

PUBLIC REVIEW DRAFT

ENVIRONMENTAL IMPACT REPORT

CRYSTAL BAY

STOCKTON, CALIFORNIA

EIR FILE NO. 6-05

SCH#2007032116 / ANNEXATION#A-05-4 / GENERAL PLAN
AMENDMENT#GPA7-05 / PREZONING#Z-07-05 / MASTER DEVELOPMENT
PLAN#MDP3-05 / DEVELOPMENT AGREEMENT DA4-05 / TENTATIVE
MAP#TM17-05 / PRECISE ROAD PLAN AMENDMENT#PR4-05

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Submitted to:

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ACRONYM LIST

ACOE	Army Corps of Engineers
ADT	average daily traffic
AG	General Agriculture
APN	Assessor's Parcel Number
AQAP	Air Quality Attainment Plan
AWS	all-way stop controlled intersection
C3	row and field crops
CAA	Clean Air Act
California Register	California Register of Historic Places
Caltrans	California Department of Transportation
Cal Water	California Water Services Company
CARB	California Air Resources Board
CCAA	California Clean Air Act
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
cfs	Cubic feet per second
City	City of Stockton
CNDDDB	California Natural Diversity Data Base
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CO	carbon monoxide
COSMA	City of Stockton Metropolitan Area
County	County of San Joaquin
C-R	Commercial Recreation
CVPIA	Central Valley Project Improvement Act
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
DEIR	Draft Environmental Impact Report
DHS	California Department of Health Services
DOF	California Department of Finance
DWR	California Department of Water Resources
EIR	Environmental Impact Report
EPA	U.S. Environmental Protection Agency
EVA	emergency vehicle access
FAR	floor-to-area ratio
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Maps
fps	Feet per second
GAMAQI	Guide for Assessing and Mitigating Air Quality Impacts

GPA	General Plan Amendment
gpd	gallons per day
HAP	hazardous air pollutants
HCM	Highway Capacity Manual
hr(s)	hour(s)
I-5	Interstate 5
LAFCO	Local Agency Formation Commission
L _{dn}	day-night average noise
L _{eq}	day-night average noise level
L _{max}	maximum noise level
L _N	percentile noise exceedance levels
LOMR	Letter of Map Revision
LOS	level of service
LTS	less than significant
LUSD	Lodi Unified School District
MBTA	Migratory Bird Treaty Act
MEI	maximally exposed individual
mgd	million gallons per day
mg/L	milligrams per liter
MOU	Memorandum of Understanding
mph	miles per hour
MUD	Municipal Utilities District
M-X	Mixed Use
NA	not available
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
National Register	National Register of Historic Places
ND	not detectable
NMFS	National Marine Fisheries Service
NOI	Notice of Intent
NOP	Notice of Preparation
NO ₂	nitrogen dioxide
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
O ₃	ozone
ODS	owner, developer, or successor-in-interest
OHWM	ordinary high water mark
PACE	Pacific Advanced Civil Engineering, Inc.
Pb	Lead
PG&E	Pacific Gas and Electric
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
PS	potentially significant
RD 2042	Local Reclamation District 2042
ROG	reactive organic gases
ROW	right-of-way

RWCF	Regional Wastewater Control Facility
RWQCB	Regional Water Quality Control Board
SAAQS	State Ambient Air Quality Standards
sec	seconds
SEWD	Stockton East Water District
sf	square feet
SIP	State Improvement Plan
SJAFCA	San Joaquin Area Flood Control Agency
SJCOG	San Joaquin County Council of Governments
SJMSCP	San Joaquin County Multi-Species Habitat Conservation and Open Space Plan
SJVAB	San Joaquin Valley Air Basin
SJVUAPCD	San Joaquin Valley Air Pollution Control District
SO ₂	sulfur dioxide
SPAS	Special Planning Area Study
SPS	sewer pump station
SPW	Spanos Park West
SR	State Route
SSSC	side street stop controlled intersection
STC	sound transmission class
stds	standards
STIP	Statewide Transportation Implementation Plan
SU	significant and unavoidable
SWPPP	Storm Water Pollution Prevention Plan
SWQCCP	Storm Water Quality Control Criteria Plan
TDS	Total dissolved solids
U	urban
U2	Scraped and paved
UBC	Uniform Building Code
UCMP	University of California Museum of Paleontology
μg/L	micrograms per liter
μg/m	micrograms per meter
μg/m ³	micrograms per cubic meter
USBR	U.S. Bureau of Reclamation
USFWS	U.S. Fish and Wildlife Service
V/C	volume to capacity ratio

CHAPTER 1.0 EXECUTIVE SUMMARY

1.1 OVERALL PROJECT SUMMARY

Summary Project Description

The project proposes a General Plan Amendment, Rezoning, Master Development Plan, Tentative Map, Eight Mile Road Precise Road Plan amendment, Development Agreement, and annexation of three parcels comprising the 173 + acre project site. The proposed project consists of residential uses at a variety of densities. The development plan consists of residential uses that are generally defined by major circulation roads, and a project created lake. The community is anticipated to include approximately 1,363 total units, consisting of four residential product types: traditional single family units; small lot, cluster type development or courtyard units; and high-density residential units. The lake will provide for storm water detention, treatment and a source of non-potable water for landscape irrigation. Runoff will flow from the Crystal Bay Lake into the lake planned at Westlake Villages prior to discharging into Disappointment Slough. A total of 13.1 acres of parkland will be dedicated as part of this proposed project.

It should be noted that the project will be constructed in phases; the multi-family parcel will develop in a later phase. In the interim, the parcel will be used for storage of runoff waters diverted from the existing drainage ditch (between Westlake Village and Crystal Bay). Earth excavated from the detention basin will be stock-piled adjacent to the basin creating a 10-foot high mound. Ultimately, a new drainage system will be permanently constructed to discharge irrigation waters to a pump station adjacent to the levee at the intersection of Rio Blanco Road and Eight Mile Road, and the multi-family residential product will be developed. Additional earth fill material may be imported into the temporary detention basin to create a developable pad.

Project Location

The Master Development Plan Area contains approximately ±173 acres, located within the San Joaquin County near the northwest portion of the City of Stockton, California. The project site is bounded to the north by Eight Mile Road, to the south and east by Westlake Villages (an approved residential development), and to the west by Bishop Cut and Rio Blanco Road.

1.2 SUMMARY OF IMPACTS, MITIGATION MEASURES AND ALTERNATIVES

This Environmental Impact Report (EIR) is intended to address the potential environmental impacts associated with the implementation of the Crystal Bay project.

This summary of the potential impacts, mitigation measures, and level of significance generally describes the effects of the proposed project and mitigation measures required to reduce the impacts (a more detailed analysis of impacts is provided in the Chapter 4.0 Environmental Analysis). This summary also includes a discussion of potential areas of controversy, significant impacts that can be reduced to acceptable levels, unavoidable adverse impacts, and project alternatives.

1.3 POTENTIAL AREAS OF CONTROVERSY

Through the Notice of Preparation (NOP), a number of issues have been identified as potentially controversial. The NOP and comments are provided in Appendix A. Issues identified through the NOP process includes:

- Loss of agricultural lands
- Mosquito-related health risks
- Land use compatibility issues
- Traffic
- Air quality
- Potable water supplies
- Utilities and service systems

1.4 SIGNIFICANT IMPACTS THAT CAN BE REDUCED TO ACCEPTABLE LEVELS

Through the environmental review process, potentially significant impacts were noted and additional mitigation measures were added to assist in reducing the potential effects of the project. These environmental topics include: geophysical resources, water resources, biological resources, noise, public services, cultural resources, aesthetics/light and glare, water supply assessment, hazardous materials/wastes, and utilities and service systems.

1.5 UNAVOIDABLE ADVERSE IMPACTS

Four environmental topics—air quality, land use (conversion of agricultural uses), traffic, and population—were identified as being significantly impacted by the proposed project, and these could not be mitigated to a level of insignificance, even with the application of mitigation measures.

A Statement of Overriding Considerations is needed prior to project approval, in light of the adverse impacts identified above.

1.6 PROJECT ALTERNATIVES

The Proposed Project, No Project, Minimum Density, and All Conventional Housing alternatives were evaluated to determine if potentially significant impacts could be reduced or eliminated.

Alternative 1: No Project Alternative

The No Project alternative would maintain the status quo on the project site. Current agricultural uses would persist. Potential impacts to water quality and wind erosion would continue unabated under this alternative. The No Project alternative would avoid a majority of the impacts associated with the Proposed Project and is an environmentally superior alternative.

Alternative 2: Low Density Residential Alternative

The Low Density residential alternative would consist 173 of single family homes at a density of one unit per acre. This alternative would have 1,270 fewer units than the proposed project. All other project uses would remain the same.

Alternative 3: All Conventional Housing Alternative

The all conventional housing alternative would consist of approximately 700 single family homes at a density of four units per acre. All other project uses would remain the same.

1.7 SUMMARY TABLE

Information in the following table (Table 1.1.A), Summary of Impacts, presents the potential effects from the proposed project, mitigation measures, and level of significance before and after mitigation measures are implemented.

Table 1.1.A: Summary of Impacts

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
4.1 Geophysical Resources			
<p>GEO-1: Development of the project site would include substantial grading activities that could result in soil erosion (Significance Criterion GEO a).</p>	<p>PS</p>	<p>GEO-1a: Prior to approval of the improvement plans for site development, the project applicant will submit an erosion control plan to the Director of Municipal Utilities Department (MUD). Erosion control measures will include techniques such as physical and vegetative stabilization measures and runoff diversion measures, retention of vegetation, hydroseeding, geotextiles and mats, and straw bale or sandbag barriers and avoidance of grading activities near water channels to the maximum extent feasible. The proposed project must also comply with applicable State and City codes and regulations and adopted standards.</p> <p>GEO-1b: Prior to construction, the applicant shall provide evidence to the Director of MUD that a Notice of Intent (NOI) has been filed with the Regional Water Quality Control Board (RWCQB) regarding compliance with National Pollutant Discharge Elimination System (NPDES) General Construction permit requirements.</p>	<p>LTS</p>
<p>GEO-2: Implementation of the proposed project would expose people and structures to major seismic hazards (Significance Criterion GEO b).</p>	<p>PS</p>	<p>GEO-2: Prior to approval of the building plans for site development, a seismicity report will be completed by an engineering geologist or equivalent professional regarding possible damage from seismic shaking and liquefaction. Plans for all structures shall be reviewed and</p>	<p>LTS</p>

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		<p>approved by the Building Division prior to approval of the building plans and building permits. This report will include:</p> <ol style="list-style-type: none"> 1. An analysis of seismic hazards anticipated at the project site from regional faults. 2. A discussion and recommendations for seismic mitigation at the project site. Recommendations may include use of reinforced concrete foundations and avoidance of potentially unstable foundation materials. 3. The project applicant will incorporate the recommendations of the seismicity report into the design for all structures proposed at the project site. All structures will be designed to withstand the anticipated seismic hazards determined in the seismicity report. 	
<p>GEO-3: Project implementation may encounter groundwater or soil conditions during grading that could affect structural support and suitability (Significance Criterion GEO c).</p>	<p>PS</p>	<p>GEO-3a: The site specific geotechnical study prepared for the proposed project site provides information on the suitability of excavated material as engineered fill. The study also provides recommendations for treating onsite soils and alternatives to using onsite soils as engineered fill. The geotechnical study should be amended to include the following:</p> <p>GEO-3b: To mitigate potential impacts of expansive soils, construction of the proposed project should consider use of post tensioned slab foundations designed to resist and/or span the expansive soils. Other options are provided in the geotechnical report. The geotechnical study provided in Appendix D provides specific</p>	<p>LTS</p>

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		<p>information regarding various construction options for building on expansive soils and drainage considerations. Homeowners should be made aware of the risks associated with expansive soils and the importance of maintaining positive drainage to convey water away from structures. Homeowners should also be made aware that potential man-made water sources such as pipes, drains, pools, ponds should be tested periodically and/or examined for signs of leakage or damage.</p> <p>GEO-3c: To mitigate potential impacts of compressible soils, construction of the proposed project should consider using post tensioned slab foundations or replacing this soil material with engineered fill. The geotechnical study provided in Appendix D provides specific information regarding various construction options for building on compressible soils.</p> <p>GEO-3d: The geotechnical study recommends the installation of permanent dewatering systems to mitigate the high ground water levels on the project site. Additionally, "toe" drains should be installed along levees to prevent "underseepage." Construction dewatering should also be implemented to ensure stable construction.</p> <p>GEO-3e: Further testing should be performed prior to and during construction of the liners for the onsite lakes. The technical study presented in</p>	

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		<p>Appendix D provides additional recommendations for construction of the onsite lakes. The study also recommends hiring a lake construction consultant to provide the final lake design.</p> <p>GEO-3f: The geotechnical study provides site specific recommendations and alternatives for mitigating potential impacts. Prior to the issuance of building permits for site development, the project applicant shall submit the geotechnical study to the Director of Community Development Department for approval. This consultation and approval process will ensure that the construction methods and alternatives provided within the study are viable for mitigating potential geophysical constraints of the site.</p>	
4.2 Air Quality			
AIR-1: The project will not create short term construction equipment exhaust related impacts	LTS	No mitigation required.	LTS
AIR-2: The project should not create objectionable odors.	LTS	No mitigation required.	LTS
AIR-3: The project should not create Hazardous Air Pollutants Impacts.	LTS	No mitigation required.	LTS
AIR-4: The project may Conflict with adopted environmental plans, policies, or regulations for air pollutants.	PS	<p>AIR-1: The following measures shall be incorporated into the design and operation of the proposed project;</p> <ul style="list-style-type: none"> • Energy-efficient design shall be provided for homes and buildings, including automated control systems for heating and air conditioning and energy efficiency beyond title 24 	LTS

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		<p>requirements, lighting controls and energy-efficient lighting in buildings, increased insulation beyond Title 24 requirements, and light-colored roof materials to reflect heat.</p> <ul style="list-style-type: none"> • Large canopy trees shall be carefully selected and located to protect buildings from energy-consuming environmental conditions and shade-paved areas. Trees shall be selected to shade 50% of paved areas within 15 years. • Plant deciduous trees on the south- and west-facing sides of buildings. • Plant trees adjacent to all sidewalks thirty foot on center and at a ratio of one tree for each parking space. Structural soil shall be used under paved areas to improve tree growth in locations where street trees are located or planned. • The City shall implement measures to reduce the amount of vehicle traffic to and from the project area to further reduce air pollution in the valley. This could include provisions such as encouraging employees to rideshare or carpool to the project site, or incentives for employees to use alternative transportation. • If transit service is available to the project site, improvements shall be made to encourage its use. If transit service is not currently available but is planned for the area in the future, easements shall be reserved to provide for future improvements. These include bus turnouts, loading areas, route signs, and shade structures. Pedestrian access shall be directed to the main entrance of the project from existing or potential public transit stops, and appropriately designed 	

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		<p>sidewalks shall be provided. Such access shall consist of paved walkways or ramps and shall be physically separated from parking areas and vehicle access routes. Appropriations made to facilitate public or mass transit will help mitigate trips generated by the project.</p> <ul style="list-style-type: none"> • Sidewalks and bicycle paths shall be provided throughout as much of the project as possible and connect to any nearby open space areas, parks, schools, and commercial areas to encourage walking and bicycling. Connections to nearby public uses and commercial areas shall be made as direct as possible to promote walking for some trips. Sidewalks and bikeways shall be designed to separate pedestrian and bicycle pathways from vehicle paths. Sidewalks and bikeways shall be designed to accommodate and be appropriately sized for anticipated future pedestrian and bicycle use. Such pathways shall be easy to navigate and designed to facilitate pedestrian movement through the project and create a safe environment for all potential users from obstacles and automobiles. Pedestrian walkways shall be created to connect all buildings throughout the project. The walkways shall create a safe and inviting walking environment for people wishing to walk from one building to another. Walkways shall be installed to direct pedestrians from the street sidewalk to the buildings. Safe and convenient pathways shall be provided for pedestrian movement in large parking lots. Mid-block paths shall be installed to facilitate pedestrian 	

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		<p>movement through long blocks and cul-de-sacs. Sidewalks shall be designed for high visibility (brightly painted, different color of concrete, etc.) when crossing parking lots, streets, and similar vehicle paths. Pathways through the project shall be built in anticipation of future growth/development.</p> <ul style="list-style-type: none"> • Exits to adjoining streets shall be designed to reduce time to re-enter traffic from project site. • Efficient interior circulation and pedestrian access within the project area and logical connection points for future development on the surrounding properties shall be provided. • Measures shall be implemented to reduce the amount of vehicle traffic to and from the residential areas that further reduce air pollution in the SJVAB. This could include providing an information center for residents to coordinate carpooling. <p>The project applicant shall incorporate the following in building plans:</p> <ul style="list-style-type: none"> A. Solar or low-emission water heaters shall be used with combined space/water heater units. B. Double-paned glass or window treatment for energy conservation shall be used in all exterior windows. C. Buildings shall be oriented north/south where feasible. 	
AIR-5: Long term air quality impacts with localized effects.	PS	AIR-2: The project would result in total (vehicular and stationary) daily emissions exceeding the daily emissions thresholds established by the SJVAPCD. No feasible	SU

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		<p>mitigation measures would reduce the impacts to less than significant. However, the proposed project will be required to comply with Title 24 of the California Code of Regulations established by the Energy Commission regarding energy conservation standards. The SJVAPCD has created rules and regulations related to development projects to help minimize air quality impacts. Rule 4901 puts limits on wood-burning devices in new homes to minimize particulates from wood smoke. There is a limit on the number and type of wood-burning devices allowed in new houses and residential developments. The requirements would apply to the proposed project. Based on a density ratio of more than two homes per acre, no open-hearth fireplaces would be allowed.</p> <p>More recently, the SJVAPCD adopted Indirect Source Review Rule 9510. New development projects in the San Joaquin Valley are affected by this Rule which requires a 20 percent reduction in construction equipment exhaust nitrogen oxides; a 45 percent reduction of construction equipment PM10; a 33 percent reduction in operational nitrogen oxides over 10 years; and a 50 percent reduction in operational PM10 over 10 years. Under the Rule, on-site mitigation can be used to achieve these reductions or an off-site fee may apply. Off-site fees reduce emissions by helping to fund clean air projects in the San Joaquin Valley.</p>	
AIR-6: The proposed project would contribute to	PS	Feasible mitigation measures do not exist that	SU

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
cumulative air quality impacts. Additionally, the project is not consistent with the Air Quality Attainment Plan.		would reduce these impacts to a less than significant level.	
4.3 Water Resources			
FC-1: The project will not be located within the 100-year flood plain.	LTS	No mitigation required.	LTS
FC-2: The proposed project will increase the amount of impermeable surfaces which will increase site runoff quantities.	PS	<p>FC-1a: Prior to issuance of building permits for new development, the applicant shall provide evidence to the Director of Community Development Department that flood assessments have been paid.</p> <p>FC-1b: Prior to the filing of any parcel map or final map, storm drainage analysis or plans demonstrating that the onsite lake and stormwater runoff from the project can be adequately conveyed shall be reviewed and approved by the City of Stockton Department of MUD, City of Stockton Parks and Recreation, and the Public Works Department.</p> <p>GEO-3d and GEO 3f will also be implemented. These measures will serve to protect the site from “underseepage,” localized flooding and other geotechnical constraints.</p>	LTS
WQ-1: Project implementation could result in the potential degradation of water quality during project construction and operation.	PS	<p>WQ-1a: Prior to issuance of grading permits for the project site, the applicant shall submit evidence to the Director of the MUD indicating that a NOI and a copy of the developer's or contractor's SWPPP have been filed with the RWQCB.</p> <p>WQ-1b: The project applicant will comply with the applicable water quality and storm drainage</p>	LTS

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		<p>discharge requirements consistent with any waste discharge or water quality certification requirements authorized by the RWQCB. A Water Quality Certification may also be required.</p> <p>WQ-1c: This project shall comply with the Stockton Municipal Code Section 7-859, Storm Water Quality Control Criteria Plan and as outlined in the City's Phase 1 Storm Water NPDES permit issued by the California Water Quality Control Board, Central Valley Region (Order No. R5-2002-0181). The Owners, Developers, and/or Successors-in-Interest (ODS) shall establish a maintenance entity acceptable to the City to provide funding for operation, maintenance, and replacement costs of storm water best management. In addition, ODS shall create a new zone within the Stockton Consolidated Storm Drainage Maintenance Assessment District No. 2005-1, prior to the filing of any parcel map or final map, to provide funding for the operation, maintenance, and replacement costs of the storm water best management practices.</p> <p>WQ-1d: Storm water runoff shall be treated in conformance with the City's Storm Water Quality Control Criteria Plan prior to any discharge into the Westlake Villages.</p> <p>WQ-1e: Prior to filing any parcel map or final map, Crystal Bay shall demonstrate to the</p>	

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		<p>satisfaction of the Municipal Utilities Department that discharge of storm drainage into the Westlake Villages storm drain system will not adversely impact the storm water quality or storm water detention and/or discharge characteristics of the Westlake Villages storm drainage system.</p> <p>WQ-1f: Prior to filing any parcel map or final map, Crystal Bay and Westlake Villages shall enter a City approved agreement permitting Crystal Bay to discharge treated storm water into Westlake Villages lake and water quality treatment system. The agreement shall stipulate privileges, responsibilities, compensation, and remedies.</p> <p>WQ-1g: The lake edge treatment improvements adjacent to the Neighborhood Park shall be subject to review and approval by the City Parks and Recreation Department.</p>	
4.4 Biological Resources			
<p>BR-1: Implementation of the project could affect several special status species that could occur on the project site.</p>	<p>PS</p>	<p>BR-1: Impacts to habitat for special status plant and animal species covered under the SJMSCP require payment of mitigation fees. The project shall implement the SJMSCP conservation strategy, which includes one or a combination of two or more of the following options to provide compensation pursuant to the SJMSCP.</p> <p>a) Pay the appropriate fee as indicated in the SJMSCP; or b) Dedicate, as conservation easements or fee</p>	<p>LTS</p>

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		<p>title, or in-lieu dedications; or c) Purchase approved mitigation bank credits; or d) Purpose an alternative mitigation plan, consistent with the goals of the SJMSCP and equivalent in biological value to options A, B, and C above, subject to approval by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC.</p> <p>Once the applicant selects from these options, additional interaction with SJCOG will be required. This includes a biologist on-call with SJCOG conducting a survey of the project site to confirm findings from prior biological surveys. The biologist will collect information relating to the project site such as habitat type and potential presence of covered species. This information will be used to formulate Incidental Take Minimization Measures for the project applicant consistent with the SJMSCP. Focused wildlife and plant surveys, including preconstruction surveys, are not conducted by the SJCOG biologist, but are the responsibilities of the project applicant. The preconstruction survey must be conducted prior to the submittal of any building permits within the Master Development Plan project area.</p>	
BR-2: Implementation of the project could impact northern harrier.	PS	BR-2: Direct take of nesting northern harriers would be in violation of the Fish and Game Code and MBTA, and this species is covered under the SJMSCP. The following mitigation measures are consistent with the SJMSCP Incidental Take Minimization Measures for	LTS

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		<p>northern harrier, and the provisions of the MBTA.</p> <p>1. Prior to issuance of a grading permit, the project proponent shall implement the SJMSCP conservation strategy, as described in Mitigation Measure BR-1, to provide compensation pursuant to the SJMSCP.</p> <p>2. If project construction is to begin during the nesting season (March 1 - September 15), all suitable nesting habitat on the project site and within 500 feet of the limits of work shall be surveyed by a qualified biologist prior to initiating construction-related activities. Surveys shall be conducted no more than 14 days prior to the start of work.</p> <p>3. A setback of 500 feet from nesting areas shall be established and maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave the nest. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests which are known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.</p>	
BR-3: Implementation of the project could impact burrowing owls.	PS	BR-3: Direct take of nesting burrowing owls would be in violation of the Fish and Game Code and MBTA, and burrowing owl is a covered species under the SJMSCP. The following mitigation measures are consistent	LTS

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		<p>with the SJMSCP Incidental Take Minimization Measures for burrowing owl and the provisions of the MBTA.</p> <ol style="list-style-type: none"> 1. Prior to issuance of a grading permit, the project proponent shall implement the SJMSCP conservation strategy, as described in Mitigation Measure BR-1, to provide compensation pursuant to the SJMSCP. 2. No more than 30 days prior to any ground disturbing activities, a qualified biologist shall conduct surveys for burrowing owls. If ground disturbing activities are delayed or suspended for more than 30 days after the initial preconstruction surveys, the site shall be resurveyed. All surveys shall be conducted in accordance with CDFG's Staff Report on Burrowing Owls (CDFG 1995). 3. If the preconstruction surveys identify burrowing owls on the site during the non-breeding season (September 1 through January 31), burrowing owls occupying the project site shall be evicted from the project site by passive relocation as described in the CDFG's Staff Report on Burrowing Owls (CDFG 1995). 4. If the preconstruction surveys identify burrowing owls on the site during the breeding season (February 1 through August 31), occupied burrows shall not be disturbed and shall be provided with a 250-foot protective 	

