	585	58.0	**F**	350	34.7	D	585[3]	58.3	**F**	350[3]	35.4	E
SR 99 Southbound off-ramp to Westbound Mack Road	Diverge	356	35.5	E	530	60.3	**F**	356[3]	36.1	E	530[3]	60.7	**F**
SR 99 Southbound off-ramp to Eastbound Mack Road and Bruceville Road	Diverge	889	37.7	E	1,276	62.0	**F**	987	39.0	E	1,326	62.8	**F**
SR 99 Southbound on-ramp from Bruceville Road	Merge	149	26.1	C	256	43.4	**F**	158	26.1	C	318	43.9	**F**

1. Density in passenger cars per mile per lane.
2. LOS calculations are based on the *Highway Capacity Manual* 2000 procedures.
3. The project adds traffic to mainline SR 99 that impacts ramp operations.
Boldface in shaded cell indicates an unacceptable LOS.
Boldface in shaded cell indicates a significant impact.

Source: Fehr & Peers, 2005.

The proposed project adds traffic to the following freeway ramps that are operating unacceptably:

- SR 99 northbound loop on-ramp from eastbound Mack Road – LOS F during the AM peak hour
- SR 99 southbound off-ramp to Mack Road – Bruceville Road – LOS F during the PM peak hour
- SR 99 southbound on-ramp from Bruceville Road – LOS F during the PM peak hour

For Year 2025 with- and without-project conditions, the following freeway ramps are forecast to operate unacceptably:

- SR 99 northbound loop on-ramp from eastbound Mack Road – LOS F during the AM peak hour
- SR 99 northbound slip on-ramp from westbound Mack Road – LOS F during the AM peak hour
- SR 99 southbound off-ramp to westbound Mack Road – LOS F during the PM peak hour
- SR 99 southbound off-ramp to Mack Road – Bruceville Road – LOS F during the PM peak hour
- SR 99 southbound on-ramp from Bruceville Road –LOS F during the PM peak hour

Table 3.3-19. Freeway Ramp Operations – Year 2025 Conditions

Freeway Ramp Junction	Evaluation Type	Year 2025 Conditions						Year 2025 Plus Project Conditions					
		AM Peak			PM Peak			AM Peak			PM Peak		
		Vol	Density [1]	LOS [2]	Vol	Density	LOS	Vol	Density	LOS	Vol	Density	LOS
SR 99 Northbound loop on-ramp from Mack Road	Merge	1,100	59.8	**F**	1,760	35.3	E	1,140	60.1	***F***	1,878	35.5	E
SR 99 Northbound slip on-ramp from Mack Road	Merge	1,200	69.4	**F**	940	39.6	E	1,200[3]	69.6	**F**	940[3]	40.3	**F**
SR 99 Southbound off-ramp to Westbound Mack Road	Diverge	384	40.3	E	575	70.8	**F**	384[3]	40.9	E	575[3]	71.2	**F**
SR 99 Southbound off-ramp to EB Mack Road and Bruceville Road	Diverge	1,010	43.0	**F**	1,565	74.0	**F**	1,108	44.4	***F***	1,615	74.7	***F***
SR 99 Southbound on-ramp from Bruceville Road	Merge	260	30.6	D	410	52.1	**F**	269	30.7	D	437	52.3	***F***

1. Density in passenger cars per mile per lane.
2. LOS calculations are based on the *Highway Capacity Manual* 2000 procedures.
3. The project adds traffic to mainline SR 99 that impacts ramp operations.
Boldface in shaded cell indicates an unacceptable LOS.
Boldface in shaded cell indicates a significant impact.

Source: Fehr & Peers, 2005.

The proposed project adds traffic to the following freeway ramps that are operating unacceptably:

- SR 99 northbound loop on-ramp from eastbound Mack Road – LOS F during the AM peak hour
- SR 99 southbound off-ramp to Mack Road-Bruceville Road – LOS F during the AM and PM peak hours
- SR 99 southbound on-ramp from Bruceville Road – LOS F during the PM peak hour

Freeway Off-Ramp Queue Lengths

Queue lengths at the northbound and southbound SR 99 off-ramps were analyzed during the peak hours using the Synchro 6.0 intersection analysis software program. Table 3.3-20 (Freeway Off-Ramp Queues – Baseline Conditions) and Table 3.3-21 (Freeway Off-Ramp Queues – Year 2025 Conditions) summarize the 95th- percentile queues under Baseline and Year 2025 conditions, with and without the proposed project. As shown in the tables, vehicles exiting the SR 99 off-ramps are not expected to queue onto the SR 99 mainline under baseline conditions, with or without the proposed project.