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		buffer. The buffer shall be maintained until the SJMSCP Technical Advisory Committee (TAC), with the concurrence of CDFG representatives on the TAC, or a qualified biologist approved by CDFG, verifies through non-invasive means that either: 1) the birds have not begun egg laying, or 2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. Once the fledglings are capable of independent survival, the burrow(s) can be destroyed.	
BR-4: Implementation of the project could impact loggerhead shrikes.	PS	<p>BR-4: Direct take of nesting loggerhead shrikes would be in violation of the Fish and Game Code and MBTA. Loggerhead shrike is a covered species under the SJMSCP. The following mitigation measures are consistent with the SJMSCP Incidental Take Minimization Measures for loggerhead shrike and the provisions of the MBTA.</p> <p>1. Prior to issuance of a grading permit, the project proponent shall implement the SJMSCP conservation strategy, as described in Mitigation Measure BR-1, to provide compensation pursuant to the SJMSCP.</p> <p>2. If project construction is to begin during the nesting season (March 1 - September 15), all suitable nesting habitat on the project site and within 100 feet of the limits of work shall be surveyed by a qualified biologist prior to initiating construction-related activities. Surveys shall be conducted no more than 14 days prior to</p>	LTS

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		<p>the start of work</p> <p>3. A 100-foot setback from nesting areas shall be established and maintained during the nesting season for the period encompassing nest building, and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests which are known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.</p>	
<p>BR-5: Implementation of the project could impact giant garter snake.</p>	<p>PS</p>	<p>BR-5: The following mitigation measures consistent with those listed in the SJMSCP for giant garter snake shall be adhered to where applicable.</p> <p>1. The project shall implement the SJMSCP conservation strategy, which includes payment of appropriate fees to SJCOG for conversion of undeveloped lands and implementation of the Incidental Take Minimization Measures for giant garter snake, as described below. Documentation of fee payment shall be provided to the USFWS prior to the start of construction.</p> <p>2. Construction shall occur during the active period for the snake, between May 1 and October. Between October 2 and April 30 contact the Service's Sacramento Fish and Wildlife Office to determine if additional measures are necessary to minimize and avoid take.</p> <p>3. Limit vegetation clearing within 200 feet of the banks of potential giant garter snake aquatic</p>	<p>LTS</p>

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		<p>habitat to the minimal area necessary.</p> <p>4. Confine the movement of heavy equipment within 200 feet of the banks of potential giant garter snake aquatic habitat to existing roadways to minimize habitat disturbance.</p> <p>5. Prior to ground disturbance, all on-site construction personnel shall be given instruction regarding the presence of SJMSCP Covered Species and the importance of avoiding impacts to these species and their habitats.</p> <p>6. In areas where wetlands, irrigation ditches, marsh areas or other potential giant garter snake habitats are being retained on the site:</p> <ul style="list-style-type: none"> a. Install temporary fencing at the edge of the construction area and the adjacent wetland, marsh, or ditch; b. Restrict working areas, spoils and equipment storage and other project activities to areas outside of marshes, wetlands and ditches; and c. Maintain water quality and limit construction runoff into wetland areas through the use of hay bales, filter fences, vegetative buffer strips, or other accepted equivalents. <p>7. If on-site wetlands, irrigation ditches, marshes, etc. are being relocated in the vicinity: the newly created aquatic habitat shall be created and filled with water prior to dewatering and destroying the pre-existing aquatic habitat. In addition, non-predatory fish species that exist in the aquatic habitat and which are to be relocated shall be seined and transported to the new aquatic habitat as the old site is dewatered.</p> <p>8. If wetlands, irrigation ditches, marshes, etc.</p>	

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		<p>shall not be relocated in the vicinity, then the aquatic habitat shall be dewatered at least two weeks prior to commencing construction.</p> <p>9. Pre-construction surveys for the giant garter snake (conducted after completion of environmental reviews and prior to ground disturbance) shall occur within 24 hours of ground disturbance.</p> <p>10. Other provisions of the USFWS Standard Avoidance and Minimization Measures during Construction Activities in Giant Garter Snake Habitat shall be implemented (excluding programmatic mitigation ratios which are superseded by the SJMSCP's mitigation ratios).</p> <p>11. Survey of the project area shall be repeated if a lapse in construction activity of two weeks or greater has occurred. If a snake is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the snake shall not be harmed. Report any sightings and any incidental take to the Service immediately by telephone at (916) 414-6600.</p> <p>12. Following project completion, all areas temporarily disturbed during construction shall be restored following the "Guidelines for Restoration and/or Replacement of Giant Garter Snake Habitat" outlined below.</p> <p>a. The disturbed area shall be regraded to its preexisting contour and ripped, if necessary, to decompact the soil.</p> <p>b. The area shall be hydroseeded. Hydroseed mix shall contain at least 20-40 percent native</p>	

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		<p>grass seeds. Some acceptable native grasses include annual fescue (<i>Vulpia</i> spp.), California brome (<i>Bromus carinatus</i>), blue wildrye (<i>Elymus glaucus</i>), and needle grass (<i>Nassella</i> spp.). The seed mix shall also contain 2-10 percent native forb seeds, five percent rose clover (<i>Trifolium hirtum</i>), and five percent alfalfa (<i>Medicago sativa</i>). Approximately 40-68 percent of the mixture may be non-aggressive European annual grasses, such as wild oats (<i>Avena sativa</i>), wheat (<i>Triticum</i> sp.), and barley (<i>Hordeum vulgare</i>). Aggressive non-native grasses shall not be included in the seed mix. These grasses include perennial ryegrass (<i>Lolium perenne</i>), cheatgrass (<i>Bromus tectorum</i>), fescue (<i>Festuca</i> sp.), giant reed (<i>Arundo donax</i>), medusa-head (<i>Taeniatherum caput-medusae</i>), or Pampas grass (<i>Cortaderia selloana</i>). Endophyte-infected grasses shall not be included in the seed mix.</p> <p>In addition to the above measures, the following avoidance and minimization measures shall also be implemented:</p> <p>13. All construction shall be conducted during daylight hours.</p> <p>14. Measures consistent with the current Caltrans' Construction Site Best Management Practices (BMPs) Manual (including the Storm Water Pollution Prevention Plan [SWPPP] and Water Pollution Control Program [WPCP] Manuals [http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf]) shall be implemented to minimize effects to giant garter</p>	

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
BR-6: Implementation of the project could impact wetlands.	PS	snake (e.g., siltation, etc.) during construction. BR-6: The project shall implement the SJMSCP conservation strategy, which includes payment of appropriate fees to SJCOG for conversion of undeveloped lands. Lands acquired and preserved under the conservation strategy will provide equivalent habitat to mitigate the loss of wetlands associated with the drainage ditches. If the wetland areas are regulated by the ACOE and/or RWQCB, additional wetlands mitigation may be required by those agencies for the loss of 0.86 acre of wetlands. This mitigation may be accomplished through purchase of appropriate wetlands mitigation credits from an approved mitigation bank that services the project area. In lieu of purchasing mitigation credits, the project may implement a wetlands mitigation plan that provides equivalent wetlands replacement in accordance with agency requirements.	LTS
4.5 Noise			
NOI-1: The project could create short-term construction related impacts.	PS	NOI-1a: Temporary noise impacts resulting from project construction shall be minimized by restricting hours of operation noise-generating equipment to 7:00 a.m. to 7:00 p.m. Monday through Saturday when such equipment is to be used near noise-sensitive land uses. No construction activities shall occur on Sundays or national holidays. NOI-1b: All construction equipment shall be fitted with factory equipped mufflers, and shall be maintained in good working order, at all times.	LTS

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
<p>NOI-2: Impacts from vehicular traffic could exceed the City's noise standards for sensitive receptors (Significance Criterion NOI-d).</p>	<p>PS</p>	<p>NOI-2a: Residential structures located within 953 feet of the centerline of Eight Mile Road shall be equipped with mechanical ventilation, such as air conditioning, to ensure that windows and doors can remain closed for prolonged periods of time.</p> <p>NOI-2b: A sound barrier with shall be required to protect outdoor active use areas such as backyards, patios, and balconies associated with on-site residential land uses along of Eight Mile Road as follows:</p> <ul style="list-style-type: none"> • Outdoor active use areas within 280 feet of the centerline of Eight Mile Road that don't have intervening structures shall have a wall with a minimum height of eight feet. • Outdoor active use areas within 601 feet of the centerline of Eight Mile Road that don't have intervening structures shall have a wall with a minimum height of six feet. <p>NOI-2c: Building façade upgrades, such as double paned windows, shall be required to meet the City's interior noise standard for the residential structures located within 154 feet of the centerline of Eight Mile Road.</p>	<p>LTS</p>
<p>4.6 Land Use</p>			
<p>LU-1: The project is not expected to be growth inducing nor create inconsistencies with regional land use policies.</p>	<p>LTS</p>	<p>No mitigation required.</p>	<p>LTS</p>
<p>LU-2: Implementation of the proposed project will lead to the conversion of agricultural lands.</p>	<p>PS</p>	<p>LU-1: The applicant, owners, developers, or successors in interest shall comply with the City</p>	<p>SU</p>

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		of Stockton's Agricultural Land mitigation Program. The applicable mitigation fee is \$9,600 per acre of land within the project site designated as Prime Farmland.	
LU-3: Implementation of the proposed project will substantially alter the character of the previous land use.	PS	The proposed project will result in an adverse effect on land use character and intensity when compared with previous designations and land uses.	SU
LU-4: Implementation of the proposed project could potentially result in incompatibility with surrounding land uses.	LTS	No mitigation required.	LTS
LU-5: Elements of the proposed project may not be consistent with the City's General Plan.	LTS	No mitigation required.	LTS
4.7 Traffic and Circulation			
TRAF-1a through f: The project would contribute to unacceptable service levels at the following signalized intersections under Existing plus Approved Projects plus Project conditions. This is considered a significant impact and conflicts with of Streets and Highways Goals 1.8 and 1.9.	PS	<p>TRAF-1a: The project applicant shall construct an additional eastbound through lane (for a total of three). This improvement is consistent with the Eight Mile Road Specific Plan. With implementation of this mitigation measure, the impact would be reduced to a less than significant level, as shown in Table 4.7.O.</p> <p>TRAF-1b: A Project Approval/Environmental Document (PA/ED) is currently being prepared for interchanges on I-5 including the I-5/Eight Mile Road interchange. An improved interchange configuration with the goal of providing acceptable service levels will be identified through the PA/ED process. The project's fair share contribution towards improvements that would result in acceptable service levels at this interchange would reduce the project's impact to a less-than-significant</p>	SU

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		<p>level at this intersection. However as these improvements are not yet identified nor fully funded, this mitigation would remain significant-and-unavoidable.</p> <p>TRAF-1c: The project applicant shall contribute their fair share to construct a second eastbound through lane through the intersection (Note: In the eastbound direction, a right-turn lane is currently provided. For this mitigation, the right-turn lane could be converted to a shared through/right-turn lane), an additional westbound through lane (for a total of 2), and an additional westbound left-turn lane (for a total of 2). These improvements are consistent with the Eight Mile Road Specific Plan, which calls for the eventual provision of eight lanes on Eight Mile Road. With implementation of this mitigation measure, the impact would be reduced to a less than significant level, as shown in Table 4.7.O. Implementation of this measure would also reduce vehicle queue spillback at this intersection.</p> <p>TRAF-1d: The project applicant shall contribute its fair share to construct an additional eastbound through lane (for a total of 2), an additional westbound through lane (for a total of 2), and a second eastbound left-turn lane (for a total of 2). These improvements are consistent with the Eight Mile Road Specific Plan. With implementation of this mitigation measure, the impact would be reduced to a less than</p>	

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		<p>significant level, as shown in Table 4.7.O.</p> <p>TRAF-1e: The project applicant shall contribute its fair share to modify the eastbound approach to provide a left turn lane, a through lane and a right-turn only lane. This improvement is consistent with the Eight Mile Road Specific Plan. With implementation of this mitigation measure, the impact would be reduced to a less than significant level, as shown in Table 4.7.O.</p> <p>TRAF-1f: A Project Approval/Environmental Document (PA/ED) is currently being prepared for interchanges on I-5 including the I-5/Hammer Lane interchange and the adjacent Hammer Lane/Mariners Drive intersection. An improved intersection configuration with the goal of providing acceptable service levels will be identified through the PA/ED process. The project's fair share contribution towards improvements that would result in acceptable service levels at this interchange would reduce the project's impact to a less-than-significant level at this intersection. However as these improvements are not yet identified nor fully funded, this mitigation would remain significant-and-unavoidable.</p>	
<p>TRAF-2a: The proposed project would contribute to unacceptable service levels at the following unsignalized intersection. This is considered a significant impact under Streets and Highways Goals 1.8 and 1.9.</p>	<p>PS</p>	<p>TRAF-2a: The project applicant shall contribute their fair share to the signalization of this intersection. This improvement is consistent with the Eight Mile Road Specific Plan. With implementation of this mitigation measure, the impact would be reduced to a less than</p>	<p>LTS</p>

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
<p>TRAF-3: The proposed project would worsen unacceptable roadway operations on Eight Mile Road between I-5 and Trinity Parkway. This is considered a significant impact based on Streets and Highways Goal 1.3 and 1.9.</p>	<p>PS</p>	<p>significant level, as shown in Table 4.7.O. TRAF-3: Mitigation of this impact would require constructing ten lanes on Eight Mile Road between I-5 and Trinity Parkway or providing an alternative route to re-distribute traffic in the area. Future improvements would provide a ten lane cross section, including turn lanes, on this portion of Eight Mile Road. A fair share contribution to this improvement would reduce the impact to a less-than-significant level.</p>	<p>LTS</p>
<p>TRAF-4: The proposed project would cause the operation of two freeway segments to operate at unacceptable service level. This is considered a significant impact under Streets and Highways Goal 1.8 and 1.9.</p>	<p>PS</p>	<p>TRAF-4: Widening of I 5 to provide four mixed flow travel lanes per direction would reduce this impact to a less than significant level, as shown in Table 4.7.P. The widening of I 5 from the Monte Diablo undercrossing to Eight Mile Road is included in the San Joaquin Council of Governments 2025 Regional Transportation Plan as a Tier 1 project sponsored by Caltrans. However, the Plan notes that full project funding has not yet been identified. Therefore, because the improvement is not fully funded, its implementation cannot be assured and this impact would remain significant-and-unavoidable.</p>	<p>SU</p>
<p>TRAF-5a, b, c, d, and e: The proposed project would result in unacceptable service levels or increase the delay by greater than 5 seconds at already deficient operations at five signalized intersections. This is a significant impact under Streets and Highways Goal 1.9.</p>	<p>PS</p>	<p>TRAF-5a: The project applicant shall contribute its fair share to re-stripe the northbound approach to provide a share left-turn/right-turn lane and an exclusive right-turn lane, in addition to signal modifications. With implementation of this mitigation measure, the impact would be reduced to a less-than-significant level, as shown in Table 4.7.U.</p>	<p>SU</p>

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		<p>TRAF-5b: Implement Mitigation Measure TRAF-1c. However as these improvements are not yet identified nor fully funded, this impact would remain significant-and-unavoidable.</p> <p>TRAF-5c: The project applicant shall provide for an exclusive southbound right-turn lane. With implementation of this improvement, the project impact would be reduced to a less-than-significant level, as shown in Table 4.7.U.</p> <p>TRAF-5d: The project applicant shall contribute its fair share towards providing an exclusive right turn lane on the eastbound approach. With implementation of this improvement, the project impact would be reduced to a less-than-significant level, as shown in Table 4.7.U.</p> <p>TRAF-5e: A Project Application/ Environmental Document (PA/ED) is currently being prepared for interchanges on I-5 including the I-5/Hammer Lane interchange. An improved intersection configuration with the goal of providing acceptable service levels will be identified through the PA/ED process. The project's fair share contribution towards improvements that would result in acceptable service levels at this interchange would reduce the project's impact to a less-than-significant level at this intersection. However as these improvements are not yet identified nor fully funded, this mitigation would remain significant-and-unavoidable.</p>	

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
<p>TRAF-6: The proposed project would degrade operations on four freeway segments. This is considered a significant impact under Streets and Highways Goal 1.8 and 1.9.</p>	<p>PS</p>	<p>TRAF-6: Implement Mitigation Measure TRAF-4. Because the improvement is not fully funded, its implementation cannot be assured and this impact would remain significant-and-unavoidable.</p>	<p>SU</p>
<p>TRAF-7a through h: The proposed project would worsen the operation of the following signalized intersections projected to operate at deficient service levels prior to the addition of project traffic or result in unacceptable service levels. This is considered a significant impact under Streets and Highways Goal 1.9.</p>	<p>PS</p>	<p>TRAF-7a: The project applicant shall construct an additional eastbound through lane. Implementation of this improvement would reduce the impact to a less-than-significant level, as shown in Table 4.7.A.1.</p> <p>TRAF-7b: The project applicant shall construct an additional eastbound through lane. Implementation of this improvement would reduce the impact to a less-than-significant level, as shown in Table 4.7.A.1.</p> <p>TRAF-7c: The project applicant shall convert a westbound through lane to a left-turn lane. Implementation of this improvement would reduce the impact to a less-than-significant level, as shown in Table 4.7.A.1.</p> <p>TRAF-7d: A Project Analysis/Environmental Document (PA/ED) is currently being prepared for interchanges on I-5 including the I-5/Eight Mile Road interchange. An improved interchange configuration with the goal of providing acceptable service levels will be identified through the PA/ED process. The project's fair share contribution towards improvements that would result in acceptable service levels at this interchange would reduce</p>	<p>SU</p>

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		<p>the project's impact to a less-than-significant level at this intersection. However as these improvements are not yet identified nor fully funded, this mitigation would remain significant-and-unavoidable.</p> <p>TRAF-7e: Implement Mitigation Measure TRAF-1c. However as these improvements are not yet identified nor fully funded, this mitigation would remain significant-and-unavoidable.</p> <p>TRAF-7f: The analysis assumes build-out of this intersection under future 2035 conditions. There are no additional planned or funded intersection improvements to mitigate the project impact. Measures such as providing second northbound and southbound left-turn lane would reduce the project's impact to a less-than-significant level, although the intersection is projected to continue operating at LOS F during the PM peak hour. Alternatively, the project applicant can contribute to measures that would provide acceptable service levels, such as construction of a continuous flow intersection.</p> <p>TRAF-7g: The project applicant shall either (alternative #1) construct an additional northbound left-turn lane (for a total of 2) or (alternative #2) construct an exclusive "free" southbound right-turn lane. While implementation of either of these mitigation measures would reduce the project's impact to a</p>	

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		<p>less-than-significant level, improvement alternative #2 would still only provide LOS F conditions while improvement alternative #1 would improve LOS F conditions to LOS E conditions during the PM peak hour. The preferred mitigation measure is to implement both improvements since they minimize delay. However, since the two improvements together still result in LOS E conditions, both improvements are not required to mitigate this project's impact on this intersection. Implementation of at least one of these improvement alternatives would reduce the impact to a less-than-significant level, as shown in Table 4.7.A.1.</p> <p>TRAF-7h: The project applicant shall contribute its fair share to provide an additional eastbound through lane (for a total of 3), an additional westbound through lane (for a total of 3), and an additional eastbound left-turn lane (for a total of 2). This mitigation would require acquiring additional right-of-way on Otto Drive between Trinity Parkway and Interstate 5. Implementation of this improvement would reduce the impact to a less-than-significant level, as shown in Table 4.7.A.1.</p>	
<p>TRAF-8: The proposed project would result in unacceptable roadway operations on Eight Mile Road east of I-5 and between I-5 and Trinity Parkway. This is considered a significant impact based on Streets and Highways Goal 1.3. This is the same impact as Impact TRAF-3.</p>	<p>PS</p>	<p>TRAF-8: Mitigation of this impact would require widening Eight Mile Road to 10-lanes from the Oak Grove Park entrance to Trinity Parkway or providing an alternative route to re-distribute traffic in the area. As part of the PA/ED for the Eight Mile Road interchange, a 10 lane cross</p>	<p>LTS</p>

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		section (including turn lanes) may be provided. A fair share contribution to this improvement would reduce the impact to a less-than-significant level.	
TRAF-9: The proposed project would worsen operations on six freeway segments. This is considered a potentially significant impact under Streets and Highways Goal 1.8 and 1.9.ps	LTS	No mitigation required.	LTS
TRAF-10: Based on the proposed roadway cross-sections, the proposed project has the potential to conflict with the City of Stockton's Traffic calming Guidelines. This is a potentially significant impact.	PS	TRAF-10: redesign this roadway to reduce the lane width to an acceptable level, or allow for parking. Implementation of this measure would reduce this impact to a less-than-significant level.	LTS
TRAF-11: The project site plan does not provide sufficient detail to evaluate parking plans for the proposed project. This is considered a significant impact.	PS	TRAF-11: The project applicant shall provide adequate parking as required by City of Stockton Zoning Code prior to the approval of the site plan for each use within the project area. Implementation of this measure would reduce the impact to a less than significant level.	LTS
4.8 Housing/Population/Socioeconomics			
HPS-1: Development of the project site is not expected to conflict with housing/population projections and policies in the General Plan (Significance Criterion HPS-b).	LTS	No mitigation required.	LTS
HPS-2: Development of the project site may conflict with Stockton's affordable housing policies and objectives (Significance Criterion HPS-c).	LTS	No mitigation required.	LTS
Development of the project site may conflict with Stockton's job/housing balance policies and objectives (Significance Criterion HPS-d).	LTS	No mitigation required.	LTS
HPS-4: Development of the project site may negatively affect the existing supply of housing or create a demand	LTS	No mitigation required.	LTS

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
for additional housing (Significance Criterion HPS-e).			
HPS-5: Development of the project site may divide or disrupt the physical arrangement of an established community (Significance Criterion HPS-f).	LTS	No mitigation required.	LTS
HPS-6: Development of the project site may result in substantial population growth (Significance Criterion HPS-a).	PS	No feasible mitigation exists to offset this impact.	SU
4.9 Public Services			
CC-1: The project is not expected to cause inadequate community center facilities, aggravating existing City deficiencies.	LTS	No mitigation required.	LTS
PR-1: Development of the project site is not expected to impact recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.	LTS	No mitigation required.	LTS
PR-2: Development of the project site may require the construction or expansion of recreational facilities that might have and adverse physical effect on the environment.	LTS	No mitigation required.	LTS
PR-3: Development of the project site is not expected to create a shortage of neighborhood park facilities for new residents.	LTS	No mitigation required.	LTS
PR-4: Development of the project site should not conflict with General Plan policies regarding park locations, security and safe access.	LTS	No mitigation required.	LTS
SW-1: Implementation of the Crystal Bay project could generate significant volumes of solid waste, which could adversely impact landfill capacity.	LTS	No mitigation required.	LTS
SW-2: The proposed project may generate solid waste sufficient to overburden the collection agency beyond their ability to service the project.	LTS	No mitigation required.	LTS
PR-5: Fail to create a mechanism through which future	PS	PR-1a: Prior to recordation of any Final Map,	LTS

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
<p>maintenance of the park is guaranteed.</p>		<p>the owner, developer, homeowners association or successor-in-interest shall form a new zone of the Stockton Consolidated Landscape Maintenance District, and approve an assessment providing for the subdivision's proportionate share of the costs to maintain any public parks within the service area for this subdivision or serving this subdivision. Formation of a new zone shall result in the establishment of an assessment that would include, but limited to, costs for: 1) annual maintenance of the park; and 2) administrative costs. The assessment levied shall contain a provision that will allow the maximum assessment to be increased in an amount equal to the greater of: 1) three percent or 2) the percentage increase of the Consumer Price Index for the San Francisco - Oakland - San Jose County Area for All Urban Consumers, as developed by the U.S. Bureau of Labor and Statistics, for a similar period.</p> <p>PR-1b: Prior to the recordation of any Final Map, the proposed project shall include provisions for the establishment of a maintenance entity acceptable to the community Development Director, the Parks and Recreation Director, and the Public Works Director to provide funding for the maintenance of, and if necessary, replacement at the end of the useful life of, the park space. The maintenance entity would also be responsible for improvements including but not limited to, common area</p>	

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		<p>landscaping, landscaping in the right of way, sound walls and/or backup walls, and all "improvements" serving or for the special benefit of the proposed project. If the proposed project provides maintenance through a maintenance assessment district, the proposed project shall include the formation of a new zone of the Stockton Consolidated Landscape Maintenance District provided the type, intensity, and amount of the improvements to be maintained are similar to improvements in the zone to which annexation is proposed. Formation/annexation shall require the approval of an assessment that shall be levied on all properties in the subdivision to ensure that all property owners pay their proportionate share of the costs of maintaining, in perpetuity, the improvements serving or for the special benefit of the proposed project.</p> <p>PR-1c: The Owners, Developers and/or Successors-in-Interest (ODS) shall reserve for public use and construct the planned neighborhood parks, mini parks, greenbelt and linear park corridors and storm drain treatment basins located within the project site. Park improvements shall be subject to the approval of the City Parks Facility Planner/Landscape Architect.</p> <p>PR-1d: The ODS shall contribute Public Facility Fees, land or a combination of both in fulfillment of adopted parkland Public Facility Fee</p>	

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		<p>requirement</p> <p>PR-1e: All walls shall be located on private property and a separate maintenance easement shall be recorded for such walls. Such easement shall be sufficient to allow for regular maintenance (i.e. graffiti removal) and shall include with width of the support footing as it extends from both sides of the wall.</p> <p>PR-1f: The ODS shall construct a pedestrian/bikeway facility along the I Street and Scott Creek Street. The pedestrian/bikeway path along the street system shall comply with applicable ADA requirements, including a wheelchair linkage to all streets within the project site that terminate at the level.</p> <p>PR-1g: Subdivision improvement plans shall include utility stub-outs to public park sites, subject to approval of the Parks and Recreation Department.</p>	
<p>FP-1: Project implementation will increase the demand for fire protection services which could affect the level of service protection and response times.</p>	<p>PS</p>	<p>FP-1a: Prior to issuance of building permits, the project applicant shall pay development impacts fees (as applicable) to reduce the burden on fire protection services. Evidence indicating payment of fees shall be provided to the Director of Community Development Department.</p> <p>FP-1b: The applicant will consult with the City's Fire Department regarding adequacy of project plans relating to the safety of structure, safety devices, and emergency vehicle access.</p>	<p>LTS</p>

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		<p>FP-1c: The ODS shall install fire hydrants and water distribution facilities which will provide fire flows which are adequate to support the City's existing Class 1 ISO rating and which conform to adopted Building Code Fire Safety Standards</p>	
<p>PP-1: The proposed Crystal Bay project will increase the demand for law enforcement services.</p>	<p>PS</p>	<p>PP-1a: Prior to issuance of building permits, the project applicant shall pay development impacts fees (as applicable) to reduce the burden on police protection services. Evidence indicating payment of fees shall be provided to the Director of Community Development Department.</p> <p>PP-1b: The applicant will consult with the City's Police Department regarding adequacy of project plans relating to the safety and defensible space issues.</p> <p>PP-1c: Contractors are responsible for providing licensed uniformed security guards for after hours and weekends to prevent damage or theft of building materials, equipment, and/or appliances. Removal of doors to home appliances until after installation in new homes shall be considered.</p> <p>PP-1d: Construction site perimeter fencing is also essential to prevent criminal activity during construction.</p>	<p>LTS</p>
<p>SCH-1: Project implementation will generate additional students and could affect the capacity of existing schools.</p>	<p>PS</p>	<p>SCH-1a: Prior to issuance of building permits, the project applicant shall pay fees (as applicable) to comply with State mandated</p>	<p>LTS</p>

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		<p>impact fees. Evidence indicating payment of fees shall be provided to the Director of Community Development Department.</p> <p>SCH-1b: The ODS shall coordinate with LUSD as required to assure that adequate school facilities will be available concurrently with project-related need for such facilities, consistent with General Plan facilities Goal 2, Policies 7, 8, and 9.</p>	
LIB-1: Implementation of the proposed project will increase the demand for library services.	PS	LIB-1: Prior to issuance of building permits, the project applicant shall pay development impacts fees (as applicable) to reduce the burden on community library services. Evidence indicating payment of fees shall be provided to the Director of Community Development Department.	LTS
VC-1: Locating the project development adjacent to sources of mosquito populations could result in health risks to residents.	PS	VC-1: Should the District's efforts to control mosquito populations within the project area fail to adequately control the potential health risk to the project population, the Crystal Bay Owner's Association or similar organization shall provide additional resources or financial support to protect project residents from vector-related health risks.	LTS
4.10 Public Water Supply Assessment			
WSA-1: Implementation of the proposed project will increase the demand for water supplies. The City may not be able to guarantee a supply of water beyond on a first-come, first-serve basis.	LTS	No mitigation required.	LTS
WSA-2: Project implementation could require extensive modifications to the existing water system to meet proposed project demand.	PS	WSA-1a: Prior to issuance of building permits, the applicant shall pay all applicable connection fees and/or capital improvement fees required by City ordinance to fund the necessary	LTS

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		<p>improvements to the domestic water supply. The Department of Community Development will collect fees in conjunction with building permit issuance. The MUD will oversee water system analysis. The Departments of Planning, Building, and MUD shall verify that conditions are attached to Tentative Maps and that necessary dedications are made or secured prior to approval of Final Map. All conditions set forth in the Annexation MOU will be met by the applicant.</p> <p>WSA-1b: Prior to issuance of building permits, the applicant shall provide evidence of compliance with plumbing, metering, and other water conservation measures in effect, including the 16 BMPs included in the City's Urban Water Management Plan, 1995 Update. The Department of Community Development would collect fees in conjunction with building permit issuance. The MUD will oversee water system analysis. The Departments of Planning, Building, and MUD shall verify that conditions are attached to Tentative Maps and that necessary dedications are made or secured prior to approval of Final Map.</p> <p>WSA-1c: Prior to approval of improvement plans for each development unit, the applicant will perform a water system analysis of the annexation project areas utilizing methodology approved by the Municipal Utilities Department. The Department of Community Development</p>	

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		<p>would collect fees in conjunction with building permit issuance. The MUD will oversee water system analysis. The Departments of Planning, Building, and MUD shall verify that conditions are attached to Tentative Maps and that necessary dedications are made or secured prior to approval of Final Map.</p> <p>WSA-1d: Prior to approval of the Final Map, the applicant shall design and construct all on site and off site water facilities to comply with the revised City Master Water Plan and the water system analysis. The Department of Community Development would collect fees in conjunction with building permit issuance. The MUD will oversee water system analysis. The Departments of Planning, Building, and MUD shall verify that conditions are attached to Tentative Maps and that necessary dedications are made or secured prior to approval of Final Map.</p> <p>WSA-1e: An Integrated Water Management Plan shall be developed, and provided to the Municipal Utilities Department prior to the submission of utility master plans.</p>	
4.11 Utilities and Service Systems			
COM-1: The project may result in the increase in telephone and cable service demand which may interfere with the ability of utility providers to serve the existing customers.	LTS	No mitigation required.	LTS
NPW-1: The project will utilize a non-potable water source to accommodate the project demand for non-potable water needs.	PS	NPW-1: The owners, developers and/or successors-in-interest shall establish a maintenance entity, acceptable to the City of	LTS

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		Stockton to provide funding for the operation, maintenance and replacement costs of the non-potable water distribution system.	
WW-1: Existing and proposed wastewater conveyance facilities are expected to have adequate capacity to meet proposed project demand.	PS	<p>WW-1a: Prior to issuance of building permits, the owners, developers, and/or successors in interest shall pay the applicable sewer connection fees required for improvements to the City's Regional Wastewater Collection Facilities. The Community Development Department will ensure that sewer connection fees are paid in conjunction with building permit issuance.</p> <p>WW-1b: An assessment of the 14-Mile SPS was prepared for the City that indicates the SPS does not have capacity to meet the needs of the proposed project. Therefore, the developer shall contribute a fairshare contribution to upgrade the 14-Mile SPS to ensure that the system can adequately service the proposed project. Accordingly, the City of Stockton will condition the approval of applicable tentative maps, subdivision improvement plans, and building permits. The Department of Community Development will ensure that connection fees are paid in conjunction with building permit issuance.</p>	LTS
WW-2: Sewage demand generated by the proposed project is not expected to exceed the capacity of the wastewater treatment plant.	PS	WW-2: Prior to issuance of building permits, the applicant shall pay the applicable Sewer Connection Fees required for Improvements to the City's Wastewater Collection Systems. The City of Stockton will include the mitigation measures as stated above as a condition of approval for the applicable tentative maps,	LTS

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		subdivision improvement plans, and building permits. The Department of Community Development will ensure that connection fees are paid in conjunction with building permit issuance. The Departments of Community Development and Public Works shall verify that all conditions of approval appear on the actual building plans and that compliance with the conditions is checked in the field during construction and operation, as appropriate.	
4.12 Aesthetics/Light and Glare			
VIS-1: The project may reduce the scenic quality due to high contrast with existing conditions or elimination of unique landscape features.	LTS	No mitigation required.	LTS
VIS-2: The project may introduce physical features which are substantially out of character with existing and planned uses in the surrounding area.	LTS	No mitigation required.	LTS
VIS-3: The project may have a substantial, demonstrative negative aesthetic effect.	LTS	No mitigation required.	LTS
VIS-4: The project may create shade/shadow images that adversely impact existing residential development.	LTS	No mitigation required.	LTS
VIS-5: Implementation of the proposed project could result in potentially significant nighttime light, both during and after construction.	PS	VIS-1a: Mitigation may include prior review and approval of building materials and lighting specifications by the Crystal Bay Review Board and City Community Development Director. Downcast lighting should be used where feasible. To ensure compliance with specification set forth by the Crystal Bay Design Review Board and City Community Development Director, the applicant should maintain control over all development within the project site. This can be done through	LTS

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		<p>compliance with the Master Development Plan and conditions placed on the covenants, conditions, and restrictions established by the applicant for the development.</p> <p>VIS-1b: Prior to site plan review for development, the applicant shall provide evidence to the Design Review Board that non reflective building materials will be used. The City's Community Development Director or Architectural Review Committee shall review and approve building materials and their applications to ensure light and glare effects are minimized.</p>	
<p>VIS-6: Implementation of the proposed project will impact views from Eight Mile Road, Bishop Cut and Westlake Villages.</p>	<p>PS</p>	<p>Implementation of the standards set forth in the Master Development Plan will minimize the effects on visual resources.</p>	<p>LTS</p>
<p>4.13 Cultural Resources</p>			
<p>CR-1: Project site development could potentially effect known and unknown resources with cultural significance.</p>	<p>PS</p>	<p>CR-1a: Project personnel should not collect or move any archaeological material. Fill soils that may be used for construction purposes should not contain archaeological materials.</p> <p>CR-1b: If deposits of prehistoric or historic archaeological materials are encountered during the project activities, all work within 50 feet of the discovery should be redirected and a qualified archaeologist contacted to evaluate the finds and make recommendations. It is recommended that such deposits be avoided by project activities. If such deposits cannot be avoided, they should be evaluated for their significant in accordance with the California</p>	<p>LTS</p>

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		<p>Register. If the resources are not significant, further protection is not necessary. If the resources are significant, they will need to be avoided by adverse effects or such effects must be mitigated. Upon the completion of the archaeological evaluation, a report should be prepared documenting the methods, results, and recommendations. The report should be submitted to the Central California Information Center and appropriate City agencies.</p> <p>Prehistoric materials can include flaked stone tools (e.g., projectile points, knives, choppers) or obsidian, chert, or quartzite toolmaking debris; cultural darkened soil (i.e., midden soil often containing heat affected rock, ash and charcoal, shellfish remains, and cultural materials); and stone milling equipment (e.g., mortars, pestles, handstones). Historical materials might include wood, stone, concrete, or adobe footings, walls and other structural remains; filled wells or privies; and deposits of wood, metal, glass, ceramics, and other refuse.</p> <p>CR-1c: During grading of other invasive site construction activities, the contractor shall comply with Section 7050.5 of the California Health and Safety Code. The code states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie</p>	

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		<p>adjacent remains until the coroner of the County in which the human remains are discovered has determined whether or not the remains are subject to the coroner's authority. If human remains are encountered, work should halt within 50 feet of the find and the County Coroner notified immediately. The contractor shall also immediately notify the Community Development Director and the Secretary of the Cultural Heritage Board. At the same time, an archaeologist should be contacted to evaluate the situation. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission with 24 hours of this identification. The Native American Heritage Commission will identify a Native American Most Likely Descendent to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.</p> <p>CR-1d: If paleontological resources are identified within the project area, all work within 50 feet of the discovery should be redirected and a qualified paleontologist should be contacted to evaluate the finds and make recommendations. If the paleontological resources are found to be significant, they should be avoided by project activities. If avoidance is not feasible, adverse effects to such resources should be mitigated. Upon completion of the paleontological evaluation, a report should be prepared documenting the methods, results, and</p>	

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		recommendations. The report should be submitted to the UCMP and appropriate City agencies.	
4.14 Hazardous Materials/Wastes			
HAZ-1: Due to the existing conditions of the site, the environment and construction workers could be exposed to hazardous wastes and materials.	PS	HAZ-1: A Spill Prevention and Containment Plan (SPCP) will be prepared prior to the commencement of any construction activities. The SPCP will identify any and all hazardous materials that will be used or stored on site, and will also identify any hazardous wastes that might be generated by the proposed project. The SPCP will detail proper measures to handle and/or transport hazardous materials. The plan will also present procedures to contain or initiate cleanup of any spills. The phone number of the appropriate government agency will be contained on the plan in the event of any release of hazardous substances.	LTS
4.15 Energy			
EN-1: The project will not result in increased demand for gas or electricity requiring new production facilities and infrastructure to supply the development Electricity and Natural Gas Services.	LTS	No mitigation required.	LTS
EN-2: The proposed project will use large amounts of energy.	PS	<p>EN-1a: As feasible, the applicant should install energy reducing fixtures and implement energy reducing measures to decrease the amount of energy used.</p> <p>EN-1b: The project shall incorporate principles of passive solar design. Passive solar design is the technology of heating, cooling, and lighting a building naturally with sunlight rather than with</p>	LTS

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		<p>mechanical systems because the building itself is the system. Basic design principles are large south-facing windows with proper overhangs, as well as tile, brick, or other thermal mass material used in flooring or walls to store the sun's heat during the day and release it back into the building at night or when the temperature drops. Passive solar also takes advantage of energy efficient materials, improved insulation, airtight construction, natural landscaping, and proper building orientation to take advantage of the sun, shade, and wind.</p> <p>EN-1c: The project shall install reflective, EnergyStar™ cool roofs. Cool roofs decrease roofing maintenance and replacement costs, improve building comfort, reduce impact on surrounding air temperatures, reduce peak electricity demand, and reduce waste stream of roofing debris.</p> <p>EN-1d: All residences shall be constructed to meet the requirements of the EnergyStar™ program for new homes. Such residences improve energy efficiency by a minimum of 15 percent as compared to residences that simply meet the Title 24 requirements. The additional efficiency is typically accomplished through the use of tight construction, energy-saving windows, improved insulation, and super-efficient heating/cooling systems.</p> <p>EN-1e: Although there is not a formal</p>	

Environmental Impacts	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance with Mitigation
		<p>EnergyStar™ program for non-residential buildings, all buildings to be constructed by the project could be constructed to meet the same standards as those that apply to the residential program.</p> <p>EN-1f: The project shall incorporate the use of the following in all development, to the extent feasible:</p> <ul style="list-style-type: none"> - Installation of motion detectors or dimmers to control lighting; - Installation of efficient security, street, and parking lot lighting (e.g., high pressure low sodium fixtures); - Installation of reflective window film or awning on south and west facing windows; - Installation of ceiling and wall insulation 	

CHAPTER 2.0 INTRODUCTION

2.1 PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT

The purpose of this Draft EIR (DEIR) is to address the potential environmental impacts associated with implementation of the proposed Crystal Bay project. Encompassing approximately 173 acres, the Master Development Plan Area proposes to prepare the project site for the construction of higher density cluster condominiums and apartments; medium density for compact small lots and small lot courtyard detached single-family residences, and lower density single family conventional homes on lands that are currently used for agricultural purposes. A General Plan Amendment will be required for the higher density cluster condominium and apartment components, and a “Park and Recreation” designation. With the proposed Annexation, the applicant has requested rezoning for the site to R-L (Residential-Low Density) District for the compact small lots and small courtyard detached single family residences, R-M (Residential-Medium Density) District for the cluster condominiums, and R-H (Residential-High Density) for the apartment uses and a PF (Public Facilities) district for a proposed neighborhood park. The applicant has prepared a Master Development Plan (MDP) to promote quality planning and innovative site planning consistent with the goals and policies of the City’s General Plan. A Development Agreement, Tentative Map and Eight Mile Road Precise Road amendment will also be required as part of the proposed project.

This EIR has been prepared in accordance with the California Environmental Quality Act (CEQA) of 1970, as amended (Public Resources Code, Section 21000 et seq.); the State Guidelines for Implementation of the California Environmental Quality Act, 1970, as amended (Title 14, California Code of Regulations, Section 15000 et seq.); and Environmental Review Guidelines adopted for the City of Stockton.

The City has the responsibility, as Lead Agency, to conduct an evaluation of potential project impacts prior to making a decision to approve or deny the requested actions. The data and descriptions contained herein are intended to provide the decision makers with the information necessary to determine the effects of the project. Mitigation measures have been identified throughout the document, with the goal of reducing potentially significant impacts to levels below significance.

2.2 ENVIRONMENTAL PROCEDURES

Notice of Preparation

A NOP/Initial Study (City File #EIR 6-05, dated February, 2007) for the DEIR was distributed to the State Clearinghouse, responsible agencies, and other interested parties. By distributing the NOP, the City sought to obtain public and agency input and determine the full range and scope of environmental issues related to the project so that they could be adequately addressed in the DEIR. The NOP and Initial Study are contained in Appendix A. The NOP comment period ended April 23, 2007. Responses to comments generated by circulating the NOP/Initial Study have been addressed, as appropriate, throughout the document, and are summarized in Appendix A.

Environmental Procedures

Prior to acting on the applicant's request, the Stockton Planning Commission and City Council must certify the EIR for completeness and adequacy. Subsequent actions subject to the discretionary authority of the City of Stockton may also be covered, more or less, by the evaluations and findings contained in this document including, but not necessarily limited to, grading permits, construction permits, encroachment permits, building permits, and certificates of occupancy. Other agencies, including Responsible Agencies, may also utilize this environmental document for subsequent approvals within their specific jurisdiction and authority.

Type of Environmental Review

This document is being prepared as a DEIR in accordance with Section 15161 of the State CEQA Guidelines. This type of EIR focuses primarily on the environmental impacts from a specific development project. The EIR shall examine all phases of the project including planning, construction, and operation.

This DEIR presents a comprehensive analysis of the potential environmental impacts created by the proposal of The Spanos Family Partnership to develop a master planned community with residential, recreational, and open space uses. The analysis is based upon a review and evaluation of the General Plan Amendment, pre-zoning, Master Development Plan, Development Agreement, Tentative Map, Eight Mile Road Precise Road Plan amendment and annexation processes into the City of Stockton jurisdiction, consultation with the applicant and interested agencies and individuals, review of responses to the Notice of Preparation for the project, consideration of appropriate technical information, and field surveys of the project site and surrounding area.

The project proposes to bring the land under the jurisdiction of the City of Stockton. Crystal Bay is currently located within the unincorporated area of San Joaquin County and within the City of Stockton Sphere of Influence as established by the San Joaquin County Local Agency Formation Commission (LAFCO). The current City of Stockton's General Plan of the project site is Low-Medium Density Residential. The applicant has requested rezoning of the site to R-L, R-M, R-H and PF.

The current General Plan would be amended (17.6 acres) to designate a portion of the site as High Density District Residential and an eight-acre site for "Park and Recreation" designation. A Master Development Plan has been prepared and describes the project concepts and character. With this strategy, the designations provide the flexibility to focus on a primary development concept, as well as various other uses and intensities. The determination of project impacts is based upon the project components outlined in the Master Development Plan.

As noted in the Development Agreement, the owner shall have the right, and the obligation to develop Crystal Bay in accordance with the Master Development Plan subject to the standards specified in the Development Agreement and the Master Development Plan. Except as noted in the Development Agreement, Master Development Plan and applicable existing City Laws will control the overall design, development, and construction of Crystal Bay, and all improvements and appurtenances in connection therewith, including, without limitation, the permitted uses within Crystal Bay, the density and intensity of use and all mitigation measures required in order to minimize or eliminate adverse environmental impacts and other adverse impacts of Crystal Bay.

As a result of the relationship of the proposed Crystal Bay project with the adjacent Westlake Villages and Spanos Park West projects, the environmental documents prepared for those projects serve as major reference for this DEIR and are, therefore, incorporated by reference. These documents are available for review at the City of Stockton, Department of Community Development, Planning Division, 345 N. El Dorado Street, Stockton, California 95202, phone (209) 937-8266. The document is referred to as follows:

LSA Associates, Inc. Final Westlake Villages Environmental Impact Report (EIR 1-04). June 25, 2004. SCH #2004052105. Certified by the City of Stockton on September 17, 2004.

LSA Associates, Inc. Final Supplemental Environmental Impact Report Spanos Park West (SEIR 3-87/IS 13-00) (December 6, 2001). SCH #87032415. Certified by the City of Stockton on December 14, 2001.

2.3 ISSUES OF CONCERN

Based on input received by the City of Stockton in response to the NOP/Initial Study, the City has determined a number of issues of concern. The following is a list of project issues from commenter's:

- Loss of agricultural lands
- Mosquito-related health risks
- Land use compatibility issues
- Traffic
- Air quality
- Potable water supplies
- Utilities and service systems

2.4 ORGANIZATION OF DOCUMENT

Chapter 1.0 provides a Summary of Impacts, Mitigation Measures, and Level of Significance. From the Summary, the reader can become familiar with the project issues, the environmental topics that are potentially significant, the measures proposed to reduce impacts, and the level of significance after mitigation measures are considered.

Chapter 2.0 describes the overall environmental review process, previous documentation, and potential areas of controversy.

Chapter 3.0 presents detailed information on the proposed project and development concepts. This chapter describes the number and intensity of uses, project objectives, development intensity options, development standards, open space characteristics, supporting uses, operational characteristics and phasing sequences. This chapter also describes the regional setting and project history, project objectives and discretionary actions being considered, as well as other governmental approvals needed prior to construction.

Chapter 4.0 includes the comprehensive environmental analysis based on project implementation. Under the Existing Setting, those elements associated with the current site and potential constraints to the project are identified, including local sensitivities and controversies. These include all the detailed environmental issue areas comprising the DEIR document. At the beginning of each impact section, Significance Criteria are used to evaluate the project impacts to assess the level of significance prior to mitigation.

Mitigation for each potentially significant impact is presented and conclusions reached prior to discussing other project impacts. Each mitigation measure corresponds to a specific project impact. A final statement concludes the impact significance under Level of Significance after Mitigation.

In addition to these topics, the DEIR includes several sections required by CEQA, including cumulative impacts, growth inducing impacts, irreversible and irretrievable commitment of resources, unavoidable adverse impacts, and project alternatives.

2.5 CONTACT PERSONS

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CHAPTER 3.0 PROJECT DESCRIPTION

3.1 OVERVIEW

The project proposes a General Plan Amendment, Rezoning, Master Development Plan, Tentative Map, Eight Mile Road Precise Road Plan amendment, Development Agreement, and annexation of three parcels comprising the 173 + acre project site. The proposed project consists of residential uses at a variety of densities. The development plan consists of residential uses that are generally defined by major circulation roads, and a project created lake. The community is anticipated to include approximately 1,363 total units, consisting of four residential product types: traditional single family units; small lot, cluster type development or courtyard units; and high-density residential units. The lake will provide for storm water detention, treatment and a source of non-potable water for landscape irrigation. Runoff will flow from the Crystal Bay Lake into the lake planned at Westlake Villages prior to discharging into Disappointment Slough. A total of 13.1 acres of parkland will be dedicated as part of this proposed project.

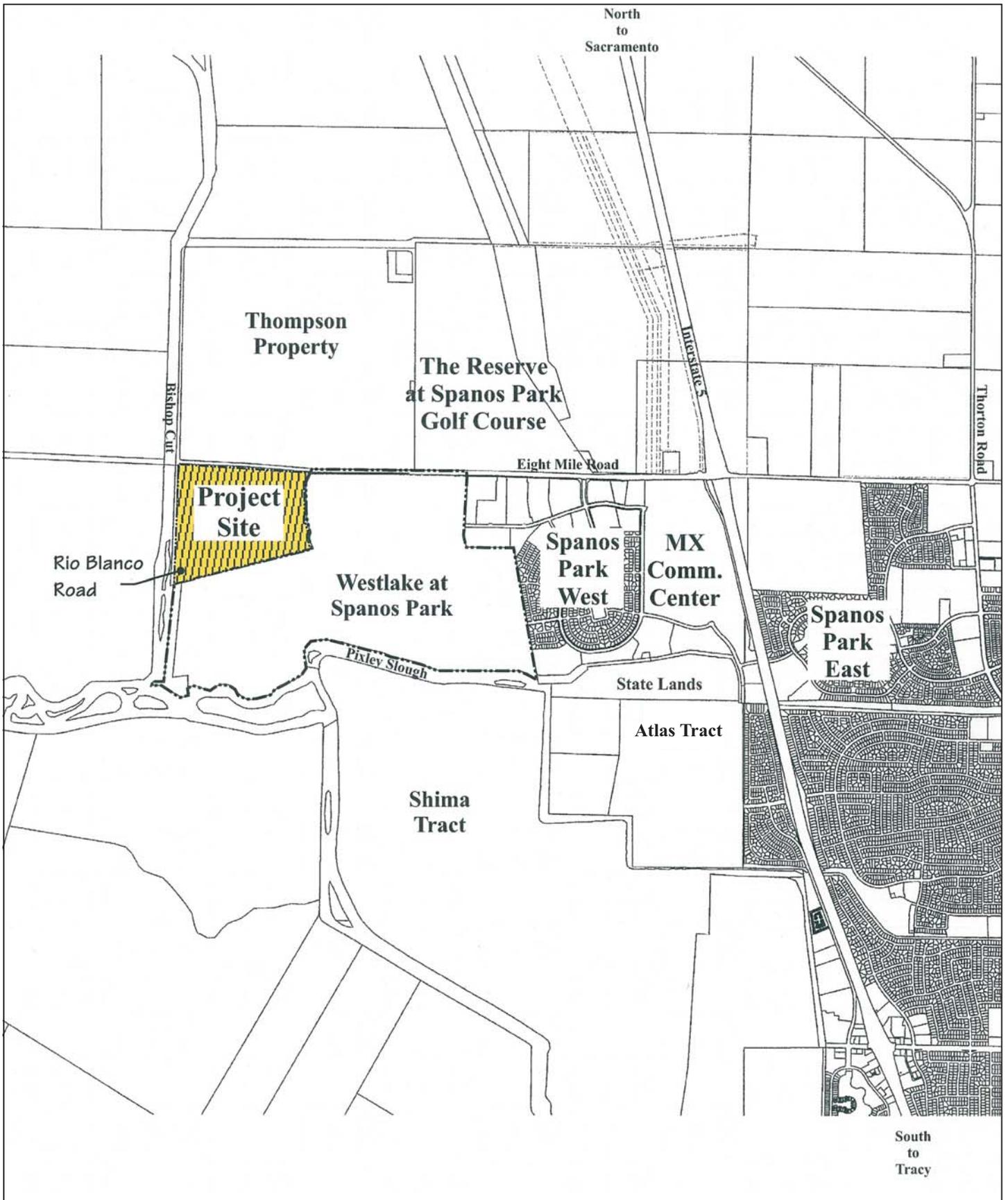
It should be noted that the project will be constructed in phases; the multi-family parcel will develop in a later phase. In the interim, the parcel will be used for storage of runoff waters diverted from the existing drainage ditch (between Westlake Village and Crystal Bay). Earth excavated from the detention basin will be stock-piled adjacent to the basin creating a 10-foot high mound. Ultimately, a new drainage system will be permanently constructed to discharge irrigation waters into Bishop Cut and the multi-family residential product will be developed. Additional earth fill material may be imported into the temporary detention basin to create a developable pad.