Table 3.3-20. Freeway Off-Ramp Queues – Baseline Conditions

Off-Ramp	Movement	Storage Provided[1]	Peak Hour	95th Percentile Queue[2]	
				No Project	Proposed Project
SR 99/ Cosumnes River Boulevard Northbound Off-Ramp	Left	1,380 feet +500 feet	AM	165 feet	165 feet
			PM	150 feet	155 feet
	Right	1,380 feet +500 feet	AM	150 feet	150 feet
			PM	180 feet	180 feet
SR 99/ Cosumnes River Boulevard Southbound Off-Ramp	Left	1,250 feet +500 feet	AM	180 feet	180 feet
			PM	400 feet	400 feet
	Right	1,250 feet	AM	505 feet[3]	505 feet[3]
			PM	700 feet[3]	700 feet[3]
SR 99/ Bruceville Road Southbound Off-Ramp	Left	1,680 feet +130 feet	AM	320 feet	320 feet
			PM	215 feet	230 feet
	Right	1,680 feet +130 feet	AM	230 feet	330 feet
			PM	125 feet	170 feet
SR 99/ Westbound Mack Road Southbound Off-Ramp	Right	1,500 feet +250 feet	AM	230 feet	230 feet
			PM	535 feet	535 feet

1. Storage is measured from stop line to gore point, plus additional storage provided by dual turn lanes (i.e., +500 feet indicates that a second turn lane with 500 feet of storage is provided).
2. 95th–percentile, queue reported in feet per lane.
3. Vehicle queues may be longer than reported; queue shown is maximum after two cycles.

Source: Fehr & Peers, 2005.

Under Year 2025 conditions, vehicle queues from the southbound right-turn at the Cosumnes River Boulevard/SR 99 southbound ramps intersection are expected to queue back into the SR 99 auxiliary lane, with and without the proposed project. While the proposed project would not add PM peak hour traffic to the southbound off-ramp from SR 99 to Cosumnes River Boulevard, it would add traffic on Cosumnes River Boulevard, which would add delay to the SR 99 southbound approach to the intersection and increase vehicle queue lengths. However, the increase in intersection delay would be minimal and the project traffic would not exacerbate the queuing problem from the Year 2025 no- project condition; refer to Table 3.3-21. Thus, there would be no significant impact on freeway off-ramp queue lengths from the project.

The PM peak-hour vehicle queue on the southbound SR 99 off-ramp at Cosumnes River Boulevard could be reduced to less than 1,250 feet by converting the existing approach from two left-turn lanes and a right-turn lane to one left-turn lane, one shared left-turn/right-turn lane, and one right-turn lane and by adding ten seconds to the existing traffic signal cycle length. These two measures would reduce the vehicle queue to 1,140 feet (from 1,310 feet) and decrease the intersection delay from 120.2 seconds of delay to 94.1 seconds. This improvement is expected to be completed as a mitigation measure for the Strawberry Creek Retail Center expansion.

Table 3.3-21. Freeway Off-Ramp Queues – Year 2025 Conditions

Off-Ramp	Movement	Storage Provided[1]	Peak Hour	95th Percentile Queue[2]	
				No Project	Proposed Project
SR 99/ Cosumnes River Boulevard Northbound	Left	1,380 feet +500 feet	AM	185 feet	185 feet
			PM	185 feet	185 feet
	Right	1,380 feet +500 feet	AM	200 feet	200 feet
			PM	280 feet[3]	280 feet[3]
SR 99/ Cosumnes River Boulevard Southbound	Left	1,250 feet +500 feet	AM	265 feet	265 feet
			PM	570 feet	570 feet
	Right	1,250 feet	AM	1180 feet[3]	1180 feet[3]
			PM	**1310 feet[3]**	**1310 feet[3]**
SR 99/ Bruceville Road. Southbound Off-Ramp	Left	1,680 feet +130 feet	AM	355 feet	355 feet
			PM	350 feet	370 feet
	Right	1,680 feet +130 feet	AM	290 feet	385 feet
			PM	200 feet	245 feet
SR 99/ Westbound Mack Road, Southbound Off-Ramp	Right	1,500 feet +250 feet	AM	260 feet	260 feet
			PM	630 feet	630 feet

1. Storage is measured from stop line to gore point, plus additional storage provided by dual turn lanes (i.e., +500 feet indicates that a second turn lane with 500 feet of storage is provided).
2. 95th-percentile queue, reported in feet per lane.
3. Vehicle queues may be longer than reported; queue shown is maximum after two cycles.

Boldface underscored indicates vehicle queue exceeds available storage on off-ramp.

Source: Fehr & Peers, 2005.

Freeway Mainline Operations

Operations on the SR 99 mainline were evaluated. Table 3.3-22 (Freeway Mainline Operations – Baseline Conditions) and Table 3.3-23 (Freeway Mainline Operations – Year 2025 Conditions) summarize the peak-hour traffic operations under the baseline and Year 2025 conditions, with and without the proposed project. The following freeway segments would operate unacceptably under baseline with- and without-project conditions:

- Northbound SR 99 north of Mack Road – LOS F during the AM peak hour
- Northbound SR 99 south of Mack Road – LOS F during the AM peak hour
- Southbound SR 99 north of Mack Road – LOS F during the PM peak hour
- Southbound SR 99 south of Mack Road – LOS F during the PM peak hour

Table 3.3-22. Freeway Mainline Operations – Baseline Conditions[2]

Location	Baseline No Project						Baseline Plus Project					
	AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
	Volume	Density[1]	LOS	Volume	Density	LOS	Volume	Density	LOS	Volume	Density	LOS
Northbound SR 99 north of Mack Road	8,291	>45	**F**	5,022	30.7	D	8,331	>45	***F***	5,140	30.7	D
Northbound SR 99 south of Mack Road	6,625	>45	**F**	2,887	17.0	B	6,625	>45	**F**	2,887	17.0	B
Southbound SR 99 north of Mack Road	4,722	28.3	D	7,995	>45	**F**	4,820	29.0	D	8,045	>45	***F***
Southbound SR 99 south of Mack Road	3,626	21.3	C	6,445	>45	**F**	3,635	21.4	C	6,507	>45	***F***

1. Density in passenger cars per mile per lane
2. Calculated LOS
Boldface in shaded cell indicates an unacceptable LOS.
Boldface italic in shaded cell indicates a significant impact.