Local and Regional Setting

The proposed Crystal Bay project is located to the north and west of the approved Westlake Villages development, and south of Eight Mile Road. Interstate 5 (I-5) is located approximately 1.5 miles to the east and provide regional access via the Eight Mile Road interchange. The western project boundary is Bishop Cut and Rio Blanco Road (Figure 3.1.1). Local roadways from Crystal Bay will connect to Westlake Villages.

Existing land uses on the development parcel reflect agricultural uses. Adjacent land uses include: the approved Westlake Villages to the east and south, agricultural uses to the west (beyond Bishop Cut), and agricultural uses to the north (beyond Eight Mile Road). The project site is located within the City's Sphere of Influence, in an area that has recently experienced growth and will likely continue to receive growth pressure. Several small-to large-scale development projects in the vicinity are in various stages of development.

The topography of the project site is generally described as level or flat. Very little topographical differences occur over the region. Minor topographical changes are noted from levee structures and drainage improvements. The site gradually slopes towards the west towards Bishop Cut. Drainage



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FIGURE 3.1.1



SOURCE: Kimley-Horn, 2007

Crystal Bay
Project Location and Surrounding Features

canals transect the project site and collect runoff to discharge into Bishop Cut through an upgraded pump station.

3.2 APPROVED DEVELOPMENT PROJECTS

Planned Development

Several major developments have been approved in the vicinity of the project, and more are being proposed. Table 3.2.A Planned and Approved Development Projects presents the development activity within the project vicinity. As shown, overall, approximately 71 percent of approved development potential for identified projects has been completed.

The City of Stockton periodically monitors the projected buildout of available land within the City boundary. According to the 2003 Housing Element, the majority of the vacant land zoned for residential development lies within the RL district (Residential-Low Density) and accounts for 1,525.9 acres while the acreage available for higher density development is 286 acres, for a total of 1,811 acres. Using the average density for each land use designation, the land has the potential to produce about 7,497 single family units and 4,448 multi-family units respectively.

The Crystal Bay development provides a mixture of densities for a total of approximately 146 units of RL (Low Density), 825 units of RM (Medium Density) and 392 units of RH (High Density) and consists of approximately 173± acres. This development would account for about 10 percent of the residential land available for development. The average densities in the 2003 Housing Element for RL, RM, and RH are 5.7 units, 13.8 units and 23-34.4 respectively. Crystal Bay's densities fall slightly less overall at approximately 7.6 units for RL, 14.4 units for R-M and 22.3 units for RH, which is below the average unit potential for the vacant land. However, Crystal Bay provides slightly more units per acre for the RL Low Density housing.

Table 3.2.A: Approved and Planned Development Projects

NAME	TM #	TM ACREAGE	MAP UNITS	BDG PERMITS ISSUED	LOTS REMAINING	PERCENTAGE COMPLETE
Riverwalk	13-05	10	113	0	113	0%
Moss Garden	24-05	34	356	0	356	0%
Windstone	33-04	8	66	0	66	0%
Little John Creek	13-90	151	853	0	853	0%
North Stockton Projects (Elkhorn Country Club, Waterford Estates West and East, Beck Ranch, Beck Estates, Fairway Greens, Windmill Park, Meadowlands, Destinations,	1-98, 2- 98, 3-98, 4-98, 14- 98, 5-98, 15-03, 6- 03, 24-04	393	2,462	1,583	879	64%

NAME	TM #	TM ACREAGE	MAP UNITS	BDG PERMITS ISSUED	LOTS REMAINING	PERCENTAGE COMPLETE
Northbrook						
Seabreeze I & II	5-03, 21-03	50	249	104	145	42%
Montego I & II	9-03, 7-04	82	348	141	207	41%
Mariana Estates	33-03, SU01-03	25	73	0	73	0%
Riverbend & Riverbend West	14-04, 15-04	168	583	282	301	48%
Cornerstone II	25-03	14	66	0	66	0%
Simbad Estates	9-04	5	28	5	23	18%
Silver Springs/Gold Springs	28-03, 10-04	96	305	271	34	89%
Cannery Park	8-04	450	1,100	3	1,097	0%
Westlake Villages (SPW)	18-04	680	2,630	69	2,561	3%
Malisa Manor	25-04	4	16	5	11	31%
Charlotte's Oaks	6-05	15	105	14	91	13%
The Enclave at Spanos Park East	9-05	6	47	0	47	0%
Dama Estates	37-04	3	17	0	17	0%
Old Oak Estates	23-04	14	62	0	62	0%
Calaveras Estates #3	36-04	13	77	0	77	0%
Tuscany Cove	42-04	4	14	0	14	0%
North Stockton Gateway	N/A	2,231	7,303	0	7,303	0%
North Stockton Village	N/A	771	4,210	0	4,210	0%
Atlas Tract	N/A	359	1,404	0	1,404	0%
Sanctuary	N/A	1,750	7,070	0	7,070	0%
Bear Creek South	N/A	510	2,941	0	2,941	0%
Bear Creek West	N/A	1,159	6,811	0	6,811	0%
Bear Creek East	N/A	330	2,285	0	2,285	0%
Grand Total		9,418	35,813	3,007	40,031	

Source: City of Stockton, 5/07

3.3 PROJECT OBJECTIVES

- Create a well-designed residential community that is integrated with adjoining residential and commercial development and to provide connectivity with the Delta.
- Facilitate the design and development of a community with neighborhoods diverse in population and activity.
- Provide amenities such as parks, trails, and lakes to enhance project livability.
- Build high quality residential units combining the best of modern development practices with architectural styles and detailing consistent with traditional neighborhoods.
- Create a safe, secure environment with walkable neighborhoods that meet the needs of a diverse market sector.
- Design streets and a circulation system resulting in neighborhoods that balance the scale between pedestrians and vehicles, and connectivity with the Delta.
- Promote open space within neighborhoods to provide a convenient and safe destination for all children to play and families to gather.
- Develop a lake that provides a focal point and recreation opportunities that would also be utilized for enhancing the environment by improving water quality and reducing water demand.
- Provide a system of pathways/sidewalks that would be available to the public, providing accessibility, recreation opportunities, connectivity to the Delta, and amenity to be enjoyed by the entire community.

3.4 SPECIFIC PROJECT DESCRIPTION/OPERATIONAL CHARACTERISTICS

Proposed Project

The proposed Crystal Bay project is a residential development that includes traditional detached single-family, compact small lots courtyard detached single-family and attached high density multi-family (apartment) residential, as well as providing recreational uses within the parks, lake, greenbelt and open space areas designed to meet the needs of future Stockton residents.

The primary intent and purpose of the Master Development Plan is to create the framework for the development and provide design solutions where the residential uses interface with the proposed recreational and existing commercial uses adjacent to Crystal Bay, while remaining consistent with the policies, general land uses and programs of the City's General Plan.

The proposed Crystal Bay project is predominately residential and provides a range of development options within each of the residential neighborhoods. This EIR is prepared as a companion document

to the Master Development Plan for a residential project with a range of densities allocated for all portions of Crystal Bay.

Figure 3.4.1, Conceptual General Development Plan, indicates the proposed development intensities and the locations of neighborhood amenities.

The proposed Crystal Bay project shares a common boundary with the adjacent Westlake Villages project. Upon full implementation of the proposed Westlake Villages project, a new circulation network will be constructed to serve the proposed project, as well as, the adjacent Westlake Villages development. The internal circulation system consists of a main entrance via Eight Mile Road (Street 1). Street 1 would run south and then west through the project site connecting to Rio Blanco Road. The secondary project entry road is via Scott Creek Drive. Scott Creek Drive extends into the project from the adjacent Westlake development and runs in an east-west direction joining Street 1. Scott Creek Drive will also provide access to the adjacent development parcels, the community park located in the adjacent West Lake Villages development and Eight Mile Road.

Characteristics associated with each project component are presented below.

Residential Land Use. Crystal Bay is a mixed density project including three product types, traditional single family detached homes, compact small lots, courtyard units, and attached high density residential. In all, the project will include approximately 660 detached single family units, 311 courtyard units, and 392 high density residential units. Generally the detached single family units are located on the eastern portion of the site, east of the north/south collector street, and the high density residential units are located on the western portion of the site adjacent to Rio Blanco Road. Both development areas have been designed to function as separate projects and will provide for the requirement of parkland dedication. Public pedestrian access to Delta recreation is provided through pocket parks connected to the linear park on the levee at Rio Blanco Road. All residential units are designed with four-sided architecture with multiple architectural styles. Construction will occur in three phases.



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FIGURE 3.4.1

Table 3.4.A: Land Use Summary

Use	Net Acres	Dwelling Units	Zoning	Use	Density Range	Average Net Density
Neighborhoods D & E (50 x 100 lots)	19.4	146	RL	Residential	0 – 8.7	7.5
Neighborhoods A, B, C, F (50 x 75 & 40 x 65 lots)	39.8	514	RM	Residential Compact Lots	8.8 – 17.4	12.9
Neighborhoods G & H (Courtyard lots)	20.5	311	RM	Courtyard Lots	8.8 – 17.4	15.2
Neighborhood I (Multi-family units)	18.4	392	RH	Multi-Family Units	17.5 – 29.0	21.3
Parks	13	0	PF	Public Parks		
Greenbelt	8.5	0	PF	Linear Park		
Lake	7.2	0	PF	Public Parks		
Landscape Parcels	5.5	0	RL, RM, RH	Landscape Area/Open Space		
Pump Station	0.4	0	PF	Storm Water Pumping Station		
Private Streets	5.9	0	N/A	Courtyard/Multi-Family Streets		
Public Streets	35.2	0	N/A	Public Street system		
Total	173.8	1363				13.9

Onsite Storm Water Management. The project area will contain a 7.2 acre manmade lake, designed to provide storm water conveyance, detention, and water quality treatment from within the plan area. The proposed drainage facilities would make sure that the Crystal Bay Development is provided with 100-year flood protection and satisfies local drainage criteria adopted by both the City of Stockton and San Joaquin County. In addition, the existing adjacent northern tributary watershed areas would not have their current levels of flood protection impaired or reduced from the development by reducing potential flood storage areas. Crystal Bay will not be dependent on a future municipal public works drainage infrastructure or backbone drainage facility development, but also does not limit the occurrence of additional development within the municipal watershed.

The on-site runoff will be treated in the Crystal Bay lake prior to discharge to Westlake. The Crystal Bay lake will provide stormwater detention storage for all storm events ranging from the 2-year to the 100-year through surcharge storage above the normal lake operating water surface elevation. For smaller storms up to the 10-year event, the runoff volume will be completely retained within the lake and the larger storms exceeding the 10-year magnitudes will discharge at a reduced flowrate through the terminal outlet pipelines to the Westlake lake.

It should be noted that the project will be constructed in phases; the multi-family parcel will develop in a later phase. In the interim, the parcel will be used for storage of runoff waters diverted from the existing drainage ditch (between Westlake Village and Crystal Bay). These waters will be conveyed via 3 60" inch diameter parallel RCP or HDP pipes. These pipes would be installed along the same alignment as the existing earthen channel parallel to Eight Mile Road and would extend downstream to outlet into the nine acre detention basin. A specialty junction structure with manhole access will be required at the upstream end of the triple pipe system which will allow (1) connection to existing drainage facilities crossing Eight Mile Road at this location, (2) connection to the other drainage pipe systems within Eight Mile Road, and (3) distribution of the flow equally to the three pipeline systems. This proposed replacement pipeline system will not be used to convey any of the urbanized runoff from Crystal Bay, but is only for the agricultural or non-urbanized runoff from the areas north of Eight Mile Road. The proposed pipelines would be installed on a slope identical to the design slope of the existing RD channel at this location. There is the possibility in the future that the pipes could be replaced with an underground double barrel reinforced concrete box in order to accommodate the future urbanized runoff from the northern watershed, but this depends on the location of the future urban terminal stormwater pump station. In order to accommodate this potential, the drainage system crossing under the primary Entry Road should be constructed in its ultimate required condition with the installation of the triple pipes so it would not require reconstruction, particularly with the different project utilities within the entry road. However, if the future urban terminal stormwater pump station is located to the north of Eight Mile Road then this ultimate facility would not be required, but just the drainage system to maintain the interim agricultural drainage system. The proposed underground triple pipe system would be maintained by the Reclamation District 2042 since it would still be conveying only agricultural and non-urban drainage. Figures 3.4.2 through 3.4.4 illustrate the temporary improvement fixtures.

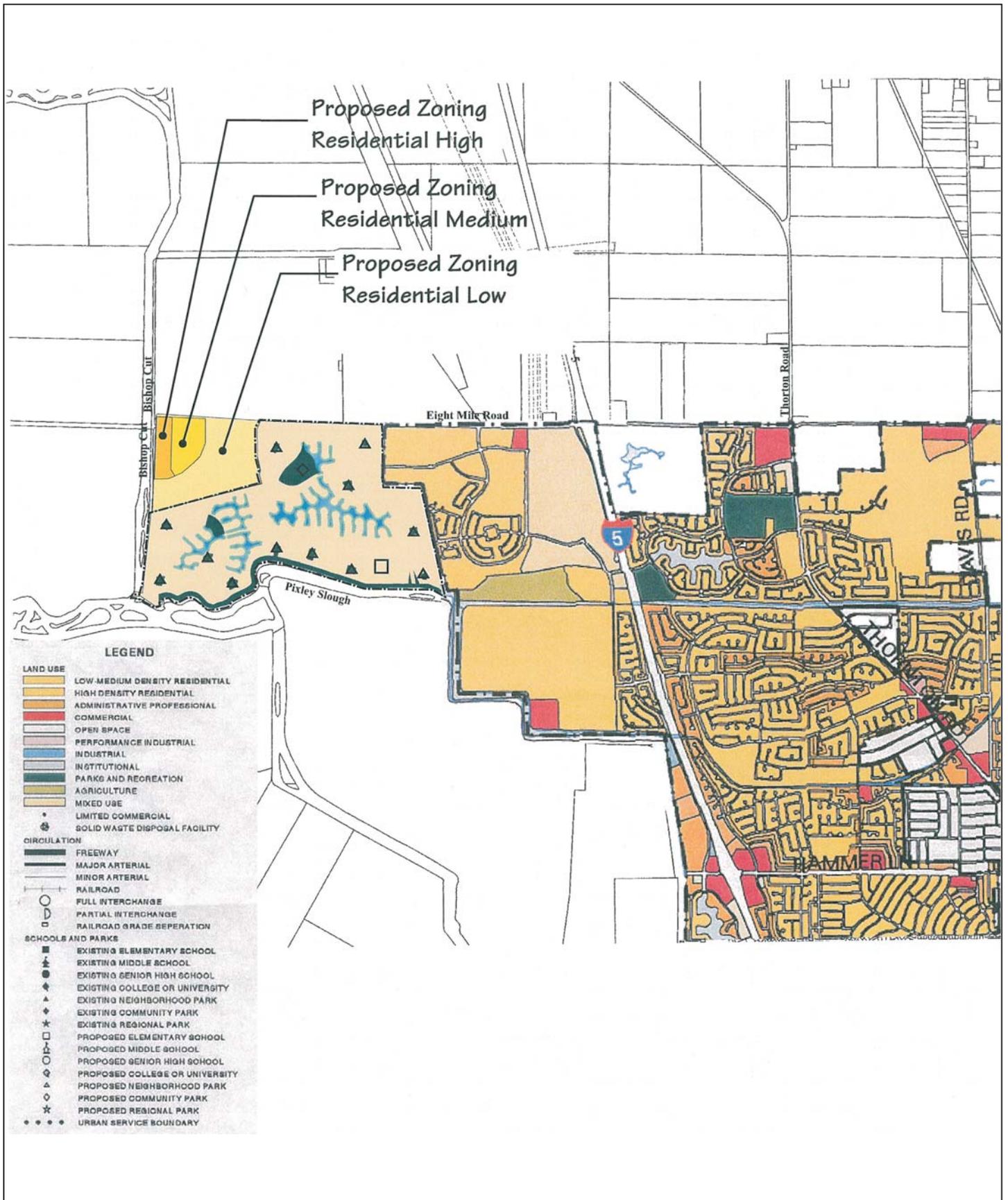


FIGURE 3.4.2

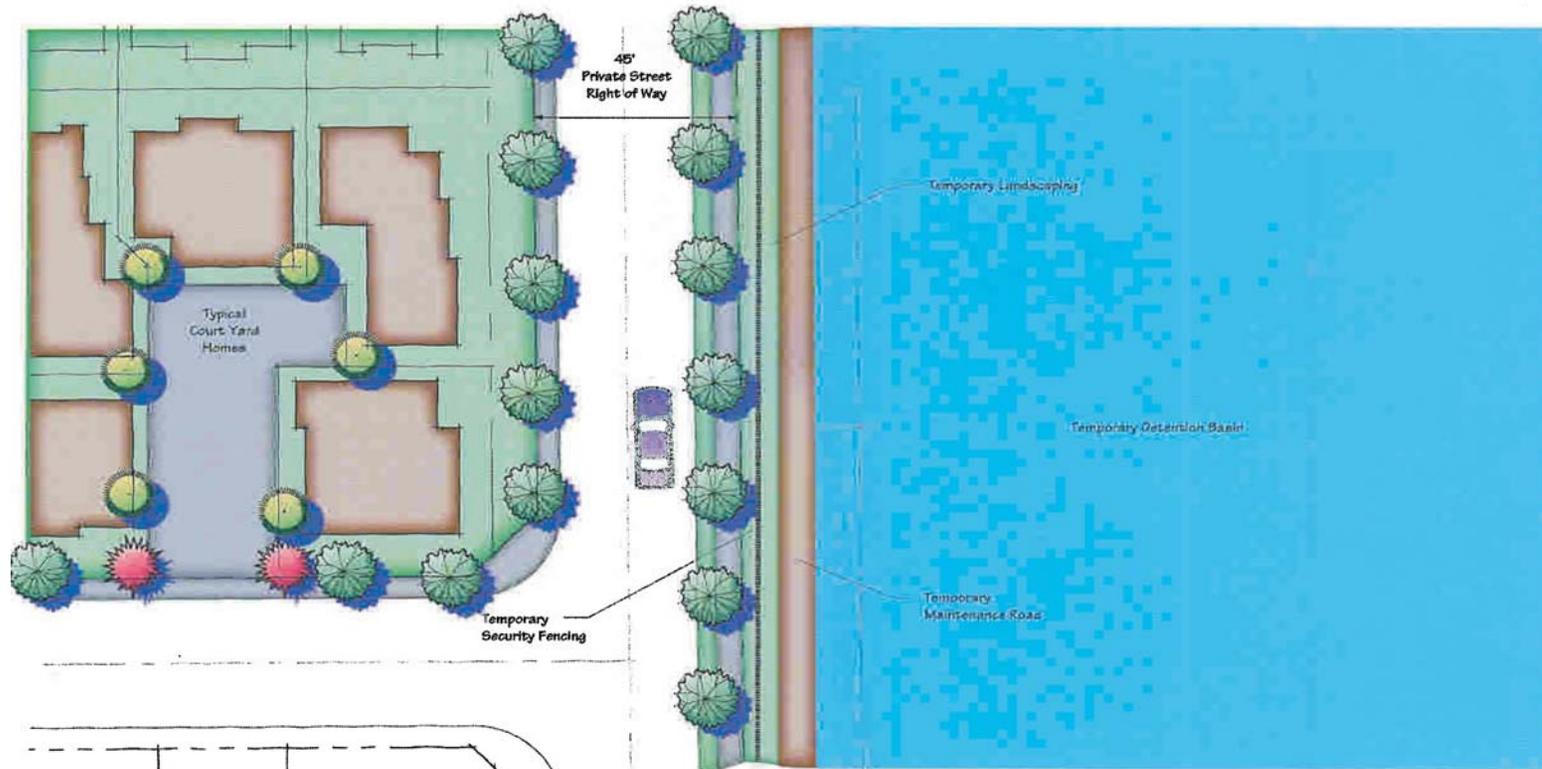
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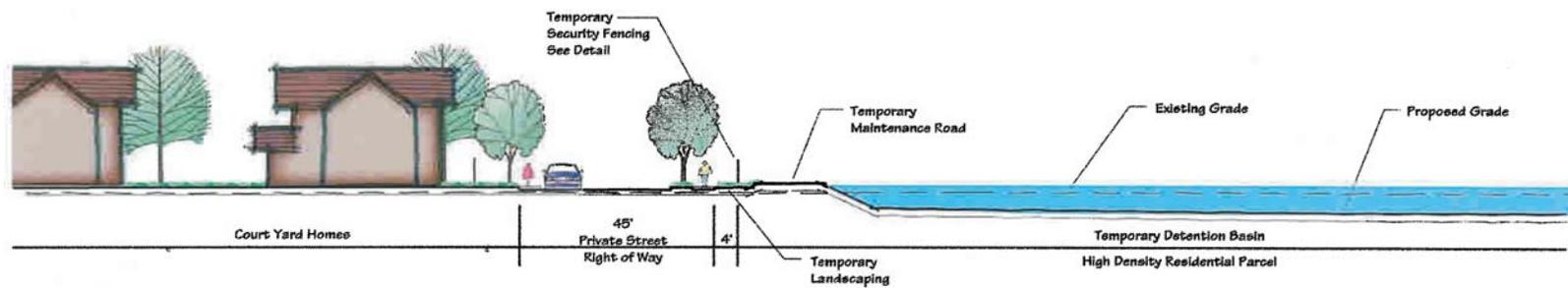
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Crystal Bay
Proposed Zoning

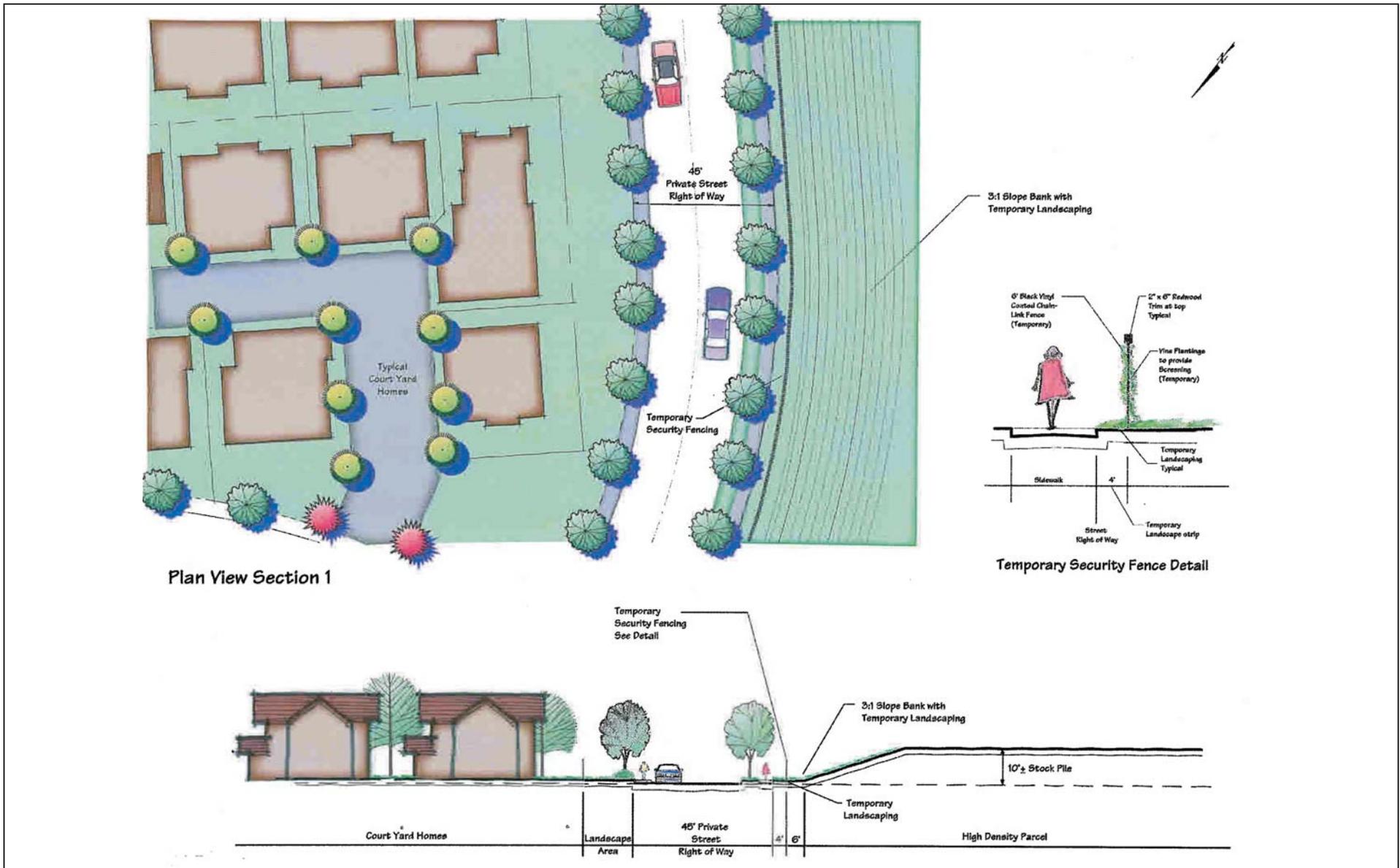


Plan View Section 2



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FIGURE 3.4.3



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FIGURE 3.4.4

Urban Design / Landscape Plan. The guiding concept for Crystal Bay at Spanos Park West is the creation of well planned mixed density neighborhoods that utilize a variety of architectural housing styles and detail elements that are complimentary to each other while unifying the project with a strong landscape theme. Crystal Bay is intended to be an infill project within the existing fabric of Westlake at Spanos Park West and Spanos Park West to the east, and to provide additional housing and recreational opportunities within this important part of the City of Stockton. Crystal Bay is predominately residential in nature, with a variety of parks and open space amenities. The Master Development Plan integrates with the approved Westlake and the existing Spanos Park West residential developments to the east and proposes a logical circulation network to complete and provide access to the area. The development program reflects land uses that are responsive to the demands of the market while complying with the policies and programs of the General Plan of the City.

The Landscape Concept for Crystal Bay is a combination of creative design solutions, materials, and complimentary design elements that unifies the overall development with the surrounding communities within Stockton and development along the Delta. Figure 3.4.5 illustrates the proposed landscape plan.

The landscape requirements included in this section are intended to establish the minimum standards for the design and preparation of landscape plans for the common and right of way areas within the project. All areas not covered by structures, parking, circulation, or paved work/storage areas shall be landscaped. With the exception of the 8 acre City owned public park, all landscape improvement plans (including the pocket parks) shall be subject to review and approval by the Design Review Board as well as the City of Stockton. The 8 acre public park shall be designed by the City of Stockton.

- a. Landscape plans for all areas within a proposed development other than those for single family residences shall be prepared by a Landscape Architect licensed by the State of California.
- b. Proposed landscaping shall utilize water conserving and drought tolerant plant materials and incorporate Best management Practices for maintenance and irrigation.
- c. Fully-dimensioned landscape plans shall be prepared for all proposed development projects as specified in the Master Development Plan.
- d. Landscaped buffers and solid barriers shall be used to separate the areas proposed for public facilities from adjacent private residential areas.
- e. The landscape plans for all development proposed for the project shall conform to the design guidelines contained in the Master Development Plan.
- f. Street tree landscape plans shall reflect the hierarchy of the roads and streets in Crystal Bay and shall reinforce the identity and character of the roadway network as defined by the Master Development Plan. The street tree planting scheme shall conform to the plant materials list included in the MDP.

- g. All parking areas having five (5) or more spaces shall be screened and include a landscape area of five feet (5') or more along the road or street side property lines not occupied by driveways. Parking area landscape screening shall consist of planting materials of a minimum of thirty-six inches (36") in height and a maximum of sixty inches (60") at maturity as approved by the Design Review Board.
- h. All parking areas, having eight (8) or more spaces shall provide one (1) tree for every eight (8) spaces. Trees installed in such parking areas shall be a minimum of 15-gallon can in size at the time of planting, and shall be placed in tree wells suitable for the species of trees to be installed. All trees planted in Crystal Bay parking areas shall conform to the Plan Palette included in the Master Development Plan.
- i. The street tree landscape plan shall identify the species and location of all trees to be planted during the installation of the backbone infrastructure for Crystal Bay. Subsequent development proposals within Crystal Bay shall also be required to include a Street Tree Landscape Plan. These plans shall be subject to the review and approval of the Design Review Board.
- j. Landscape Plans for any development in Crystal Bay shall consider utility service locations, traffic safety sight line requirements, and structures on adjacent properties to avoid conflicts as the landscape elements mature. Street trees and trees planted in landscaped areas near public walkways or street curbs shall be selected and installed to prevent reasonable damage to sidewalks, curbs, gutters, and other public improvements per City standard requirements. Tree species with invasive root systems shall not be allowed near water lines or sewer lines. All landscape plans shall be subject to the review and approval of the Design Review Board.
- k. Automatic irrigation systems shall be installed in all public areas, rights of way, parks and residential areas. Irrigation Plans shall include low volume spray heads and drip emitters when practical. Irrigation Plans shall be compatible with non-potable water systems or other water conservation techniques as appropriate.
- l. The Plant Palette included in the Master Development Plan shall be used to prepare Landscape Plans for all areas of development within Crystal Bay. Plant materials not included on the palette included in the MDP shall be subject to the review and approval of the Design Review Board.

The Master Development Plan, and this companion EIR, establish the criteria for evaluating and processing future specific proposals for development within Crystal Bay. The primary intent and purpose of the Master Development Plan are to create the framework of maximum flexibility for residential development, while remaining consistent with the policies, general land uses and programs of the City's General Plan. The Master Development Plan, and companion EIR, provide information that is required to establish the appropriateness of Crystal Bay for the intended uses, for the proposed intensity of those uses, for its consistency with the environment, and for the compatibility of those uses with public health, welfare, and safety. Any future development application within Crystal Bay must demonstrate that the proposed development is consistent with the goals, objectives and policies of the Master Development Plan and the City's General Plan. The City's General Plan, Zoning

Ordinance, Master Development Plan, and companion EIR provide the criteria and process for considering and implementing development proposals.



FIGURE 3.4.5

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SOURCE: Kimley-Horn, 2007

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Crystal Bay
Proposed Landscape Plan

The project is a mixed use project, and would consider a range of residential densities within the project site. Project applications would include plans and technical studies, including site plans, floor plans, exterior building elevations, and soils reports to allow the project to be evaluated for consistency with the Master Development Plan. The Community Development Director may require additional studies, determined on a case by case basis. Plans will be submitted to and reviewed by the Design Review Board for architectural review. Once approved by the Design Review Board, plans would be submitted to the City for Site Plan and Architectural Design Review, and for building permits.

Several findings are required before the Planning Commission and City Council may approve the Crystal Bay Master Development Plan. The reviewing body must be able to make all of the following findings in a positive manner to approve the Master Development Plan:

1. The Master Development Plan is consistent with the objectives, policies, general land uses, programs and actions of the City's General Plan;
2. The Master Development Plan adequately addresses the physical development characteristics of the Crystal Bay site;
3. The development standards identified in the Master Development Plan would serve to protect the public convenience, health, safety, and general welfare;
4. Development of the Crystal Bay site would ensure a compatible land use relationship with the surrounding neighborhood;
5. The Master Development Plan is in compliance with applicable requirements of the City's Planning and Zoning Code, other local ordinances, and State and Federal Law; and
6. The Master Development Plan is in compliance with the provisions of the CEQA and the City's environmental guidelines.

During the review of an application for development of a project within Crystal Bay it could be determined that the proposed project would be inconsistent with the uses and development densities identified and allowed within the Master Development Plan. In that event, Amendments to the Master Development Plan can be separated into two classes. (1) Minor Amendments, i.e. amendments that the Community Development Director finds are consistent with the intent and purpose of Crystal Bay Master Development Plan; and (2) Major Amendments, i.e. a request for an alternative project or use that the Community Development Director finds is not presently included as an alternative project or use within the Master Development Plan and is a project or use which is inconsistent with and does not share the same or similar characteristics of an allowed use identified within the Master Development Plan.

Minor amendments shall not be subject to public hearings. Changes in development intensity or residential density that do not exceed the intensity or density established by the Master Development Plan and considered by the Master Development Plan EIR, such as lot line adjustments, a compatible land use change as provided in Section Three of the MDP or adjustments to the roadway or street system, are examples of minor adjustments that shall not require an extensive amendment process and shall be subject to the approval of the Community Development Director based on an approval recommendation of the Design Review Board.

Major amendments, such as a request for a project or use which is not consistent with and does not share the same or similar characteristics of an allowed use identified within the Master Development Plan, may be approved, provided: (1) the Design Review Board for Crystal Bay recommends to the City of Stockton that the City issue a Conditional Use Permit for the proposed project or use; and (2) that the City of Stockton Planning Commission approves the proposed project or use and issue a Conditional Use Permit. Issuance of a Conditional Use Permit by the Planning Commission, or by the City Council, if the decision of the Planning Commission is appealed to the City Council, shall be subject to the following findings based upon substantial evidence presented at the public hearing:

- That the proposed project is in conformance with the City's General Plan;
- That the proposed project or use would not create internal inconsistencies within the Master Development Plan Area;
- That the proposed project of use would not adversely impact the environment, or in the alternative, all significant adverse impacts of the proposed project or use can and will be mitigated to less than significant, and;
- That such proposed project or use is compatible with adjacent land uses.

Once adopted by the City, the Master Development Plan would be subject to a review by the Community Development Director every five years to ensure that the applicant, or any successor-in-interest is in compliance with the intent and purpose of the plan.

Key Design Elements

The primary design concept for the project is to create a high quality community by integrating a range of housing types and styles that is compatible with the surrounding development. The following guidelines apply to the Crystal Bay Project:

1. All buildings, structures and site improvements should be carefully integrated with the landscape.
2. Proposed development plans are intended to implement the common themes established for the Master Development Plan so that similar design features, such as the roads, street landscaping, and signage programs throughout the project are designed in a consistent manner with the development standards and design guidelines.
3. Private development within any portion of Crystal Bay should emphasize pedestrian and bicycle connections within the project.
4. Project-specific development plans should emphasize the treatment of the roads and streets, particularly the collector and arterial roads, lakes, and entry gateways, as important public use areas.

Circulation

The circulation network, both vehicular and pedestrian, establishes the basic framework for the development of Crystal Bay. The following general guidelines are intended to establish the character of the circulation network:

1. Project-specific development shall identify a clear hierarchy of roads and streets based on the projected volume of traffic and the proposed land uses.
2. Roads and street widths, centerline curves, medians and landscaped treatments, may deviate from the City standards in order to enhance the overall design quality and compatibility of the development with the surrounding area. Any deviations from City standards are subject to the approval of the Community Development Director and the City Engineer.
3. Entrances into neighborhoods from the collector streets should be limited in number and shared between adjacent neighborhoods to reduce curb cuts and potential conflicts along streets.
4. The primary intersections and neighborhood entries should incorporate decorative paving materials, monument signs, or other design patterns intended to identify key intersections and highlight pedestrian crossing areas. Special paving in public streets shall require issuance of a Revocable Permit, or shall be included in a Lighting and Landscaping District maintenance agreement. All such paving materials, patterns, signage, or other improvements shall be reviewed and approved by the Design Review Board and shall be subject to the approval of the City Engineer.
5. Pedestrian and bicycle trails should be provided for the residential neighborhoods to provide connections to major circulation roads, public transportation facilities, parks, and with other pedestrian and bicycle facilities within Crystal Bay.
6. The pedestrian circulation system should provide a link from residential development to the levee trail adjacent to Rio Blanco Road, adjacent developments, the Marina, parks, and to trails within Spanos Park West leading to the retail/office center.
7. Pedestrian walkways within the public rights-of-way of local streets should be a minimum of four feet (4') in width and constructed according to Stockton City Standards.
8. Combination pedestrian and bicycle paths shall be a minimum 8 feet (8') in width. Such paths should be at designated locations to be compatible with the City of Stockton Existing and Future Bikeway Plan. The locations of these paths shall be reviewed and approved by the Design Review Board and the City Engineer.
9. Where roads and streets include a bike lane, such bike lanes shall be no less than five feet (5') in width, per the City Engineer.
10. On collector streets, sidewalks and paths should be separated from streets by a parkway strip. The width of the parkway strip shall be a minimum of five feet (5'). The design of the walk and parkway areas shall be reviewed and approved by the Design Review Board and the City Engineer.

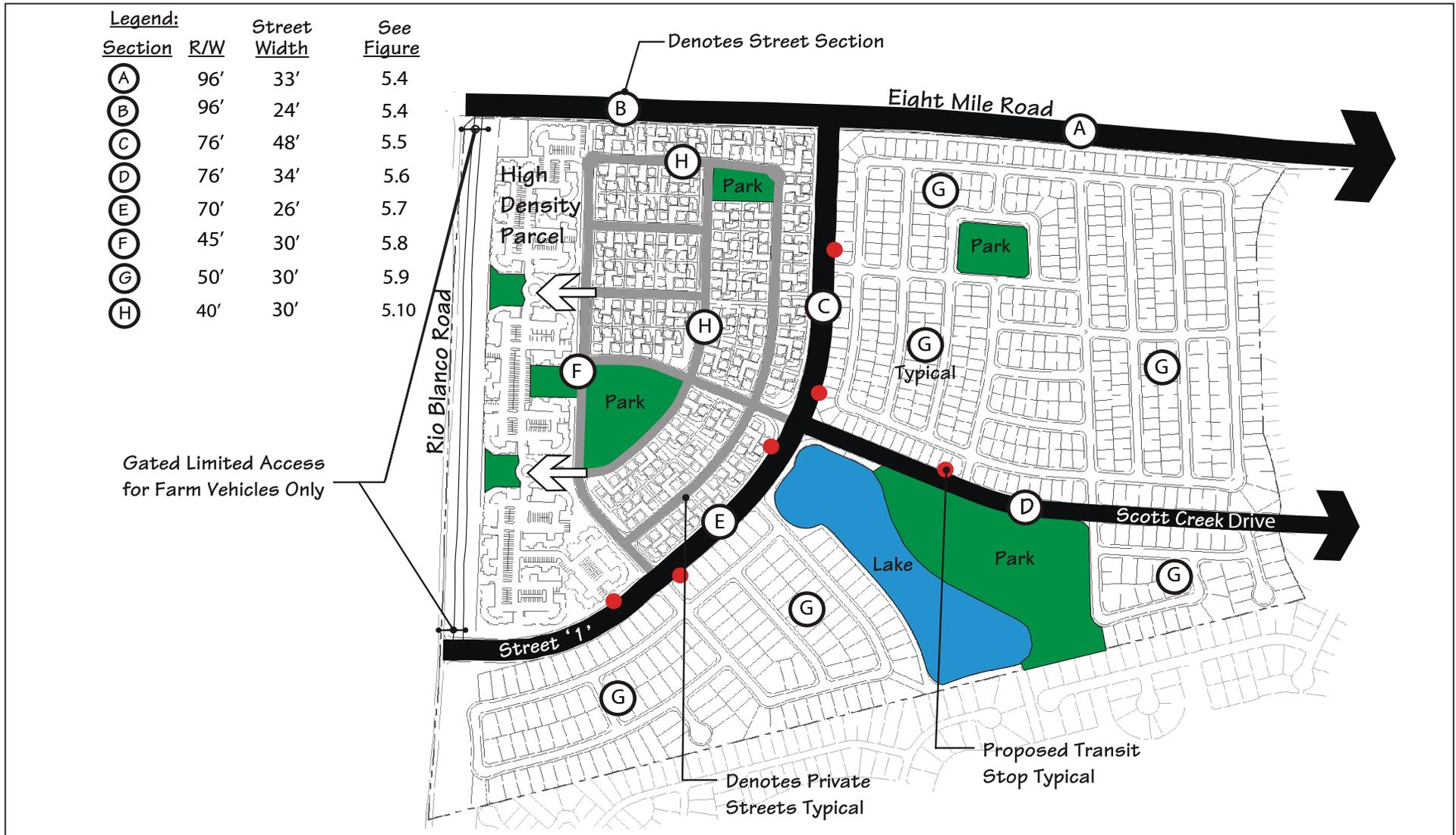


FIGURE 3.4.6

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SOURCE: Kimley-Horn, 2007

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Crystal Bay
Conceptual Circulation Plan

Parking Areas

The landscape character of the street corridors should be incorporated with the design of Crystal Bay parking areas to visually integrate the public areas with the private areas and enhance the visual quality of the circulation network.

Residential Uses

The architectural character of each residential neighborhood should have a distinct character while contributing to the overall design character of Crystal Bay. The Development Plan indicates that nine (9) neighborhoods are proposed for residential development. The general guidelines for residential developments are as follows:

1. Neighborhood development plans should maximize access from the residential units to the rail system, lake, and parks within Crystal Bay.
2. All residential parcel yard areas visible from any public area should be landscaped within one hundred and twenty (120) days of occupancy.
3. All residential neighborhoods should have a clear sense of entry and an architectural design theme. Entries should include a landscaped median. All entry areas shall utilize a similar landscape treatment and shall be reviewed and approved by the Design Review Board.

Phasing

The following provides a description of the anticipated project phasing, based on the primary land uses included in the Master Development Plan, and as further depicted in Figure 3.4.7, the Conceptual Phasing Plan.

Phase 1: Mobilization/Mass Grading: Mass grading of the entire site will be performed as part of the initial phase of development. This includes: delivery and operation of earth moving equipment; required demolition of on-site improvements, including site clearing and grubbing; installation of the necessary equipment for site dewatering; trucking construction materials off-site or on-site; excavation, shaping and installation of all associated piping and equipment for the on-site lake; and mass grading of the neighborhoods into "superpads".

Major/Backbone Infrastructure: The first phase of the project infrastructure consists of: grading and installation of the main collector road, Street "1", from Eight Mile Road south to the point which the road intersects with Rio Blanco Road; the extension of Scott Creek Drive west from the western boundary of Westlake to the end of the street return on Street "1" and construction of all the backbone systems and facilities, including the storm drainage, water, sewer, gas, electricity, cable, telephone, and fiber optics, or any other utility that would be normally installed within the right of way of the named streets; and required grading, paving and landscaping for the necessary widening of Eight Mile Road along the project frontage in conformance with the Eight Mile Road Specific Plan. The first phase street landscaping improvements may be constructed on one or both sides of the completed Phase 1 roadways as agreed to by the City's Community Development Director, City Engineer, and Public Works Director.

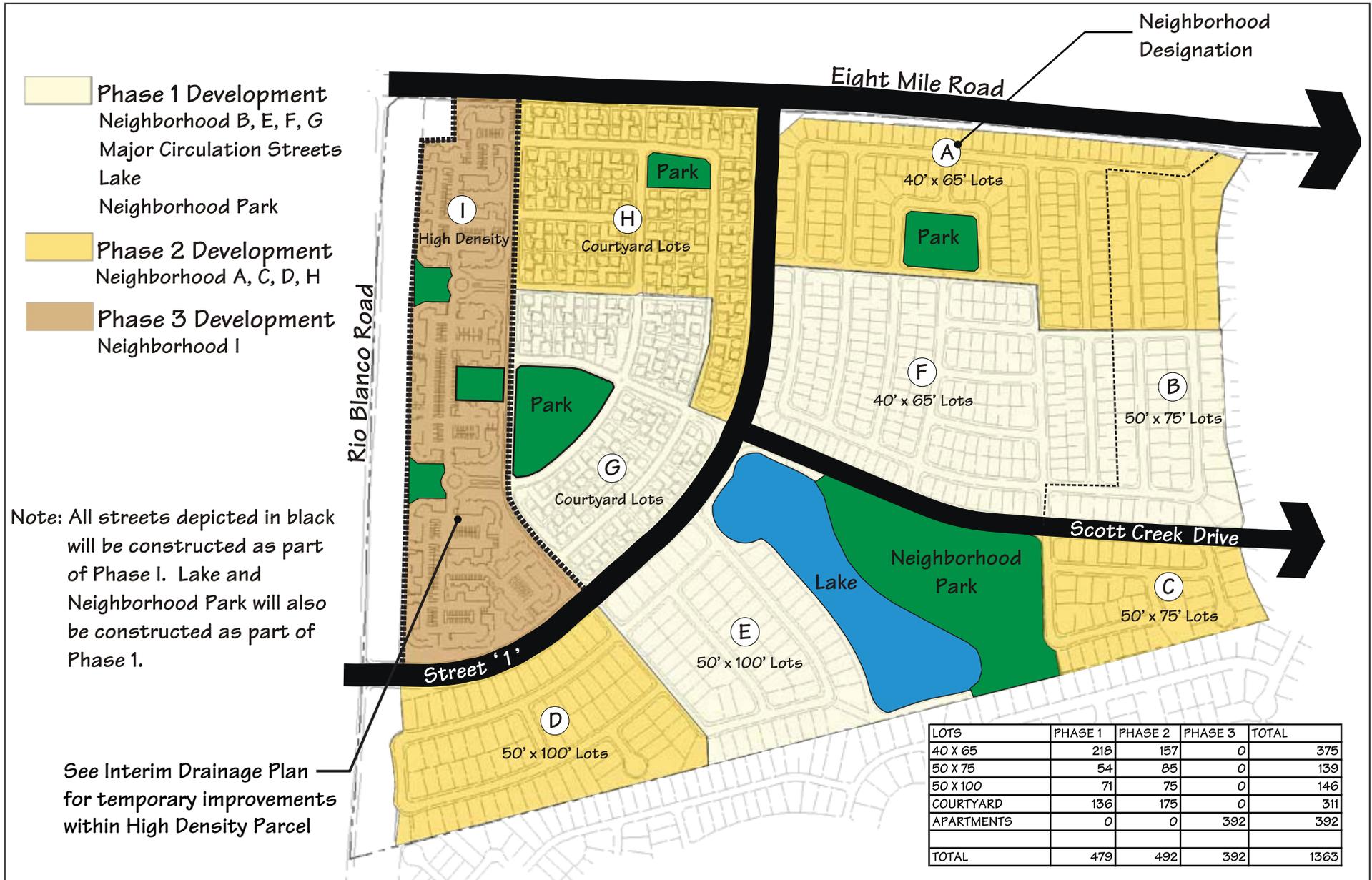


FIGURE 3.4.7

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In addition, during Phase 1, the multi-family parcel will be used for storage of runoff waters diverted from the existing drainage ditch (between Westlake Village and Crystal Bay). These waters will be conveyed along Eight Mile Road (within three buried drainage pipes), discharging into a temporary detention basin, and ultimately discharging into Bishop Cut via the existing pump station. Earth excavated from the detention basin will be stock-piled adjacent to the basin creating a 10-foot high mound. Figure 3.4.8 illustrates the interim drainage plan.

Construction of access streets, collector streets and service roads required to serve a particular project or parcel within Crystal Bay may be constructed in the initial phase of development. In addition, the 8-acre Neighborhood Park will be developed in Phase 1. It should be noted that the project proponent will be responsible for maintenance of the park until such time as sufficient funds are generated for the maintenance entity to take over and as acceptable to the City.

Phase 2: It is anticipated that final improvements would commence on Neighborhoods B, E, F, and G under this phase. This represents approximately 37 percent of the proposed residential development for the project. Phase 2 and subsequent phases of development may also include the construction of additional access streets, collector streets or service roads to specific projects or parcels. Pocket Parks and other open space associated to Phase 2 neighborhoods will also be developed Phase 2.

It is anticipated that final improvements would commence on Neighborhoods A, C, D and H under Phase 2 as well. Pocket Parks and other open space associated to Phase 3 neighborhoods will also be developed in Phase 3

Phase 3: When the lands north of Eight Mile Road are developed, the multi-family residential product will be developed, and a new drainage system will be constructed consistent with the City's Drainage Master Plan to discharge irrigation waters into Bishop Cut. Additional earth fill material may be imported into the temporary detention basin to create a developable pad.

The Crystal Bay Master Development Plan also permits phasing between and among the portions of the project. The owner, developer, and/or successor-in-interest may initiate construction on any given parcel prior to the build-out of another parcel, provided that the infrastructure necessary to serve such parcel would be completed prior to occupancy. the phasing schedule for the proposed development is meant to be conceptual only. Development phasing is expected to be a flexible and dynamic process that allows adjustments for fluctuations in market demand and changing economic conditions.