Source: Fehr & Peers, 2005.

For Year 2025 with- and without-project conditions, the following freeway mainline segments are forecast to operate unacceptably:

- Northbound SR 99 north of Mack Road – LOS F during the AM peak hour
- Northbound SR 99 south of Mack Road – LOS F during the AM peak hour
- Southbound SR 99 north of Mack Road – LOS F during the PM peak hour
- Southbound SR 99 south of Mack Road – LOS F during the PM peak hour

Table 3.3-23. Freeway Mainline Operations – Year 2025 Conditions[2]

Location	Year 2025 No Project						Year 2025 Plus Project					
	AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
	Volume	Density[1]	LOS	Volume	Density	LOS	Volume	Density	LOS	Volume	Density	LOS
Northbound SR 99 north of Mack Road	9,750	>45	**F**	5,690	37.7	E	9,790	>45	**F**	5,808	39.4	E
Northbound SR 99 south of Mack Road	7,450	>45	**F**	2,990	17.6	B	7,450	>45	**F**	2,990	17.6	B
Southbound SR 99 north of Mack Road	5,490	35.3	E	9,270	>45	**F**	5,588	36.4	E	9,320	>45	***F***
Southbound SR 99 south of Mack Road	4,356	25.8	C	7,540	>45	**F**	4,364	25.8	C	7,567	>45	***F***

1. Density in passenger cars per mile per lane.
2. Calculated LOS.
Boldface in shaded cell indicates an unacceptable LOS.
Boldface italic in shaded cell indicates a significant impact.

Source: Fehr & Peers, 2005.

On-Site Circulation

The on-site circulation system was analyzed under Year 2025 conditions, since the site should be designed to accommodate future traffic volumes. The recommendations for on-site circulation discussed below would accommodate baseline and Year 2025 traffic volumes.

Peak-hour turning movements at each project site driveway were developed based on the adjacent land uses and the distribution of project trips to the surrounding roadway network. Figure 3.3-11B displays the traffic volumes at the three access locations (driveways) for the proposed project under Year 2025 conditions. The volume shown in the figure reflects all vehicle-trips (i.e., new trips and existing trips).

Minimum Required Driveway Throat Depths

The minimum required throat depth (MRTD) was computed at each driveway for the proposed project under Year 2025 conditions. An adequate throat depth is necessary to provide sufficient stacking distance for vehicles exiting the project site to avoid blocking the first on-site circulation aisle. The Medical Center has an internal "ring" road that connects the access driveways with the on-site parking lots. This minimizes conflicts between vehicles accessing the site and parking vehicles. It also provides on-site storage to accommodate queues of vehicles exiting the site. Table 3.3-24 (Throat Depths at Project Driveways – Proposed and Required) displays the available throat depth and minimum required throat depth at each project driveway.

As shown in Table 3.3-24, the proposed throat depth at all of the project driveways would not have enough storage to accommodate the projected approach volumes. However, all of the approaches would be tied to the internal roadway system, and the internal roadway system would accommodate the queue spillback and not block access to parking aisles.

Table 3.3-24. Throat Depths at Project Driveways -- Proposed and Required

Driveway	Proposed Throat Depth[1]	Required Throat Depth[2]
1 (Alta Valley Way)	180 feet	290 feet
2 (Bruceville Road)	225 feet	265 feet
3 (Wyndham Drive)	100 feet	218 feet

1. Proposed throat depth based on project site plan.
2. Required throat depths were estimated using the methodology from *Estimation of Maximum Queue Length at Unsignalized Intersections* (Institute of Traffic Engineers Journal, November 2001).
Boldface underscore indicates that throat depth required exceeds throat depth provided.

Source: Fehr & Peers, 2005.

Needed Right-Turn Deceleration Lanes

Right-turn deceleration lanes reduce conflicts with through traffic, and thereby decrease the potential for rear-end collisions. Right-turn deceleration lanes are generally appropriate at driveways located on high-capacity arterial streets that serve a heavy volume of right-turn ingressing traffic (typically over 50 vehicles per hour). A right-turn deceleration taper should be considered at driveways on arterial streets when ingressing volumes are more modest (between 10 and 50 vehicles per hour).

Bruceville Road is an arterial, but is not a high-capacity facility; therefore, no right-turn deceleration lanes or tapers are recommended for collector streets such as Wyndham Drive. Right-turn deceleration lanes or tapers are not typically required.