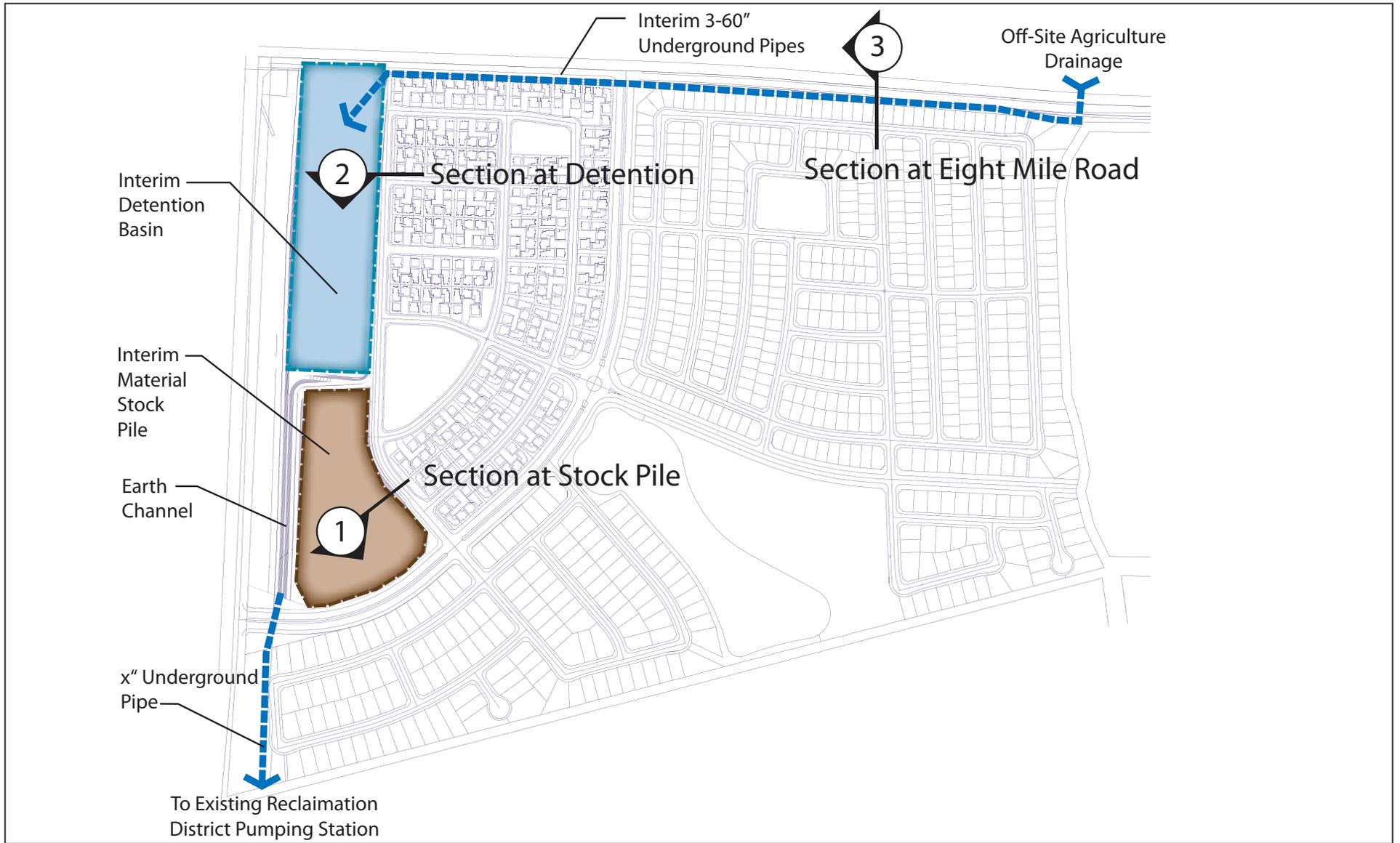


FIGURE 3.4.8

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SOURCE: Kimley-Horn, 2007

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Crystal Bay
Interim Drainage Plan

3.5 REGULATORY REQUIREMENTS, PERMITS, AND APPROVALS

City of Stockton

The City of Stockton, as Lead Agency, will be responsible for the discretionary actions associated with the proposed project.

Environmental Impact Report (#6-05). In accordance with CEQA, prior to taking action on the proposed discretionary applications, the Stockton City Council must certify the Final Environmental Impact Report and adopt applicable CEQA Findings and the Mitigation Monitoring Program.

General Plan Amendment. A General Plan Amendment was previously approved by the City of Stockton in September 2004 in conjunction with amending the City's Sphere of Influence boundary. The General Plan land use designation for the site is now Low-Medium Density Residential. To accommodate the multi-family component of the proposed project, a General Plan Amendment on 17.6 acres to High Density Residential is required for a portion of the project site and an eight-acre site for a "Park and Recreation" designation. The Planning Commission will approve and recommend the MDP to the City Council. The City Council will make determination for final approval of the MDP.

Pre-zoning. As a required element of the proposed annexation, and as needed to support the General Plan Amendment, the site must be pre-zoned into the City of Stockton's zoning districts. The applicant has requested pre-zoning for the site to R-H (High Density Residential), and R-M (Medium Density Residential), and R-L (Low Density Residential) for the courtyard units and single family detached residential, as well as a PF (Public Facilities District) respectively. The applicant has requested pre-zoning to promote quality planning and innovative site planning consistent with the goals and policies of the General Plan.

Master Development Plan. This Conceptual Master Development Plan (City File #MDP 3-05) includes detailed information in the form of text and diagrams (See previous Figure 3.4.1). At a minimum, the Master Development Plan must provide information regarding proposed land uses, infrastructure, land use and development standards, implementation measures, relationship to the General Plan, and other information relevant to the specific proposal. The Master Development Plan requires a Planning Commission recommendation and City Council approval. The Master Development Plan (Appendix B) is hereby incorporated by reference.

Development Agreement. A Development Agreement (City File #DA) must be prepared ensuring that all subsequent landowners and tenants comply with the adopted Master Development Plan. The Development Agreement specifies terms and conditions for the development of the project and will ensure that the applicant will develop the project consistent with the Master Development Plan. In particular, the Development Agreement outlines both the applicant's and City's responsibilities for providing infrastructure, public facilities, phasing of development, etc. The details associated with the 8-acre neighborhood park (i.e., financing, reimbursement, construction timing) will also be included. The Development Agreement requires a Planning Commission recommendation and City Council

approval. The Development Agreement (Appendix C) is hereby incorporated by reference. The Development Agreement will establish the number of units.

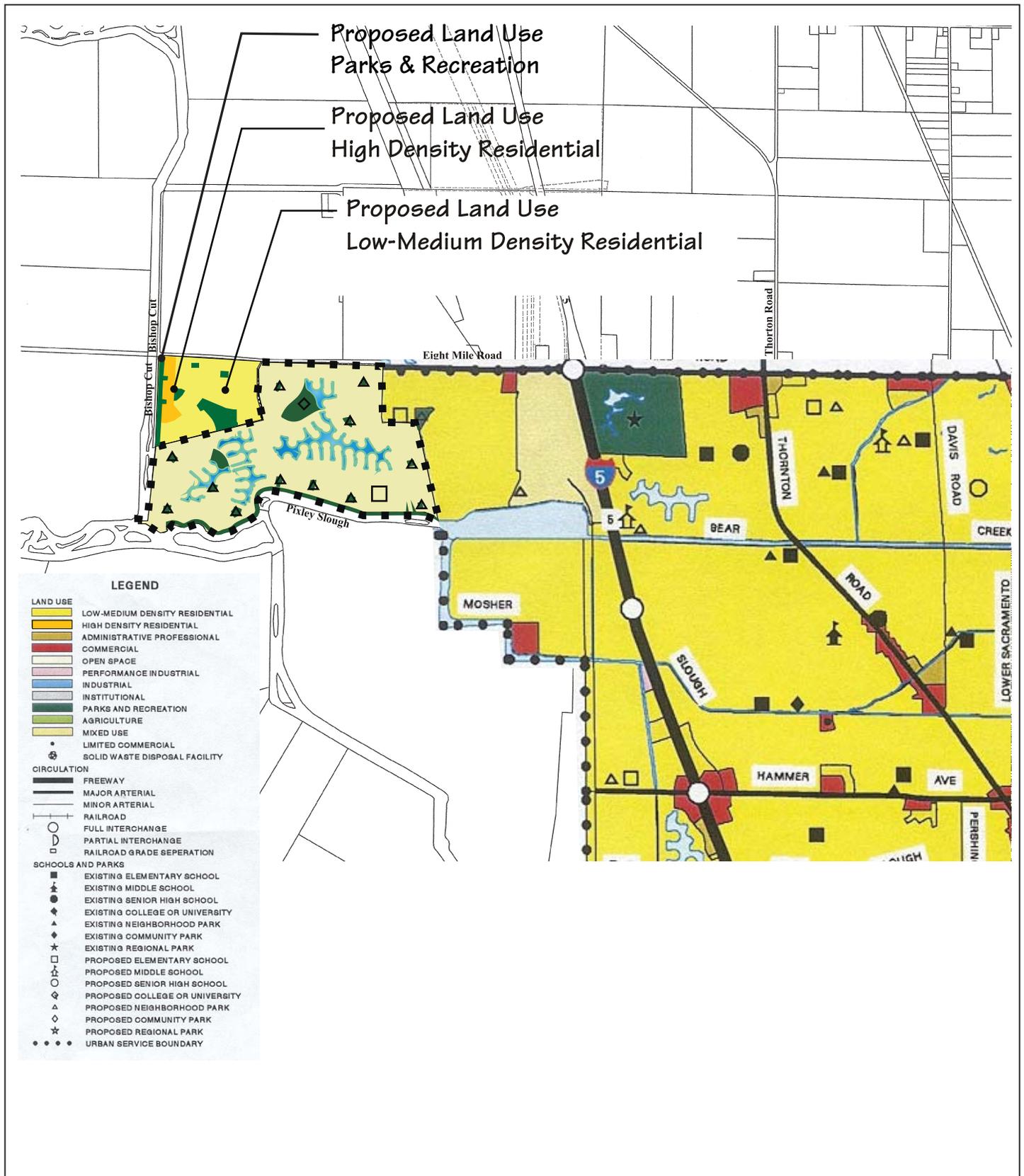
Site Plan Review. A Site Plan Review is required to implement all or any portion of an adopted Master Development Plan, unless subject to another type of discretionary permit identified in the adopted Master Development Plan. Site plan review requires a recommendation of the Site Plan Review Committee and approval of the City's Community Development Director.

Amend Eight Mile Road Precise Road Plan. The layout of the project requires an adjustment to the road concept and access identified in the adopted Eight Mile Road Precise Road Plan and requires a Plan Amendment (City File #PRP). The adopted Precise Road Plan does not specify an intersection or driveway location on Eight Mile Road that would serve the proposed project. A proposal to provide a new intersection location has been included in the Circulation Plan (Figure 3.3.2) to accommodate the project site layout of uses and parcels. The request to amend the Eight Mile Road Precise Road Plan to adjust the roadway accesses is addressed in this DEIR document. The Precise Road Plan Amendment requires a Planning Commission recommendation and City Council approval.

Tentative Map. With approval of the applicant's request to pre-zone the City's zoning designation to R-L, R-M, R-H, and PF and adoption of the Master Development Plan and approval of the Development Agreement, a tentative map (City File #) has been filed that is consistent with the Master Development Plan layout. Tentative maps require City Planning Commission approval.

Architectural Design Review. The Master Development Plan must be reviewed and approved by the City's Architectural Review Committee (ARC) prior to the submittal of building plans. The ARC will approve the MDP with their recommendations to the Community Development Director (CDD). The CDD will bring their recommendations to the Planning Commission for approval. The City Council will take action for final approval of the MDP.

Following public review of the environmental document, the City will consider the various applications that have been submitted by the applicant. Each action has been previously described, including the responsibilities of the various City decision makers. Table 3.5.A summarizes the proposed permits and approvals required by the City and other regulatory agencies.



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FIGURE 3.5.1



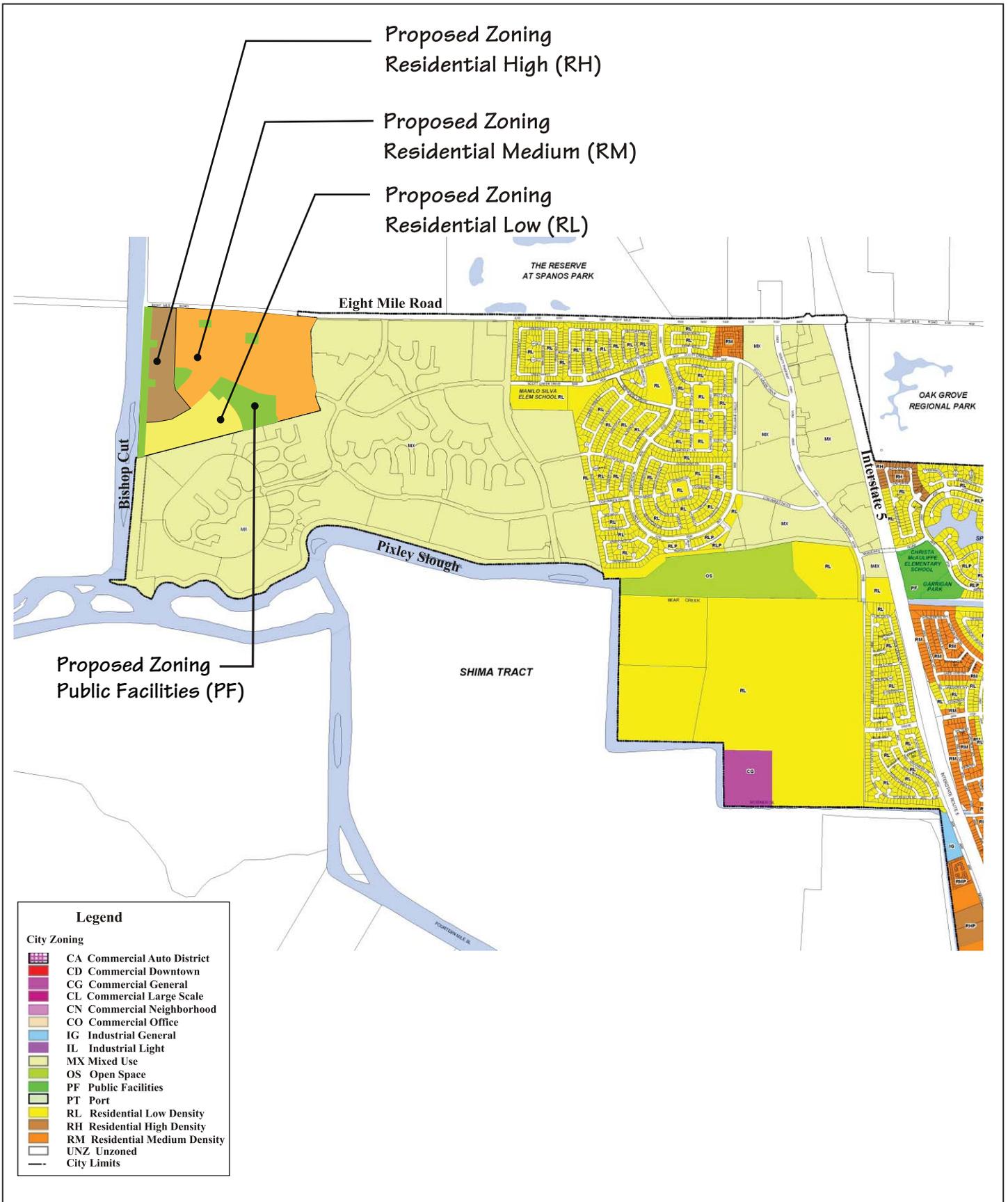


FIGURE 3.5.2

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SOURCE Kimley-Horn, 2007

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Crystal Bay
Proposed Zoning

Table 3.5.A: Summary of Permits and Approvals

DECISION MAKER	ANNEXATION	GENERAL PLAN AMENDMENT (GPA#)	ZONE CHANGE (PRE-ZONING) (Z)	MASTER DEVELOPMENT PLAN (3-05)	DEVELOPMENT AGREEMENT (DA #)	SITE PLAN REVIEW	EIGHT MILE ROAD PRECISE ROAD PLAN AMENDMENT (PPA #)	TENTATIVE MAP (TM #)	STORM-WATER DISCHARGE PUMP STATION	SECTION 401* PERMIT; NPDES PERMIT	STREAM-BED ALTERATION*	HABITAT CONSERVATION PLAN AMENDMENT (MSCP)	SECTION 404 NATION-WIDE PERMIT*	ARCHITECTURAL DESIGN REVIEW
City Council	R	A	A	A	A		A							A
City Planning Commission		R	R	R	R		R	A						R
Development Review Committee	R			R	R	R	R	R						
Community Development Director						A								R
LAFCO	A													
Lodi Unified School District														
Regional Water Quality Control Board									A	A				
California Department of Fish and Game											A			
U.S. Army Corps of Engineers													A	
SJCOG												A		
Architectural Review Committee														R

Notes:
A = Approval; R = Recommendation
* = to be determined

CHAPTER 4.0 ENVIRONMENTAL ANALYSIS

INTRODUCTION

The following document serves as a major reference or as background studies for this DEIR and is, therefore, incorporated by reference in the DEIR. This document is available for review at the City of Stockton, Department of Community Development, Planning Division, 345 N. El Dorado Street, Stockton, California 95202, phone (209) 937-8266.

LSA Associates, Inc. Draft Westlake Villages Environmental Impact Report (EIR 1-04). June 25, 2004. SCH #2004052105. Certified by the City of Stockton on September 14, 2004.

LSA Associates, Inc. Supplemental Final Environmental Impact Report Spanos Park West Project. SCH #87032415. Prepared for the City of Stockton. December 2001.

Format for Environmental Analyses

The purpose of this chapter is to present information on the various environmental topics that are relevant to the Crystal Bay project site and region. With this information, analyses of potential project impacts on the environment are provided, thus presenting the reader with information about the project and the potential effects of the project.

Several of these environmental topics are technically oriented and have been examined by experts on those topics. Where applicable, technical analyses have been conducted and are provided in the appendices of this document.

To effectively characterize the impacts of the proposed Crystal Bay on the environment, the DEIR document adheres to the following sequence:

- Existing Setting
- Impact Significance Criteria
- Impacts and Mitigation Measures
- Level of Significance After Mitigation

Under Existing Setting, those elements associated with the current site and area conditions have been documented. These conditions help to define constraints to the project, describe previous analyses and assumptions, and outline potential concerns and issue areas.

After documenting the concerns and issues in Existing Setting, the impacts associated with implementing the project are addressed. This includes a format for the Impacts, Mitigation Measures, and Level of Significance that facilitate the reader's understanding of project effects.

At the beginning of each impact section, Impact Significance Criteria are defined in accordance with general CEQA parameters, industry professional standards, and professional judgment. These criteria are evaluated against the project impacts to assess the level of significance prior to mitigation. Also included, where applicable, is a discussion of the potential effects that are not considered significant, followed by the potentially significant effects.

A summary of each impact is included at the beginning of the impact discussion and has been included in the overall Summary Impact Table.

After identifying the potentially significant impacts, the EIR identifies mitigation, as needed and where available, to reduce the impacts to a level below significance. Mitigation for each potentially significant impact is presented separately, and conclusions regarding significance are reached prior to discussing other project impacts. At the end of each environmental topic is a summary conclusion of significance.

4.1 GEOPHYSICAL RESOURCES

Kleinfelder, Inc. prepared a Geotechnical Services Report for the proposed project (Appendix D). The geotechnical report was used in preparation of this section.

4.1.1 Existing Setting

Landform

Topographical features associated with the project site are illustrated on Figure 4.1.1. The site is nearly flat consisting of agricultural fields.

Geological Conditions

The site lies within the western part of the Great Valley Geomorphic Province of California. The valley is about 400 miles long and averages about 50 miles wide, and comprises about 20,000 square miles. The valley has been filled with a thick sequence of marine and non-marine sediments from the late Jurassic to Holocene. The uppermost strata of the Great Valley represent, for the most part, the alluvial, flood, and delta plains of two major rivers (Sacramento and San Joaquin Rivers) and their tributaries.

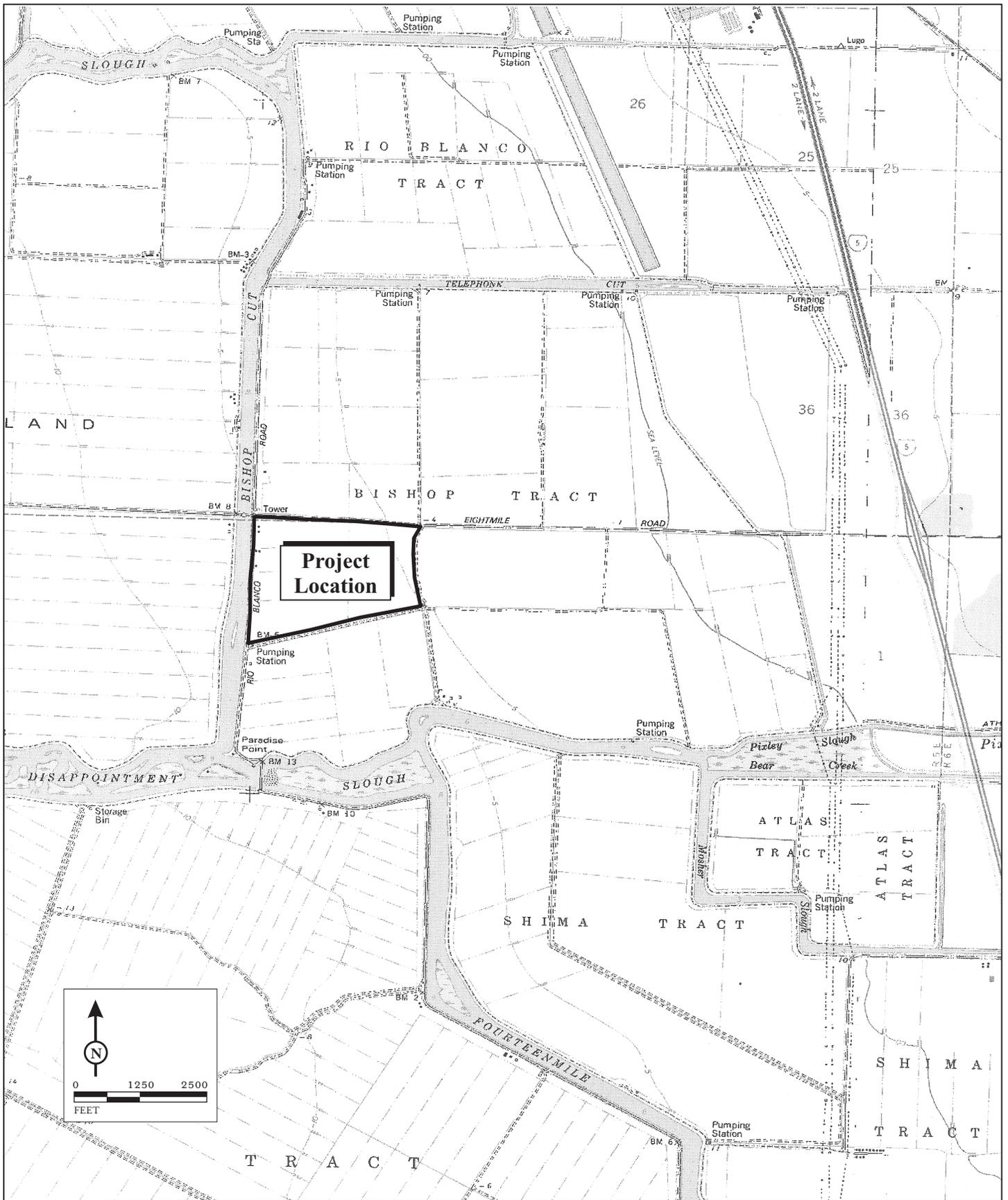
The valley deposits are derived from the Coast Ranges to the west and Sierra Nevada Mountains to the east. Granitic and metamorphic rocks outcrop along the eastern and southeastern flanks of the valley. Marine sedimentary rocks outcrop along most of the western, southwestern, southern, and southeastern flanks; and volcanic rocks and deposits outcrop along the northeastern flanks of the valley. The valley geomorphology includes dissected uplands, low alluvial plains and fans, river flood plains and channels, and overflow lands and lake bottoms.

The site itself is located in the north central portion of the San Joaquin Valley in an area characterized by delta fluvial and alluvial fan deposits. The majority of the native sediments include continental rocks and deposits of a heterogeneous mix of poorly sorted clay, silt, sand, and gravel. Some beds of claystone, siltstone, sandstone, and conglomerate can also be present.

The soils underlying the project site consist of “approximately two feet of compressible and weak peat/organic silt, underlain by interbedded strata of very-loose to medium-dense silty and clayey sand and stiff to hard sandy clay to the maximum depth explored.” (Kleinfelder, 2003a).

Regional Faulting

Stockton is located in an area that is characterized by low to moderate seismic activity. The project site is not located within or adjacent to any Alquist-Priolo Zones. Additionally, the project site is not located within an area with faults that displace valley alluvium. However, there are a number of active and potentially active faults located to the east and west of the project site. Table 4.1.A presents three significant regional faults in the project area.



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FIGURE 4.1.1

Table 4.1.A: Significant Regional Faults

FAULT	APPROXIMATE DISTANCE FROM SITE (MILES)	MAGNITUDE OF MAXIMUM EARTHQUAKE*	SLIP RATE
Great Valley	20	6.9	1.5
Clayton-Marsh Creek - Greenville	27	6.9	2.0
Vaca	27	6.7	1.5

Source: Kleinfelder, Inc., 2003b.

Notes: * Moment Magnitude: the estimation of an earthquake magnitude by using the seismic moment which is a measure of an earthquake size utilizing rock rigidity, amount of slip, and area of rupture.

Soils Data

Field investigations performed at the project site indicate that soils underlying the project site consist of “approximately two feet of compressible and weak peat/organic silt, underlain by interbedded strata of very-loose to medium-dense silty and clayey sand and stiff to hard sandy clay to the maximum depth explored.” (Kleinfelder, 2003a).

Based on the Soil Survey of San Joaquin County, California, the soils mapped on the project site are defined as follows (USDA-SCS, 1992):

Kingile muck, partially drained, 0 to 2 percent slopes: these very deep, very poorly drained, nearly level soils are found on deltas. The soils are formed from hydrophytic plant remains and underlying alluvium derived from mixed rock sources. This soil unit is suited to irrigated row and field crops.