Sight Distance Evaluation

The driveway on the eastern side of the project site (at Bruceville Road/Kaiser Access) is located on the outside of a horizontal curve on Bruceville Road. The minimum "stopping sight distance" required on this segment of Bruceville Road is 250 feet[1] (*Highway Design Manual*, Caltrans, 1995). Based on the project site plan, adequate sight distance would be provided at the driveway.

On-Site Pedestrian Circulation

According to the project site plan, walkways would be provided between the various uses and parking facilities within the Medical Center, with connections across internal circulation roadways. In addition, walkways would be provided between the existing sidewalks on Bruceville Road, Valley Hi Drive and Wyndham Drive and the internal pedestrian facilities. Additionally, access points are evaluated as part of study intersections.

3.3.3.6 Impacts and Mitigation Measures

The standards of significance used to identify traffic impacts of the proposed project are identified in Section 3.3.3.1. Mitigation measures are provided for "plus project" conditions since intersections that operate below the City standards under baseline and Year 2025 conditions are not considered the responsibility of the project.

The feasibility of the mitigation is also discussed. Some measures require right-of-way that is not available through implementation of the proposed project. To implement these measures, right-of-way would have to be acquired. The potential cost of right-of-way acquisition and/or lack of direct control of the right-of-way by the project sponsor makes the mitigation measures infeasible, per Section 15364 of California Environmental Quality Act (CEQA).

Intersections

The intersections listed below would be significantly impacted with the additional traffic generated by the proposed project, based on the City's significance criteria. Mitigation measures are proposed to reduce some of the project impacts to less than significant. Table 3.3-25 (Peak-Hour Intersection Operations – Baseline Conditions with Mitigation) displays the traffic operations with the mitigation measures for baseline plus--project conditions. Table 3.3-26 (Peak Hour Intersection Operations – Year 2025 Conditions with Mitigation) displays the traffic operations with the mitigation measures for the Year 2025 with-project conditions.

Impact 3.3-1: Bruceville Road/Kaiser Access – Baseline Plus-Project Conditions – The addition of traffic associated with the proposed project would degrade the LOS at this intersection from LOS A to LOS F during the AM peak hour. (Potentially Significant Impact)

[1] Based on sight distance standards for roadways with a 35 mile per hour design speed.

Mitigation Measure 3.3-1: Prior to occupancy, a traffic signal shall be installed at the Bruceville Road/Kaiser Access intersection and the eastbound (Kaiser Access) approach shall be reconfigured to include a right-turn lane and a left-turn lane.

Implementation of this mitigation measure would result in acceptable intersection operations (LOS B) during the AM and PM peak hours, and would reduce the project impact to less than significant.

Impact 3.3-2: Mack Road/Valley Hi Drive - La Mancha Way – Baseline Plus-Project Conditions – The addition of traffic associated with the proposed project would degrade the LOS at this intersection from LOS C to LOS D during the PM peak hour. (Potentially Significant Impact)

Mitigation Measure 3.3-2: Prior to occupancy, the project sponsor shall pay the City of Sacramento to adjust the PM peak-hour traffic signal phase timing (maximum green-light time) on the northbound, southbound, and eastbound approach left-turn and through movements to match projected traffic demands.

Implementation of this mitigation measure would result in acceptable intersection operations (LOS C) during the PM peak-hour, and would reduce the project impact to less than significant.

Table 3.3-25. Peak Hour Intersection Operations – Baseline Conditions with Mitigation

Intersection	Control	Average Delay (seconds per vehicle) – Level of Service			
		Baseline Plus Project Conditions – No Mitigation		Baseline Plus Project Conditions - Mitigated	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
1. Mack Road/Valley Hi Drive–La Mancha Way	Signal	30.8 (C)	***35.4 (D)***	30.8 (C)	***32.2 (C)***
7. Bruceville Road/Kaiser Access	TWSC	***61.8 (F)*** 105. 0 (F)	24.2 (C) 100.7 (F)	***16.1 (B)***	***17.9 (B)***
Boldface italic indicates traffic operations with recommended mitigation. Implementation of mitigation would reduce impact to less than significant. Boldface in a shaded cell indicates an unacceptable LOS. Boldface italic in a shaded cell indicates a significant impact.					

Source: Fehr & Peers, 2005.

Impact 3.3-3: Bruceville Road/Kaiser Access – Year 2025 Plus-Project Conditions – The addition of traffic associated with the proposed project would degrade the LOS at this intersection from LOS A to LOS F during the AM peak hour and from LOS C to LOS D during the PM peak-hour. (Potentially Significant Impact)

Mitigation Measure 3.3-3: Prior to occupancy, the project sponsor shall implement Mitigation Measure 3.3-1.

Implementation of this mitigation measure would result in acceptable intersection operations (LOS B) during the AM and PM peak hours, and would reduce the project impact to less than significant.

Table 3.3-26. Peak Hour Intersection Operations – Year 2025 Conditions with Mitigation

Intersection	Control	Average Delay (seconds per vehicle) – Level of Service			
		Year 2025 Plus Project Conditions – Without Mitigation		Year 2025 Plus Project Conditions – With Mitigation	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
7. Bruceville Road/Kaiser Access	TWSC	***64.2 (F)*** 111.0 (F)	***28.4 (D)*** 120.7 (F)	***16.3 (B)***	***17.8 (B)***
11. Cosumnes River Boulevard/Bruceville Road	Signal	**94.1 (F)**	***199.6 (F)***	***84.7 (F)***	***113.5 (F)***
Boldface italic indicates traffic operations with recommended mitigation; implementation of mitigation would reduce impact to less than significant. Boldface in shaded cell indicates an unacceptable LOS. Boldface italic in a shaded cell indicates a significant impact.					

Source: *Fehr & Peers*, 2005.

Impact 3.3-4: Cosumnes River Boulevard/Bruceville Road – Year 2025 Plus-Project Conditions – The addition of traffic associated with the proposed project would add more than 5 seconds of delay to PM peak-hour traffic intersections operations (LOS F). (Potentially Significant Impact)

Mitigation Measure 3.3-4: Prior to occupancy, the project sponsor shall pay the City of Sacramento to adjust the PM peak-hour traffic signal timing by increasing the phase time (maximum green-light time) on the eastbound, westbound, and southbound approach through and left-turn movements, and decreasing the phase time on the northbound approach movements (maximum green-light time) to match projected traffic demands.

Implementation of this mitigation measure would increase delay by less than five seconds during the PM peak hour and would reduce the project impact to less than significant.

Impact 3.3-5: Cosumnes River Boulevard/SR 99 Southbound Off-Ramp – Year 2025 Plus-Project Conditions – The addition of traffic associated with the proposed project would add more than 5 seconds of delay to the AM peak hour operations (LOS F). (Potentially Significant Impact)

Mitigation Measure 3.3-5: Prior to occupancy, the existing SR 99 southbound off-ramp to Cosumnes River Boulevard approach shall be restriped to allow for a left-turn lane, shared left-turn/right-turn lane, and a right-turn lane, and the cycle length at the intersection shall be increased by ten seconds during the PM peak hour.

Implementation of the recommended mitigation measure would result in a less than a five-second increase in delay during the AM peak hour at the Cosumnes River Boulevard/SR 99 Southbound Off-Ramp intersection for the proposed project under Year 2025 conditions, and would reduce the project impact to less than significant.

Freeway Ramps and Mainline – Baseline Plus-Project Conditions

The proposed project would not cause the traffic queue from the traffic signals at the northbound and southbound Mack Road/Bruceville Road and Cosumnes River Boulevard/Calvine Road off-ramps to

exceed the storage capacity of the ramps during the AM and PM peak hours. The proposed project would not cause the merge/diverge to worsen the freeway level of service; however, the project would add traffic to the freeway mainline within the study area.

Impact 3.3-6: SR 99 North of Mack Road – Baseline Plus Project – The proposed project would add traffic to mainline SR 99, which is operating at an unacceptable LOS F during the AM peak hour. (Potentially Significant Impact)

No feasible mitigation measure has been identified that would reduce the impact of the project on SR 99. Widening the freeway between Mack Road and Florin Road would reduce the impact but is not considered feasible. Therefore, the project impact would remain significant and unavoidable.

Impact 3.3-7: SR 99 South of Mack Road – Baseline Plus-Project Conditions – The proposed project would add traffic to mainline SR 99, which is operating at an unacceptable LOS F during the PM peak hour. (Potentially Significant Impact)

No feasible mitigation measure has been identified that would reduce the impact of the project on SR 99. Widening the freeway between Mack Road and Calvine Road/Cosumnes River Boulevard would reduce the impact, but is not considered feasible. Therefore, the project impact would remain significant and unavoidable.

Freeway Ramps and Mainline – Year 2025 Plus-Project Conditions

The proposed project would not cause the traffic queue at the traffic signals at the northbound and southbound Mack Road/Bruceville Road and Cosumnes River Boulevard/Calvine Road off-ramps to exceed the storage capacity of the ramps during the AM and PM peak hours. The proposed project would not cause the merge/diverge to worsen the freeway level of service; however, the project would add traffic to the freeway mainline within the study area.

Impact 3.3-8: SR 99 North of Mack Road – Year 2025 Plus-Project Conditions – The proposed project would add traffic to mainline SR 99, which is operating at an unacceptable LOS F during the AM peak-hour. (Potentially Significant Impact)

No feasible mitigation measure has been identified that would reduce the impact of the project on SR 99. Widening the freeway between Mack Road and Florin Road would reduce the impact but is not considered feasible. Therefore, the project impact would remain significant and unavoidable.

Impact 3.3-9: SR 99 South of Mack Road – Year 2025 Plus-Project Conditions – The proposed project would add traffic to southbound mainline SR 99, which is operating at an unacceptable LOS F during the PM peak hour. (Potentially Significant Impact)

No feasible mitigation measure has been identified that would reduce the impact of the project on SR 99. Widening the freeway between Mack Road and Calvine Road/Cosumnes River Boulevard would reduce the impact, but is not considered feasible. Therefore, the project impact would remain significant and unavoidable.

Bicycle Facilities

The proposed project would not affect the existing bicycle facilities within the project vicinity. In addition, the proposed project would not interfere with the planned bikeways shown in the *Sacramento City/County 2010 Bikeway Master Plan*. Implementation of the proposed project would have no impact and no mitigation is required.