Ryde clay loam, partially drained, 0 to 2 percent slopes: these very deep, very poorly drained, nearly level soils are found on floodplains and deltas. The soils are formed from hydrophytic plant remains and underlying alluvium derived from mixed rock sources. This soil unit is suited to irrigated row and field crops.

Groundwater

Generally, ground water depths range from 3.5 to 5 feet below existing grade. Ground water levels will vary based on seasonal rainfall, irrigation and runoff conditions (Kleinfelder, 2003a).

4.1.2 Impact Significance Criteria

Potential significant impacts associated with soils, geology, and seismicity have been evaluated using the following criteria:

GEO-a Increased erosion during construction activities and following completion of the proposed project;

- GEO-b** Potential constraints to development as a result of seismic hazards within the study area; and,
- GEO-c** Potential constraint to development as a result of soils and geologic conditions in the area of the proposed project.

4.1.3 Impacts And Mitigation Measures

Potentially Significant Effect

Impact GEO-1: Development of the project site would include substantial grading activities that could result in soil erosion (Significance Criterion GEO-a).

Implementation of the proposed project would require grading for proposed roadways, infrastructure, and superpads. Exposed soils are considered erodible when subjected to concentrated surface flow. Within the site, increased erosion may occur on unprotected rough graded surfaces if they are exposed to rainfall and surface runoff.

Mitigation Measure GEO-1a: Prior to approval of the improvement plans for site development, the project applicant will submit an erosion control plan to the Director of Municipal Utilities Department (MUD). Erosion control measures will include techniques such as physical and vegetative stabilization measures and runoff diversion measures, retention of vegetation, hydroseeding, geotextiles and mats, and straw bale or sandbag barriers and avoidance of grading activities near water channels to the maximum extent feasible. The proposed project must also comply with applicable State and City codes and regulations and adopted standards.

Mitigation Measure GEO-1b: Prior to construction, the applicant shall provide evidence to the Director of MUD that a Notice of Intent (NOI) has been filed with the Regional Water Quality Control Board (RWCQB) regarding compliance with National Pollutant Discharge Elimination System (NPDES) General Construction permit requirements.

Implementation of the above listed mitigation measures would reduce impacts affecting soil erosion to less than significant levels. Consequently, the conditions included in Significance Criterion GEO-a will be avoided.

Impact GEO-2: Implementation of the proposed project would expose people and structures to major seismic hazards (Significance Criterion GEO-b).

The project site is located within Seismic Zone 3 as identified in the 1997 Uniform Building Code. The geotechnical report indicates that special design considerations are not needed relating to seismic hazards. (Kleinfelder, 2003a).

Mitigation Measure GEO-2: Prior to approval of the building plans for site development, a seismicity report will be completed by an engineering geologist or equivalent professional regarding possible damage from seismic shaking and liquefaction. Plans for all structures shall be reviewed and

approved by the Building Division prior to approval of the building plans and building permits. This report will include:

1. An analysis of seismic hazards anticipated at the project site from regional faults.
2. A discussion and recommendations for seismic mitigation at the project site. Recommendations may include use of reinforced concrete foundations and avoidance of potentially unstable foundation materials.
3. The project applicant will incorporate the recommendations of the seismicity report into the design for all structures proposed at the project site. All structures will be designed to withstand the anticipated seismic hazards determined in the seismicity report.

Implementation of the above listed mitigation measure would reduce impacts due to major seismic hazards to a less than significant level. Consequently, the conditions included in Significance Criterion GEO-b will be avoided.

Impact GEO-3: Project implementation may encounter groundwater or soil conditions during grading that could affect structural support and suitability (Significance Criterion GEO-c).

The geotechnical study prepared for the project concludes that the site is suitable for development provided recommendations are incorporated into the project design. Three primary considerations in designing the proposed project include: 1) the shrink-swell (expansion) characteristics of the near surface organic soil and the potential for post construction heave of concrete slabs and lightly loaded foundations; 2) the weak and highly compressible nature of the organic silt and clay encountered in the southwestern portion of the site; and, 3) the shallow groundwater levels on the site.

The near surface soils underlying the site consists predominantly of low to moderately-plastic organic soils. These soils can exhibit significant shrink-swell or expansion characteristics with variations in moisture content. This potentially expansive nature can lead to post-construction heave, and cracking in concrete slabs and lightly-loaded foundations and pavements.

The organic soils on the project site are compressible in an uncompacted and undisturbed state. These soils are unsuitable for the proposed structures, unless post-tensioned slab foundations are used.

Ground water occurs on the project site between 3.5 to 5 feet below site grade. The geotechnical study indicates that shallow ground water is potentially the most significant consideration in constructing the proposed project. These shallow ground water levels could lead to subgrade instability. These impacts could be greatest in winter months for residences located near levees due to "underseepage."

The geotechnical study indicates that onsite clay soils will need to be inspected to determine suitability for use in the clay liner for the onsite lake. The study also recommends further testing prior to and during construction of the liners. Measures are provided below to minimize any potential impacts (Kleinfelder, 2003a).

Mitigation Measure GEO-3a: The site specific geotechnical study prepared for the proposed project site provides information on the suitability of excavated material as engineered fill. The study also

provides recommendations for treating onsite soils and alternatives to using onsite soils as engineered fill. The geotechnical study should be amended to include the following:

Mitigation Measure GEO-3b: To mitigate potential impacts of expansive soils, construction of the proposed project should consider use of post-tensioned slab foundations designed to resist and/or span the expansive soils. Other options are provided in the geotechnical report. The geotechnical study provided in Appendix D provides specific information regarding various construction options for building on expansive soils and drainage considerations. Homeowners should be made aware of the risks associated with expansive soils and the importance of maintaining positive drainage to convey water away from structures. Homeowners should also be made aware that potential man-made water sources such as pipes, drains, pools, ponds should be tested periodically and/or examined for signs of leakage or damage.

Mitigation Measure GEO-3c: To mitigate potential impacts of compressible soils, construction of the proposed project should consider using post-tensioned slab foundations or replacing this soil material with engineered fill. The geotechnical study provided in Appendix D provides specific information regarding various construction options for building on compressible soils.

Mitigation Measure GEO-3d: The geotechnical study recommends the installation of permanent dewatering systems to mitigate the high ground water levels on the project site. Additionally, “toe” drains should be installed along levees to prevent “underseepage.” Construction dewatering should also be implemented to ensure stable construction.

Mitigation Measure GEO-3e: Further testing should be performed prior to and during construction of the liners for the onsite lakes. The technical study presented in Appendix D provides additional recommendations for construction of the onsite lakes. The study also recommends hiring a lake construction consultant to provide the final lake design.

Mitigation Measure GEO-3f: The geotechnical study provides site specific recommendations and alternatives for mitigating potential impacts. Prior to the issuance of building permits for site development, the project applicant shall submit the geotechnical study to the Director of Community Development Department for approval. This consultation and approval process will ensure that the construction methods and alternatives provided within the study are viable for mitigating potential geophysical constraints of the site.

Implementation of the above listed mitigation measures would reduce impacts affecting structural support and suitability due to groundwater or soil conditions to a less than significant level. Consequently, the conditions included in Significance Criterion GEO-c will be avoided.

4.1.4 Level Of Significance After Mitigation

The mitigation measures outlined above will reduce impacts associated with soils, geology, and seismicity to less than significant levels. Approval of the seismicity study should ensure that there

will be no project impacts associated with soils and geology. The erosion control plan will ensure that erosion and sedimentation deposition will be minimized during and after construction.

4.2 AIR QUALITY

This section of the EIR describes potential impacts related to air quality as a result of the proposed project. The analysis focuses on potential air quality impacts to on-site and off-site sensitive land uses in the project area. Potential air quality impacts were evaluated against the State and federal air quality standards, as well as the emissions thresholds established by the San Joaquin Valley Unified Air Pollution Control District (SJVAPCD). This section was prepared by LSA Associates, Inc., (LSA).

4.2.1 Existing Environmental Setting

The project site is located within the City of Stockton, which is part of the San Joaquin Valley Air Basin (SJVAB) and is under the jurisdiction of the SJVAPCD. The air quality assessment for the proposed project includes estimating emissions associated with short-term construction and long-term operation of the proposed project.

A number of air quality modeling tools are available to assess the air quality impacts of projects. In addition, certain air districts, such as the SJVAPCD, have created guidelines and requirements to conduct air quality analyses. The methodologies provided by the SJVAPCD in its *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI, adopted August 20, 1998; revised January 10, 2002) and the Caltrans Transportation Project-Level Carbon Monoxide Protocol (December 1997) were adhered to in the assessment of air quality impacts for the proposed project.

Regional Air Quality

Both the State of California (State) and the federal government have established health-based ambient air quality standards (AAQS) for seven air pollutants. As shown in Table 4.2.A, these pollutants include ozone (O₃), CO, nitrogen dioxide (NO₂), sulfur dioxide (SO₂), coarse particulate matter with a diameter of 10 microns or less (PM₁₀), fine particulate matter less than 2.5 microns in diameter (PM_{2.5}), and lead. In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

In addition to setting out primary and secondary AAQS, the State has established a set of episode criteria for O₃, CO, NO₂, SO₂, suspended particulate matter (PM₁₀ and PM_{2.5}), and lead. These criteria refer to episode levels representing periods of short-term exposure to air pollutants that actually threaten public health. Health effects are progressively more severe as pollutant levels increase from Stage One to Stage Three. Table 4.2.B lists the primary health effects and sources of common air pollutants. These health effects would not occur unless the standards are exceeded by a large margin or for a prolonged period of time. The State AAQS are more stringent than the federal AAQS.

The California Clean Air Act (CCAA) provides the air districts, such as SJVAPCD, with the authority to manage transportation activities at indirect sources. Indirect sources of pollution are generated when minor sources collectively emit a substantial amount of pollution. Examples of this would be the motor vehicles at an intersection, a mall, and on highways. SJVAPCD also regulates stationary

sources of pollution throughout its jurisdictional area. Direct emissions from motor vehicles are regulated by the California Air Resources Board (ARB).

Table 4.2.A: Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards ¹		Federal Standards ²		
		Concentration ³	Method ⁴	Primary ^{3,5}	Secondary ^{3,6}	Method ⁷
Ozone (O ₃)	1-Hour	0.09 ppm (180 µg/m ³)	Ultraviolet Photometry	--	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.07 ppm (137 µg/m ³)		0.08 ppm (157 µg/m ³) ⁸		
Respirable Particulate Matter (PM ₁₀)	24-Hour	50 µg/m ³	Gravimetric or Beta Attenuation	150 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m ³		50 µg/m ³		
Fine Particulate Matter (PM _{2.5})	24-Hour	No Separate State Standard		65 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m ³	Gravimetric or Beta Attenuation	15 µg/m ³		
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m ³)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m ³)	None	Non-Dispersive Infrared Photometry (NDIR)
	1-Hour	20 ppm (23 mg/m ³)		35 ppm (40 mg/m ³)		
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m ³)		--		
Nitrogen Dioxide (NO ₂)	Annual Arithmetic Mean	--	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m ³)	Same as Primary Standard	Gas Phase Chemiluminescence
	1-Hour	0.25 ppm (470 µg/m ³)		--		
Sulfur Dioxide (SO ₂)	Annual Arithmetic Mean	--	Ultraviolet Fluorescence	0.030 ppm (80 µg/m ³)	--	Spectrophotometry (Pararosaniline Method)
	24-Hour	0.04 ppm (105 µg/m ³)		0.14 ppm (365 µg/m ³)	--	
	3-Hour	--		--	0.5 ppm (1300 µg/m ³)	
	1-Hour	0.25 ppm (655 µg/m ³)		--	--	
Lead ⁹ (Pb)	30 Day Average	1.5 µg/m ³	Atomic Absorption	--	--	High-Volume Sampler and Atomic Absorption
	Calendar Quarter	--		1.5 µg/m ³	Same as Primary Standard	
Visibility Reducing Particles	8-Hour	Extinction coefficient of 0.23 per kilometer - visibility of ten miles or more (0.07-30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		No Federal Standards		
Sulfates	24-Hour	25 µg/m ³	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m ³)	Ultraviolet Fluorescence			
Vinyl Chloride ⁹	24-Hour	0.01 ppm (26 µg/m ³)	Gas Chromatography			

Source: ARB, May 17, 2006.

Footnotes:

- ¹ California standards for ozone; carbon monoxide (except Lake Tahoe); sulfur dioxide (1 and 24 hour); nitrogen dioxide; suspended particulate matter - PM₁₀, PM_{2.5}, 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.
- ² National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM₁₀, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. 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 EPA for further clarification and current federal policies.
- ³ Concentration 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 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
- ⁴ Any equivalent procedure that can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
- ⁵ National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
- ⁶ National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
- ⁷ Reference method as described by the EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the EPA.
- ⁸ New federal eight-hour ozone and fine particulate matter standards were promulgated by EPA on July 18, 1997. Contact EPA for further clarification and current federal policies.
- ⁹ The ARB has identified lead and vinyl chloride as ‘toxic air contaminants’ with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Table 4.2.B: Health Effects Summary of Some of the Common Pollutants Found in Air

Pollutants	Sources	Primary Effects
Carbon Monoxide (CO)	<ul style="list-style-type: none"> • Incomplete combustion of fuels and other carbon-containing substances, such as motor exhaust. • Natural events, such as decomposition of organic matter. 	<ul style="list-style-type: none"> • Reduced tolerance for exercise. • Impairment of mental function. • Impairment of fetal development. • Death at high levels of exposure. • Aggravation of some heart diseases (angina).
Nitrogen Dioxide (NO ₂)	<ul style="list-style-type: none"> • Motor vehicle exhaust. • High temperature stationary combustion. • Atmospheric reactions. 	<ul style="list-style-type: none"> • Aggravation of respiratory illness. • Reduced visibility. • Reduced plant growth. • Formation of acid rain.
Ozone (O ₃)	<ul style="list-style-type: none"> • Atmospheric reaction of organic gases with nitrogen oxides in sunlight. 	<ul style="list-style-type: none"> • Aggravation of respiratory and cardiovascular diseases. • Irritation of eyes. • Impairment of cardiopulmonary function. • Plant leaf injury.
Lead (Pb)	<ul style="list-style-type: none"> • Contaminated soil. 	<ul style="list-style-type: none"> • Impairment of blood function and nerve construction. • Behavioral and hearing problems in children.
Sulfur Dioxide (SO ₂)	<ul style="list-style-type: none"> • Combustion of sulfur-containing fossil fuels. • Smelting of sulfur-bearing metal ores. • Industrial processes. 	<ul style="list-style-type: none"> • Aggravation of respiratory diseases (asthma, emphysema). • Reduced lung function. • Irritation of eyes. • Reduced visibility. • Plant injury. • Deterioration of metals, textiles, leather, finishes, coatings, etc.
Suspended Particulate Matter (PM _{2.5} and PM ₁₀)	<ul style="list-style-type: none"> • Stationary combustion of solid fuels. • Construction activities. • Industrial processes. • Atmospheric chemical reactions. 	<ul style="list-style-type: none"> • Reduced lung function. • Aggravation of the effects of gaseous pollutants. • Aggravation of respiratory and cardiorespiratory diseases. • Increased cough and chest discomfort. • Soiling. • Reduced visibility.

Source: ARB, 2005.

Climate/Meteorology. Air pollution is directly related to a region’s topographic features. The SJVAB is defined by the Sierra Nevada mountains in the east (8,000–14,000 feet in elevation), the Coast Range in the west (averaging 3,000 feet in elevation), and the Tehachapi Mountains in the south (6,000–8,000 feet in elevation). The valley is basically flat with a slight downward gradient to the northwest. The valley opens to the sea at the Carquinez Strait, where the Sacramento-San Joaquin Delta empties into San Francisco Bay. Thus, the San Joaquin Valley (SJV) could be considered a “bowl” open only to the north.

Although marine air generally flows into the basin from the San Joaquin River delta, the region’s topographic features restrict air movement through and out of the basin. The Coast Range hinders wind access into the SJV from the west, the Tehachapis prevent southerly passage of air, and the high

Sierra Nevada range is a significant barrier to the east. These topographic features result in weak air flow, which becomes blocked vertically by high barometric pressure over the SJV. As a result, the SJVAB is susceptible to pollutant accumulation over time. Most of the surrounding mountains are above the normal height of summer inversion layers (1,500–3,000 feet).

During the summer, wind speed and direction data indicate that wind usually originates at the north end of the SJV, through Tehachapi Pass, into the SJVAB. During the winter, wind speed and direction data indicate that wind occasionally originates in the south end of the SJV and flows in a north-northwesterly direction. Also during the winter months, the SJV experiences light, variable winds of less than 10 mph. Low wind speeds combined with low inversion layers in the winter create a climate conducive to high CO and PM₁₀ concentrations.

The climatological station monitoring temperature closest to the project site is the Stockton station¹. The monthly average temperature recorded at the Stockton station for the last 40 years ranges from 45.6°F in January to 77.3°F in July. January is typically the coldest month in this area. The Stockton monitoring station also records precipitation throughout the year. Average rainfall measured for the last 40 years varied from 2.85 inches in January to 0.73 inch or less between May and October, with an average annual total of 14.00 inches. Patterns in monthly and yearly rainfall totals are unpredictable due to fluctuations in the weather.

Air Pollution Constituents and Attainment Status. The following describes the six criteria air pollutants and their attainment status in the Basin based on ARB's Area Designations (Activities and Maps) (<http://www.arb.ca.gov/desig/desig.htm>). ARB provided the Environmental Protection Agency (EPA) with California's recommendations for eight-hour ozone area designations on July 15, 2003. The recommendations and supporting data were an update to a report submitted to the EPA in July 2000. On December 3, 2003, the EPA published its proposed designations. EPA's proposal differs from the State's recommendations primarily on the appropriate boundaries for several nonattainment areas. ARB responded to the EPA's proposal on February 4, 2004. EPA finalized the eight-hour ozone designations in April 2004.

The EPA issued the final PM_{2.5} implementation rule in fall 2004 and issued the final designations on December 14, 2004.

The SJVAPCD, together with ARB, maintains ambient air quality monitoring stations in the San Joaquin area. The attainment status in the San Joaquin area of the SJVAB is shown in Table 4.2.C.

¹ Western Regional Climatic Center, 2006.

Table 4.2.C: Attainment Status in the San Joaquin Valley Air Basin

Emissions	State	Federal
Ozone: 1-hour	Severe Nonattainment	No Federal Standard
Ozone: 8-hour	Not Established	Serious Nonattainment
PM ₁₀	Nonattainment	Serious Nonattainment
PM _{2.5}	Nonattainment	Nonattainment
CO	Attainment	Attainment/Unclassified
NO ₂	Attainment	Attainment/Unclassified
SO ₂	Attainment	Unclassified
All others	Attainment/Unclassified	Attainment/Unclassified

Source: ARB, May 2006.

Ozone. O₃ (smog) is formed by photochemical reactions between NO_x and reactive organic gases (ROG) rather than being directly emitted. O₃ is a pungent, colorless gas typical of Southern California smog. Elevated O₃ concentrations result in reduced lung function, particularly during vigorous physical activity. This health problem is particularly acute in sensitive receptors such as the sick, the elderly, and young children. O₃ levels peak during summer and early fall. The SJVAPCD requested an extreme (from severe) nonattainment designation for the federal one-hour ozone standard for the SJVAB. The EPA approved the redesignation of the federal ozone attainment status to extreme in April 2004. The approval of the redesignation reduces the emissions cap for major sources from 25 to 10 tons per year. However, it will push the attainment date from 2005 to 2010, thereby avoiding any penalty fees associated with a nonconforming status. Effective June 15, 2005, the EPA revoked in full the federal 1-hour ozone ambient air quality standard, including associated designations and classifications, in all areas except 14 early action compact areas that do not include the SJVAB.

Carbon Monoxide. CO is formed by the incomplete combustion of fossil fuels, almost entirely from automobiles. It is a colorless, odorless gas that can cause dizziness, fatigue, and impairments to central nervous system functions. The San Joaquin area is designated as attainment/unclassified for federal CO standards and attainment for State CO standards.

Nitrogen Oxides. NO₂, a reddish brown gas, and nitric oxide (NO), a colorless, odorless gas, are formed from fuel combustion under high temperature or pressure. These compounds are referred to as nitrogen oxides, or NO_x. NO_x is a primary component of the photochemical smog reaction. It also contributes to other pollution problems, including a high concentration of fine particulate matter, poor visibility, and acid deposition (i.e., acid rain). NO₂ decreases lung function and may reduce resistance to infection. The entire Basin is designated as attainment/unclassified under federal standards and attainment under State standards.

Sulfur Dioxide. SO₂ is a colorless, irritating gas formed primarily from incomplete combustion of fuels containing sulfur. Industrial facilities also contribute to gaseous SO₂ levels. SO₂ irritates the respiratory tract, can injure lung tissue when combined with fine particulate matter, and reduces visibility and the level of sunlight. The San Joaquin area is designated as unclassified for federal CO standards and attainment for State SO₂ standards.

Lead. Lead is found in old paints and coatings, plumbing, and a variety of other materials. Once in the bloodstream, lead can cause damage to the brain, nervous system, and other body systems. Children are highly susceptible to the effects of lead. The entire Basin is in attainment for federal and State lead standards.

Particulate Matter. Particulate matter is the term used for a mixture of solid particles and liquid droplets found in the air. Coarse particles, PM₁₀, derive from a variety of sources, including windblown dust and grinding operations. Fuel combustion and resultant exhaust from power plants and diesel buses and trucks are primarily responsible for fine particle, PM_{2.5}, levels. Fine particles can also be formed in the atmosphere through chemical reactions. PM₁₀ can accumulate in the respiratory system and aggravate health problems such as asthma. The EPA's scientific review concluded that PM_{2.5}, which penetrates deeply into the lungs, is more likely than PM₁₀ to contribute to the health effects listed in a number of recently published community epidemiological studies at concentrations that extend well below those allowed by current PM₁₀ standards. These health effects include premature death and increased hospital admissions and emergency room visits (primarily the elderly and individuals with cardiopulmonary disease); increased respiratory symptoms and disease (children and individuals with cardiopulmonary disease such as asthma); decreased lung functions (particularly in children and individuals with asthma); and alterations in lung tissue and structure and in respiratory tract defense mechanisms. The entire Basin is a nonattainment area for federal and State PM₁₀ and PM_{2.5} standards.

Local Air Quality

The SJVAPCD, together with the ARB, maintains ambient air quality monitoring stations in the Basin. The air quality monitoring station closest to the site is the Stockton-Hazleton Station, and its air quality trends are representative of the ambient air quality in the project area. The pollutants monitored are CO, O₃, PM₁₀, PM_{2.5}, and NO₂.¹

The ambient air quality data in Tables 4.2.D and 4.2.E show that CO and NO₂ levels are well below relevant State and federal standards. PM_{2.5} levels were consistently lower than standards. O₃ and PM₁₀ levels occasionally exceeded State and federal standards during the last three years. Also shown in Table 4.2.E, SO₂ levels are not monitored in the San Joaquin Basin.

Climate Change/Global Warming

Global climate change is a problem caused by combined worldwide greenhouse gas emissions, and mitigating global climate change will require worldwide solutions. Combined gases in the Earth's atmosphere called atmospheric greenhouse gases (GHGs) play a critical role in the Earth's radiation budget by trapping infrared radiation emitted from the Earth's surface, which could have otherwise escaped to space. Prominent GHGs contributing to this process include water vapor, carbon dioxide, methane, ozone, nitrous oxide, and certain fluorocarbons. This phenomenon, known as "greenhouse effect," keeps the Earth's atmosphere near the surface warmer than it would be otherwise and allows for successful habitation by humans and other forms of life. Increases in these gases lead to more

¹ Air quality data, 2002–2004; EPA and ARB Web sites.

absorption of radiation and warm the lower atmosphere further, thereby increasing evaporation rates and temperatures near the surface. Emissions of the GHGs in excess of natural ambient concentrations are thought to be responsible for the enhancement of the greenhouse effect and to contribute to what is termed “global warming,” a trend of unnatural warming of the Earth’s natural climate.

Climate change is a global problem, and GHGs are global pollutants, unlike criteria air pollutants (such as ozone precursors) and TACs, which are pollutants of regional and local concern. Worldwide, California is the 12th to 16th largest emitter of carbon dioxide (California Energy Commission 2006) and is responsible for approximately 2% of the world’s carbon dioxide emissions (California Energy Commission 2006).

The Intergovernmental Panel on Climate Change (IPCC) has been established by the World Meteorological Organization and United Nations Environment Program to assess scientific, technical, and socioeconomic information relevant for the understanding of climate change, its potential impacts, and options for adaptation and mitigation. The IPCC predicts substantial increases in temperatures globally of between 1.1 and 6.4 degrees Celsius (depending on the scenario).

This may affect the natural environment in California in the following ways, among others:

- rising sea levels along the California coastline, particularly in San Francisco and the San Joaquin Delta due to ocean expansion;
- extreme-heat conditions, such as heat waves and very high temperatures, which could last longer and become more frequent;
- an increase in heat-related human deaths, infectious diseases, and a higher risk of respiratory problems caused deteriorating air quality;
- reduced snowpack and stream flow in the Sierra Nevada mountains, affecting winter recreation and water supplies;
- potential increase in the severity of winter storms, affecting peak stream flows and flooding;
- changes in growing season conditions that could affect California agriculture, causing variations in crop quality and yield; and
- changes in distribution of plant and wildlife species due to change in temperature, competition from colonizing species, change in hydrologic cycles, changes in sea levels, and other climate-related effects

These changes in California’s climate and ecosystems are occurring at a time when California’s population is expected to increase from 34 million to 59 million by the year 2040 (California Energy Commission 2005). As such, the numbers of people potentially affected by climate change as well as the amount of anthropogenic GHG emissions expected under a “business as usual” scenario are expected to increase. Similar changes as those noted above for California would also occur in other parts of the world with regional variations in resources affected and vulnerability to adverse side effects.