Pedestrian Facilities

The proposed project would be required to provide sidewalks as part of the required frontage improvements as a condition of project approval, in addition to pedestrian connectivity with the project site. Thus, the project would not affect pedestrian circulation within the project vicinity. Implementation of the proposed project would have no impact and no mitigation is required.

Transit Facilities

The transit trips generated by the project would be distributed among the existing transit services (i.e., five bus routes serving the roadways surrounding the project). There is sufficient capacity on these routes to accommodate the addition of project trips. Therefore, the additional ridership generated by the project is not expected to exceed the available or planned transit system capacity. Implementation of the proposed project would have a less than significant impact on transit facilities and no mitigation is required.

CHAPTER 4 – ALTERNATIVES TO THE PROJECT

4.1 INTRODUCTION

Section 15126.6 of the *CEQA Guidelines* requires that an EIR describe a range of reasonable alternatives to the proposed project that would feasibly attain the basic project objectives and avoid or substantially lessen any significant effects of the project. Alternatives may be eliminated from detailed analysis in an EIR if they fail to meet most of the basic project objectives, are determined to be infeasible, or cannot be demonstrated to avoid or lessen significant environmental impacts.

Chapter 3 (Existing Conditions, Environmental Impacts and Mitigation Measures) of this EIR analyzes the environmental impacts of the proposed project. The analyses conclude that the proposed project would cause potentially significant environmental impacts, some of which could be mitigated to less than significant levels. As described in Chapter 3, the project's potentially significant impacts (before mitigation) are related to the following environmental parameters:

- Air quality
- Transportation and circulation

The alternatives analyzed in this chapter were selected for their potential to eliminate or reduce the impacts of the proposed project, and for their potential to generate fewer impacts or to require lesser levels of mitigation. These alternatives are:

- No-Project Alternative
- Reduced-Intensity Alternative

In addition to the above alternatives, one additional alternative (Alternative Site[s]) was originally considered, but was eliminated from further analysis. This alternative is discussed in Section 4.2.

4.2 ALTERNATIVES CONSIDERED AND ELIMINATED

In addition to the alternatives analyzed in this EIR, one additional alternative was considered, Alternative Site(s). However, the Alternative Site(s) was eliminated from the analysis because it is infeasible and would not meet the overall objectives of the proposed project (pursuant to *CEQA Guidelines* Section 15126.6c). This alternative and the reasons for its elimination are discussed below.

Alternative Site(s)

For the alternatives analysis, an alternative site for the proposed project was considered. Since the basic objective of the proposed project is to improve current services on the project site and better serve the needs of the South Sacramento community, an alternative site would not meet these objectives. To relocate the project to an alternative site, the entire Medical Center would require relocation and extensive construction. An off-site alternative would not meet the project objectives to expand the existing facility, and could result in greater impacts on the environment, depending on the current use and location of the alternative site.

Section 15126.6(f)(2) of the *CEQA Guidelines* states that an alternative would be considered feasible if "the significant effects of the project would be avoided or substantially lessened by putting the project in

another location. Only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR." Locating the Medical Center to an alternative site would create substantial new environmental impacts; therefore, this alternative was eliminated because it would be considered infeasible.

4.3 NO-PROJECT ALTERNATIVE

Section 15126.6(e) of the *CEQA Guidelines* requires an EIR to analyze the No-Project Alternative to allow decision-makers to compare the impacts of approving the proposed project with the impacts of not approving the project. The No Project Alternative would result in the Medical Center remaining at its current size and providing the same services.

Under this Alternative, the environmental impacts from the project site would be less than the proposed project. However, use of the existing Medical Center would continue to increase as the community's population grows, and traffic and subsequent air quality impacts could occur over time.

4.4 REDUCED-INTENSITY ALTERNATIVE

The Reduced-Intensity Alternative would reduce the number of new hospital beds on the project site by decreasing the height of the Hospital Tower by one floor (approximately 27,000 square feet). The reduced Hospital Tower would total approximately 131,000 square feet, with 72 medical/surgery beds, ten new intensive care beds, and ten relocated intensive care beds. This represents a reduction of 17 percent of the proposed size of the Hospital Tower and 11 percent of the overall project.

The Outpatient Surgery Center (OSC), Emergency Department (ED) addition, Helipad, and other proposed project elements would remain the same in order to meet the project objectives.

4.4.1 Air Quality

The Reduced-Intensity Alternative would have slightly reduced air quality impacts, compared to the proposed project. Short-term construction impacts would be slightly reduced with one less floor to construct on the Hospital Tower. Long-term operational impacts on ozone precursors would be reduced since fewer vehicle trips would be generated by the Hospital Tower. Additionally, air quality impacts from stationary sources would be slightly less than the proposed project because the heating, ventilating, and air conditioning and other equipment would heat and cool one less floor of the Hospital Tower. The impacts on air quality with this alternative would continue to be potentially significant, although mitigation measures would reduce those impacts to a less than significant level.

4.4.2 Transportation and Circulation

According to the project site plan, three driveways would provide access to the site. These driveways would not change with the Reduced-Intensity Alternative. The driveways are described below.

- *Bruceville Road at Alta Valley Way Driveway* – An existing full-access driveway located on Bruceville Road at the Bruceville Road/Alta Valley Way intersection.
- *Bruceville Road Driveway* – The existing emergency center access located on Bruceville Road, approximately 670 feet north of the Bruceville Road/Wyndham Drive intersection, which provides full access to and from the project site.

- Wyndham Drive Driveway – An existing full-access driveway on Wyndham Drive, 430 feet west of the Wyndham Drive/Arroyo Vista Drive intersection, which is planned to be closed with construction of the proposed project and would be replaced by a full-access driveway at the Wyndham Drive/Arroyo Vista Drive intersection.

Trip generation rates published in *Trip Generation*, 7th Edition, Institute of Transportation Engineers (2003), were used to estimate the project alternative trip generation.

Table 4-1 (Vehicle Trip Generation Comparison for Proposed Project and Reduced-Intensity Alternative) shows that the number of trips generated by the proposed project was calculated to be 453 AM peak-hour trips and 559 PM peak-hour trips. The trip generation for the Reduced-Intensity Alternative was calculated to be 409 AM peak-hour trips and 506 PM peak-hour trips. According to Table 4-1, the Reduced-Intensity Alternative would generate approximately ten percent fewer trips than the proposed project. Thus, traffic impacts from the Reduced-Intensity Alternative would be slightly less than those expected with construction of the proposed project.

Table 4-1. Vehicle Trip Generation Comparison of Proposed Project and Reduced-Intensity Alternative

Land Use	Amount [2]	Trip Rate [1] AM Peak Hour			Trips AM Peak Hour			Trip Rate [1] PM Peak Hour			Trips PM Peak Hour		
		In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Proposed Project													
Hospital	158.0 KSF	67%	33%	1.83 TE/ KSF	194	95	289	33%	67%	2.19 TE/ KSF	114	232	346
Medical Offices	86.3 KSF	79%	21%	2.48 TE/ KSF	169	45	214	27%	73%	3.19 TE/ KSF	74	201	275
Internal	(10%)				36	14	50				19	43	62
				Total	327	126	453				169	390	559
Reduced Intensity Alternative													
Hospital	131.0 KSF	67%	33%	1.83 TE/ KSF	161	79	240	33%	67%	2.19 TE/ KSF	95	192	287
Medical Offices	86.3 KSF	79%	21%	2.48 TE/ KSF	169	45	214	27%	73%	3.19 TE/ KSF	74	201	275
Internal	(10%)				33	12	45				*17*	*39*	*56*
				Total	297	112	409				152	354	506

1. Trip generation rates are from *Trip Generation,* 7th Edition (Institute of Traffic Engineers, 2003).
2. KSF= thousand square feet. Based on Kaiser Permanente South Sacramento Medical Center Expansion Planning Application, February 15, 2005

NA = not available

Source: Fehr & Peers, 2005

While the Reduced-Intensity Alternative would result in fewer vehicle trips, the impacts on neighboring intersections, roadways and freeways would continue to be significant and unavoidable.

4.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires an EIR to identify the "environmentally superior alternative," which is the alternative that would result in the fewest or least significant environmental impacts. Table 4-2 (Comparative Analysis of the Environmental Impacts of the Proposed Project and the Project Alternatives) summarizes and compares the anticipated impacts of the proposed project and each of the project alternatives.

Table 4-2. Comparative Analysis of the Environmental Impacts of the Proposed Project and the Project Alternatives

Environmental Issue	Proposed Project	No Project Alternative	Reduced Intensity Alternative
Air Quality	LSIM	NI	LSIM (-)
Transportation and Circulation	PSI	NI	PSI (-)

PSI = Potentially Significant Impact.
LSIM = Less Than Significant Impact with Mitigation.
LSI = Less Than Significant Impact.
NI = No Impact.
(+) = Level of impact is more severe than that of the proposed project.
(-) = Level of impact is less severe than that of the proposed project.

According to Table 4-2, the No-Project Alternative would be considered the environmentally superior alternative. However, if the No-Project Alternative is identified as the environmentally superior alternative, then CEQA requires that another alternative be chosen as the environmentally superior alternative. Therefore, based on the above analysis, the Reduced-Intensity Alternative would be considered the environmentally superior alternative. This alternative would have less of an impact on traffic and air quality than the proposed project; however, significant impacts on transportation and circulation would occur, regardless of the size of the project. Also, the Reduced-Intensity Alternative would not meet the project's objectives to serve the needs of the growing South Sacramento community through the year 2018.

CHAPTER 5 – OTHER CEQA CONSIDERATIONS

Section 15126 of the *CEQA Guidelines* requires that all aspects of a project be considered when evaluating its impact on the environment, including planning, acquisition, development and operation. As part of this analysis, the EIR must also identify (1) significant environmental effects of the proposed project; (2) significant environmental effects that cannot be avoided if the proposed project is implemented; (3) significant irreversible environmental changes that would result from implementation of the proposed project; and (4) growth-inducing impacts of the proposed project.

5.1 SIGNIFICANT ENVIRONMENTAL IMPACTS

Chapter 3 of this EIR (Existing Conditions, Environmental Impacts and Mitigation Measures) provides a comprehensive identification of the proposed project's environmental impacts, including the level of significance both before and after mitigation.

5.2 SIGNIFICANT AND UNAVOIDABLE IMPACTS

Section 15126.2(b) of the *CEQA Guidelines* requires an EIR to discuss the significant impacts of a proposed project that cannot be reduced to a less than significant level. These impacts are referred to as "significant and unavoidable impacts" of the project.

As described in Section 3.3 (Transportation and Circulation), implementation of the proposed project would result in the following significant unavoidable impacts:

Impact 3.3-6: SR 99 North of Mack Road – Baseline Plus Project – The proposed project would add traffic to mainline SR 99, which is operating at an unacceptable LOS F during the AM peak hour.

Impact 3.3-7: SR 99 South of Mack Road – Baseline Plus Project – The proposed project would add traffic to mainline SR 99, which is operating at an unacceptable LOS F during the PM peak hour.

No feasible mitigation measures have been identified that would reduce the project impacts on SR 99. Widening the freeway between Mack Road and Calvine Road/Cosumnes River Boulevard would reduce the impact, but is not considered feasible. Therefore, the impact would remain significant and unavoidable.

In addition, implementation of the proposed project would result in the following significant unavoidable cumulative impacts:

Impact 3.3-8: SR 99 north of Mack Road – Year 2025 Plus Project – The proposed project would add traffic to mainline SR 99, which is operating at an unacceptable LOS F during the AM peak hour.

Impact 3.3-9: SR 99 south of Mack Road – Year 2025 Plus Project – The proposed project would add traffic to southbound mainline SR 99, which is operating at an unacceptable LOS F during the PM peak hour.

As with Impacts 3.3-6 and 3.3-7 above, no feasible mitigation measures have been identified that would reduce the project impacts on SR 99. Therefore, the impact would remain significant and unavoidable.

5.3 SIGNIFICANT IRREVERSIBLE CHANGES

Section 15126.2(c) of the *CEQA Guidelines* requires an EIR to discuss the significant irreversible environmental changes that would result from implementation of a proposed project. Examples are:

- Uses of nonrenewable resources during the initial and continued phases of the project (because a large commitment of such resources make removal or nonuse thereafter unlikely);
- Primary and secondary impacts of the project that would generally commit future generations to similar uses (e.g., highway improvements that would provide access to a previously inaccessible area); and/or
- Irreversible damage that could result from any potential environmental accidents associated with the project.

Implementation of the proposed project would require the long-term commitment of natural resources. Actions related to development of the project would result in an irretrievable commitment of nonrenewable resources, such as energy supplies and other construction-related resources. These energy resources would be used for construction and long-term operation of the hospital and would include heating and cooling of buildings, transportation of people and goods to and from the site, heating and refrigeration of food and water, lighting, and other associated energy needs.

Insofar as fossil fuels currently are the principal source of energy, the proposed project would incrementally reduce existing supplies of fuel, such as fuel oil, natural gas, and gasoline. This represents a long-term commitment to consumption of essentially nonrenewable resources.

The proposed project and other projects in the City would require the commitment or destruction of other nonrenewable and slowly renewable resources. These resources include (but are not limited to) sand and gravel; asphalt; petrochemical construction materials; steel, copper, lead, and other metals; and water. A marginal increase in the commitment of social services and public maintenance services (e.g., waste disposal and treatment) would also be required.

The environmental changes produced by the proposed project would occur mainly as a result of the increased traffic to and from the site. There would be a significant and unavoidable impact on SR 99 that cannot be feasibly mitigated. However, all other impacts from increased traffic would be mitigated to a less than significant level.

Certain hazardous materials typical of a hospital would be used on the property. Accidental spills of fuels, paints, or other construction-related materials might occur on the project site during construction. However, these types of accidents would be limited because site development would be implemented and overseen by experienced construction workers. Such potential spills would not result in irreversible environmental changes.

5.4 GROWTH-INDUCING IMPACTS

As required by Section 15126.2(d) of the *CEQA Guidelines*, an EIR must discuss ways in which a proposed project could foster economic or population growth, either directly or indirectly, in the surrounding environment. Also, an EIR must discuss the characteristics of the project that could encourage or facilitate other activities that could significantly affect the environment, either individually or cumulatively. Growth can be induced in a number of ways, such as through the elimination of

obstacles to growth, the stimulation of economic activity within the region, or through the establishment of policies or other precedents that directly or indirectly encourage additional growth.

Although the proposed project would not induce growth directly through additional housing or indirectly through enhanced infrastructure, it would stimulate economic activity in the region. The expanded hospital would generate an estimated 500 additional employment opportunities for hospital personnel and support staff; this is a direct economic effect that would impact growth in the area. Indirect economic effects would include additional jobs that are generated through the local spending by the additional project-generated hospital employees.

The proposed project would, therefore, foster economic growth through increased employment and other indirect economic activities. However, this economic growth would not result in any significant physical changes to the environment, given that the growth would be spread throughout the Sacramento metropolitan region and beyond.

CHAPTER 6 – REPORT PREPARATION PERSONNEL

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CHAPTER 7 – REFERENCES CITED

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