GHG emissions in California are attributable to human activities associated with industrial/manufacturing, utilities, transportation, residential, and agricultural sectors (California Energy

Commission 2006) as well as natural processes. Transportation is responsible for 41% of the state's GHG emissions, followed by the industrial section (23%), electricity generation (20%), agriculture and forestry (8%), and other sources (8%). Emissions of carbon dioxide and nitrous oxide are byproducts of fossil fuel combustion, among other sources. Methane, a highly potent GHG, results from off-gassing associated with agricultural practices and landfills, among other sources. Sinks of carbon dioxide include uptake by vegetation and dissolution into the ocean.

Table 4.2.D: Ambient Air Quality at the Stockton-Hazelton Air Monitoring Station

Pollutant	Standard	2005	2004	2003
Carbon Monoxide (CO)				
Maximum 1 hr concentration (ppm)		3.2	3.7	5.8
Number of days exceeded:	State: > 20 ppm	0	0	0
	Federal: > 35 ppm	0	0	0
Maximum 8 hr concentration (ppm)		2.7	2.5	3.1
Number of days exceeded:	State: ≥ 9.0 ppm	0	0	0
	Federal: ≥ 9 ppm	0	0	0
Ozone (O₃)				
Maximum 1 hr concentration (ppm)		0.099	0.096	0.104
Number of days exceeded:	State: > 0.09 ppm	3	1	3
	Federal: > 0.08 ppm	1	0	1
Maximum 8 hr concentration (ppm)		0.086	0.080	0.088
Number of days exceeded:	State: > 0.07 ppm	ND	ND	ND
	Federal: > 0.08 ppm	1	0	1
Coarse Particulates (PM₁₀)				
Maximum 24 hr concentration (μg/m ³)		79.0	60.0	88.0
Number of days exceeded:	State: > 50 μg/m ³	8	3	3
	Federal: > 150 μg/m ³	0	0	0
Annual arithmetic average concentration (μg/m ³)		29.8	29.4	28.4
Exceeded for the year:	State: > 20 μg/m ³	Yes	Yes	Yes
	Federal: > 50 μg/m ³	No	No	No
Fine Particulates (PM_{2.5})				
Maximum 24 hr concentration (μg/m ³)		44.0	41.0	45.0
Number of days exceeded:	Federal: > 65 μg/m ³	0	0	0
Annual arithmetic average concentration (μg/m ³)		10.6	13.2	13.6
Exceeded for the year:	State: > 12 μg/m ³	No	Yes	Yes
	Federal: > 15 μg/m ³	No	No	No
Nitrogen Dioxide (NO₂)				
Maximum 1 hr concentration (ppm)		0.087	0.079	0.088
Number of days exceeded:	State: > 0.25 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.017	0.017	0.018
Exceeded for the year:	Federal: > 0.053 ppm	No	No	No
Sulfur Dioxide (SO₂) (Bethel Island, Contra Costa)				
Maximum 1 hr concentration (ppm)		0.017	0.015	0.016
Number of days exceeded:	State: > 0.25 ppm	0	0	0
Maximum 3 hr concentration (ppm)		0.010	0.009	0.013
Number of days exceeded:	Federal: > 0.5 ppm	0	0	0
Maximum 24 hr concentration (ppm)		0.006	0.006	0.006
Number of days exceeded:	State: > 0.04 ppm	0	0	0
	Federal: > 0.14 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.002	0.002	0.002
Exceeded for the year:	Federal: > 0.030 ppm	No	No	No

Source: ARB and EPA Web sites.

ppm = parts per million

μg/m³ = micrograms per cubic meter

ND = No data available

Regulatory Settings

Federal Regulations/Standards

Pursuant to the federal Clean Air Act (CAA) of 1970, the EPA established national ambient air quality standards (NAAQS) for six major pollutants, termed “criteria” pollutants. Criteria pollutants are defined as those pollutants for which the federal and State governments have established AAQS, or criteria, for outdoor concentrations in order to protect public health.

Data collected at permanent monitoring stations are used by the EPA to classify regions as “attainment” or “nonattainment,” depending on whether the regions met the requirements stated in the primary NAAQS. Nonattainment areas have additional restrictions as required by the EPA.

The San Joaquin Valley is a single air quality nonattainment area containing six metropolitan planning organizations (MPOs) and two rural transportation-planning agencies (TPAs) that conduct transportation planning activities within the Valley. The EPA has designated the San Joaquin Council of Governments (SJCOG) as the MPO responsible for ensuring the area’s compliance with the CAA.

The EPA established new national air quality standards for ground-level O₃ and PM_{2.5} matter in 1997. On May 14, 1999, the Court of Appeals for the District of Columbia Circuit issued a decision ruling that the CAA, as applied in setting the new public health standards for O₃ and particulate matter, was unconstitutional as an improper delegation of legislative authority to the EPA. On February 27, 2001, the U.S. Supreme Court upheld the way the government sets air quality standards under the CAA. The court unanimously rejected industry arguments that the EPA must consider financial cost as well as health benefits in writing standards. The justices also rejected arguments that the EPA took lawmaking power from Congress when it set tougher standards for O₃ and particulate matter in 1997. Nevertheless, the court threw out the EPA’s policy for implementing new O₃ rules, saying that the agency ignored a section of the law that restricts its authority to enforce such rules.

In April 2003, the EPA was cleared by the White House Office of Management and Budget (OMB) to implement the eight-hour ground-level O₃ standard. The EPA issued the proposed rule implementing the eight-hour O₃ standard in April 2003. The EPA completed final eight-hour nonattainment status on April 15, 2004 and revoked the one-hour standard on June 15, 2005.

The EPA issued the final PM_{2.5} implementation rule in fall 2004. The EPA issued final designations on December 14, 2004.

State Regulations/Standards

The State of California began to set California ambient air quality standards (CAAQS) in 1969 under the mandate of the Mulford-Carrell Act. The CAAQS are generally more stringent than the NAAQS. In addition to the six criteria pollutants covered by the NAAQS, there are CAAQS for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles. These standards are also listed in Table 4.2.A.

Originally, there were no attainment deadlines for CAAQS. However, the CCAA of 1988 provided a time frame and a planning structure to promote their attainment. The CCAA required nonattainment areas in the State to prepare attainment plans and proposed to classify each such area on the basis of the submitted plan, as follows: moderate, if CAAQS attainment could not occur before December 31, 1994; serious, if CAAQS attainment could not occur before December 31, 1997; and severe, if CAAQS attainment could not be conclusively demonstrated at all.

The attainment plans require a minimum 5 percent annual reduction in the emissions of nonattainment pollutants unless all feasible measures have been implemented. The San Joaquin County area of the SJVAB is currently classified as a nonattainment area for three criteria pollutants: O₃, PM₁₀, and PM_{2.5}.

Regional Air Quality Planning Framework

The 1976 Lewis Air Quality Management Act established the SJVAPCD and other air districts throughout the State. The federal CAA Amendments of 1977 required that each state adopt an implementation plan outlining pollution control measures to attain the federal standards in nonattainment areas of the state.

The ARB coordinates and oversees both State and federal air pollution control programs in California. It oversees activities of local air quality management agencies and is responsible for incorporating air quality management plans for local air basins into a State Implementation Plan (SIP) for EPA approval. The ARB maintains air quality monitoring stations throughout the State in conjunction with local air districts. Data collected at these stations are used by the ARB to classify air basins as “attainment” or “nonattainment” with respect to each pollutant and to monitor progress in attaining air quality standards. The ARB has divided the State into 15 air basins. Significant authority for air quality control within them has been given to local air districts that regulate stationary source emissions and develop local nonattainment plans.

The California Clean Air Act (CCAA) provides the SJVAPCD with the authority to manage transportation activities at indirect sources and regulate stationary source emissions. Indirect sources of pollution are generated when minor sources collectively emit a substantial amount of pollution. An example of this would be the motor vehicles at an intersection, a mall, and on highways. As a State agency, the ARB regulates motor vehicles and fuels for their emissions.

Regional Air Quality Management Plan (AQMP)

The SJVAPCD has adopted several attainment plans to achieve State and federal air quality standards to comply with CCAA and federal Clean Air Act Amendments (FCAAA) requirements. The SJVAPCD must continuously monitor its progress in implementing attainment plans and must periodically report to the ARB and the EPA. It must also periodically revise its attainment plans to reflect new conditions and requirements in accordance with schedules mandated by the CCAA and FCAAA.

The CCAA requires districts to adopt air quality attainment plans and to review and revise their plans to address deficiencies in interim measures of progress once every three years. The SJVAPCD's AQMP was adopted in 1991 and was most recently updated in 2001.

To meet FCAA and CCAA requirements, the SJVAPCD has submitted numerous plans for attaining ozone, PM₁₀, and CO standards. The ozone plan projected attainment of the federal ozone standard by 1999, but did not achieve its goal. The SJVAPCD is in the process of preparing a draft ozone plan and has requested a redesignation of extreme nonattainment status for the federal one-hour ozone standard. The CO plan demonstrates that CO attainment has already been reached. The PM₁₀ attainment plan sets forth the approach the SJVAPCD will use to attain the NAAQS for PM₁₀. The SJVAPCD Governing Board adopted a 2003 PM₁₀ plan in June 2003 and forwarded it to the ARB. The ARB adopted the plan in June 2003 and forwarded it to the EPA. The EPA found the plan complete in August 2003 and finalized approval of the 2003 PM₁₀ plan in April 2004.

SJVAPCD Rules

The SJVAPCD has developed several rules and regulations that would apply to the proposed project. These rules have been established to help the SJV meet attainment standards.

Rule 4102 - Nuisance. This rule applies to any operation that emits or may emit air contaminants or other materials and could apply to the proposed project during construction. The rule states that a person shall not discharge from any source whatsoever such quantities of air contaminants or other materials which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health or safety of any such person or the public or which cause or have a natural tendency to cause injury or damage to business or property.

Rule 4601 - Architectural Coatings. This rule limits volatile organic compounds from architectural coatings by specifying architectural coatings storage, clean up and labeling requirements and applies to any person who supplies, sells, offers for sale, applies, or solicits the application of any architectural coating.

Rule 4641 - Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations. If asphalt paving will be used, then paving operations of this project will be subject to Rule 4641. This rule applies to the manufacture and use of cutback asphalt, slow cure asphalt and emulsified asphalt for paving and maintenance operations.

Rule 4901 - Wood Burning Fireplaces and Wood Burning Heaters. This rule limits PM₁₀ and PM_{2.5} emissions from residential development. Construction plans for residential developments would be affected by section 5.3.1 which says that no person shall install a wood burning fireplace in a new residential development with a density of greater than two (2) dwelling units per acre.

Rule 9510 - Indirect Source Review. This rule reduces the impacts of development by requiring a reduction in emissions from all new development in the San Joaquin Valley. Rule 9510 would require the project applicant to provide information that enables the SJVAPCD to quantify construction, area and operational emissions. Rule 9510 requires construction exhaust emissions to be reduced by 20 percent for NO_x and 45 percent for PM₁₀ when compared to the statewide fleet average or to pay an

in lieu mitigation fee. An application fee must be filed with the SJVAPQD no later than concurrent with application with a local agency for the final discretionary approval.

Methodology

Thresholds of Significance

A project would normally be considered to have a significant effect on air quality if the project would conflict with or obstruct implementation of the applicable air quality plan; violate any air quality standards or contribute substantially to an existing or projected air quality violation; result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors); expose sensitive receptors to substantial pollutant concentrations; or create objectionable odors affecting a substantial number of people (Guidelines for the implementation of the California Environmental Quality Act, Appendix G, Public Resources Code §15000–15387).

In addition to the federal and State AAQS, as listed in Table 4.2.A, there are annual emissions thresholds for operation of a proposed project in the SJVAB. The SJVAB is administered by the SJVAPCD, and guidelines and emissions thresholds established by the SJVAPCD in its Guide for Assessing and Mitigating Air Quality Impacts (SJVAPCD, adopted August 1998 and revised January 10, 2002) are used in this analysis.

SJVAPCD also requires evaluation of cumulative air quality impacts. CEQA defines cumulative impacts as two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. Cumulative impacts can result from individually minor, but collectively significant, projects. An adequate cumulative impact analysis considers a project over time and in conjunction with other related past, present, and reasonably foreseeable future projects whose impacts might compound or interrelate with those of the project being assessed.

Emissions associated with stationary sources related to the proposed project are expected to be negligible and therefore have not been analyzed.

Thresholds of Significance for Construction Emissions

A project's construction phase produces many types of emissions, but PM₁₀ is the pollutant of greatest concern. Rather than provide a quantitative significance threshold for PM₁₀, the SJVAPCD has determined that a project's impacts will be less than significant if the project complies with certain mitigation measures. Accordingly, the SJVAPCD has determined that compliance with Regulation VIII for all sites and implementation of all other control measures indicated in Tables 4.2.E and 4.2.F below (as appropriate, depending on the size and location of the project site) will constitute sufficient mitigation to reduce PM₁₀ impacts to a level considered less than significant.

The control measures listed in Table 4.2.E (Regulation VIII Control Measures) are required for all construction sites by regulation. Table 4.2.F lists additional measures that may be required due to

sheer project size or proximity of the project to sensitive receptors. Table 4.2.F also lists additional control measures (Optional Measures) that may be implemented if further emissions reductions are deemed necessary by the Lead Agency.

Table 4.2.E: Regulation VIII Control Measures for Construction Emissions of PM₁₀

Regulation VIII Control Measures. The following controls are required to be implemented at all construction sites. (Includes changes effective May 15, 2002)
All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover 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 chemical stabilizer/suppressant.
All land clearing, grubbing, scraping, excavation, land leveling, grading, cut & fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.
With the demolition of buildings up to six stories in height, all exterior surfaces of the building shall be wetted during demolition.
When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained.
All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions.) (Use of blower devices is expressly forbidden.)
Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.
Within urban areas, trackouts shall be immediately removed when they extend 50 or more feet from the site, and at the end of each workday.
Any site with 150 or more vehicle trips per day shall prevent carryout and trackout.

Source: SJVAPCD, January 2002.

Table 4.2.F: Enhanced and Additional Control Measures for Construction Emissions of PM₁₀

<p>Enhanced Control Measures. The following measures should be implemented at construction sites when required to mitigate significant PM₁₀ impacts (note, these measures are to be implemented in addition to Regulation VIII requirements):</p>
<p>Limit traffic speeds on unpaved roads to 15 mph; and</p> <p>Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.</p>
<p>Additional Control Measures. The following control measures are strongly encouraged at construction sites that are large in area, located near sensitive receptors, or which for other reason warrant additional emissions reductions:</p>
<p>Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site;</p> <p>Install wind breaks at windward side(s) of construction areas;</p> <p>Suspend excavation and grading activity when winds exceed 20 mph; and*</p> <p>Limit area subject to excavation, grading, and other construction activity at any one time.</p> <p style="padding-left: 40px;">*Regardless of windspeed, an owner/operator must comply with Regulation VIII's 20 percent opacity limitation.</p>

Source: SJVAPCD, January 2002.

The SJVAPCD recognizes that the measures listed in Tables 4.2.E and 4.2.F focus on PM₁₀ emissions from fugitive dust sources. It indicates that Lead Agencies seeking to reduce emissions from construction equipment exhaust should also consider the measures listed in Table 4.2.G. The SJVAPCD recognizes that these measures are difficult to implement due to poor availability of alternative fueled equipment and the challenge of monitoring these activities.

Table 4.2.G: Construction Equipment Reduction Measures

Emissions Source	Measures
<p>Heavy duty equipment (scrapers, graders, trenchers, earth movers, etc.)</p>	<p>Use of alternative fueled equipment or catalyst equipped diesel construction equipment.</p> <p>Minimize idling time (e.g., 10 minutes maximum)</p> <p>Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use</p> <p>Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set)</p> <p>Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways</p>

	Implement activity management (e.g., rescheduling activities to reduce short-term impacts)
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Source: SJVAPCD, January 2002.

4.2.2 Impact Significance Criteria

State CEQA Guidelines state that a project would normally have a significant adverse air quality impact if project-generated pollutant emissions would:

AQ-a: Cause a violation of an ambient air quality standard or worsen an existing violation;

AQ-b: Contribute substantially to an existing or projected air quality violation;

AQ-c: Expose sensitive receptors to substantial pollutant concentrations;

AQ-d: Conflict with adopted environmental plans, policies, or regulations for air pollutants

AQ-e: Exceed odor thresholds: or

AQ-f: Exceed threshold for Hazardous Air Pollutants

Thresholds of Significance for Operational

The term “project operations” refers to the full range of activities that can or may generate pollutant emissions when the development is functioning in its intended use. Ozone precursor emissions from project operations should be compared to the following thresholds:

Ozone Precursor Thresholds

- 10 tons per year of ROG
- 10 tons per year of NOX

Projects with operation related emissions that exceed any of the above listed emissions thresholds are considered significant.

Local Carbon Monoxide Concentrations Thresholds

- California State one hour CO standard of 20.0 ppm
- California State eight hour CO standard of 9.0 ppm

Projects that would result in CO concentrations exceeding the above standards are considered significant.

Odor Impacts Threshold

Any project with the potential to frequently expose members of the public to objectionable odors will be deemed to have a significant impact.

Hazardous Air Pollutants (HAPs)

The definition of substantial pollutant concentrations varies for pollutants without defined significance standards or air contaminants not covered by the standard criteria cited above. With regard to hazardous air pollutants, also known as toxic air contaminants (TAC), "substantial" is taken to mean that the individual cancer risk exceeds a threshold considered to be a prudent risk management level. If best-available control technology for toxics (T-BACT) has been applied, the individual cancer risk to the maximum exposed individual (MEI) must not exceed 10 in 1 million in order for an impact to be determined not to be significant.

Airborne impacts are also derived from materials considered to be a nuisance for which there may not be associated standards. Odors or the deposition of large-diameter dust particles outside of the PM₁₀ size range would be included in this category. It is considered a significant impact for odors and large-diameter dust particles if the SJVAPCD Nuisance Rule (#4102) would be potentially violated.

The following limits for maximum individual cancer risk (MICR), cancer burden, and noncancer acute and chronic hazard indices (HI) from project emissions of TACs have been established for the Basin:

MICR and Cancer Burden. MICR is the estimated probability of a potential MEI contracting cancer as a result of exposure to TACs over a period of 70 years for residential and 46 years for worker receptor locations. The MICR calculations include multipathway consideration, when applicable. Cancer Burden is the estimated increase in the occurrence of cancer cases in a population subject to a MICR of greater than or equal to one in one million (1.0×10^{-6}) resulting from exposure to TACs.

The cumulative increase in MICR that is the sum of the calculated MICR values for all TACs emitted from the project will not result in any of the following:

- An increased MICR greater than 10 in 1 million (1.0×10^{-5}) at any receptor location (assumes the project will be constructed with T-BACT)
- A cancer burden greater than 0.5

Chronic HI. This is the ratio of the estimated long-term level of exposure to a TAC for a potential MEI to its chronic reference exposure level. The chronic HI calculations include multipathway considerations, when applicable.

The cumulative increase in total chronic HI for any target organ system due to total emissions from the project will not exceed 1.0 at any receptor location.

Acute HI. This is the ratio of the estimated maximum one-hour concentration of a TAC for a potential MEI to its acute reference exposure level.

The cumulative increase in total acute HI for any target organ system due to total emissions from the project will not exceed 1.0 at any receptor location.

Accidental Release/Acutely Hazardous Air Emissions

The determination of significance for potential impacts from accidental release of acutely hazardous air pollutants should be made in consultation with local administering agency of the Risk Management Preventive Program. The County health department, Office of Emergency Services, or local fire department is usually the administering agency.

Evaluating Cumulative Air Quality Impacts

The SJVAPCD recommends the following procedures to evaluate potential cumulative air quality impacts:

- Evaluate cumulative ozone impacts
- Evaluate cumulative PM₁₀ impacts
- Evaluate cumulative CO impacts
- Evaluate cumulative HAP impacts

4.2.3 Impacts And Mitigation Measures

Effects Determined to Be Less Than Significant

Impact AIR-1: The project will not create short-term construction equipment exhaust-related impacts

Air pollutant emissions associated with the project would occur over the short-term from construction activities, such as fugitive dust from site preparation and grading and emissions from equipment exhaust. The SJVAPCD's approach to CEQA analyses of PM₁₀ impacts is to require implementation of effective and comprehensive control measures rather than detailed quantification of emissions. Because construction activities will incorporate all feasible mitigation measures, project-related construction emissions will be less than significant. Compliance with Regulation VIII and implementation of applicable control measures, indicated in Tables 4.2.E, 4.2.F and 4.2.G, will reduce PM₁₀ impacts to a level considered less than significant (Impact Significance Criteria AQ-a, AQ-b, AQ-c, and AQ-d). No additional measures are recommended.

Impact AIR-2: The project should not create objectionable odors.

Heavy-duty equipment in the project area during construction would emit odors. However, the construction activity would be short-term and would cease to occur after construction is completed. No other sources of objectionable odors have been identified for the proposed project (Significance Criterion AQ-e). No mitigation measures are recommended.

Impact AIR-3: The project should not create Hazardous Air Pollutants Impacts.

Despite great progress in air quality improvement, approximately 146 million people nationwide lived in counties with pollution levels above the national standards in 2002. Out of the 230 nonattainment areas identified during the 1990 Clean Air Act Amendment designation process, 124 areas remain under nonattainment status or designation today. In these nonattainment areas, however, the severity of air pollution episodes has decreased. Air quality in the San Joaquin Valley in the past 20 years has improved steadily, even with the tremendous increase in population and vehicles and other sources.

As shown in Table 4.2.B, long-term exposure to elevated levels of criteria pollutants could result in potential health effects. However, as stated in the thresholds of significance, emission thresholds established by the air district are used to manage total regional emissions within an air basin, based on the air basin attainment status for criteria pollutants. These emission thresholds were established for individual projects that would contribute to regional emissions and pollutant concentrations that may affect or delay the projected attainment target year for certain criteria pollutants.

Because of the conservative nature of the thresholds and the basin-wide context of individual project emissions, there is no direct correlation of a single project to localized health effects. One individual project having emissions exceeding a threshold does not necessarily result in adverse health effects for residents in the project vicinity. This condition is especially true when the criteria pollutants exceeding thresholds are those with regional effects, such as ozone precursors like NO_x and ROG.

Based on the above discussion, the potential for an individual project to significantly degrade regional air quality or contribute to significant health risk is small, even if the emission thresholds are exceeded by the project. Because of the overall improvement trend in air quality in the air basin, it is unlikely the regional air quality would worsen or health risk increase from the current condition due to emissions from an individual project.

The proposed project is not expected to generate any HAPs that would result in significant air quality impacts. Compliance with the City and SJVAPCD rules and regulations will ensure that no significant HAPs impacts will occur (Impact Significance Criteria AQ-f). No mitigation measures are recommended.

Accidental Release/Acutely Hazardous Air Emissions. The proposed project is not expected to result in any accidental release of acutely hazardous air emissions. Compliance with the City and SJVAPCD rules and regulations will ensure that no significant accidental release/acutely hazardous air emissions impacts will occur. No mitigation measures are recommended.

Projects, Criteria Pollutants And Public Health. Despite great progress in air quality improvements, approximately 146 million people nationwide lived in counties with pollution levels above the national standards in 2002. Out of the 230 nonattainment areas identified during the 1990 Clean Air Act Amendment designation process, 124 areas remain under nonattainment status or designation today. In these nonattainment areas, however, the severity of air pollution episodes have decreased. Air quality in the San Joaquin Valley in the past 20 years has improved steadily, even with the tremendous increase in population and vehicles and other sources.

As shown in Table 4.2.B, long-term exposure to elevated levels of criteria pollutants could result in potential health effects. However, as stated in the thresholds of significance, emission thresholds established by the air district are used to manage total regional emissions within an air basin, based on the air basin attainment status for criteria pollutants. These emission thresholds were established for individual projects that would contribute to regional emissions and pollutant concentrations that may affect or delay the projected attainment target year for certain criteria pollutants.

Potentially Significant Impacts

Impact AIR-4: The project may Conflict with adopted environmental plans, policies, or regulations for air pollutants.

The City of Stockton acknowledges that global warming and greenhouse gases are an emerging environmental concern being raised on statewide, national, and global levels. Regional, State, and federal agencies are developing strategies to control pollutant emissions that contribute to global warming. However, neither CEQA nor the CEQA Guidelines mention or provide any methodology for analysis of “greenhouse gases,” including CO₂, nor do they provide any significance thresholds. The air quality analysis in the DEIR follows all procedures and requirements of the California Environmental Quality Act (CEQA) and the SJVAPCD CEQA Guidelines.

In the absence of standardized criteria for determining the significance of a project’s contributions to global warming, the global warming analysis in this section determines the consistency of the project with greenhouse gas emission reduction strategies prepared by the California Environmental Protection Agency Climate Action Team. These strategies were identified pursuant to State Executive Order S-3-05 (announced on June 1, 2005), which sets greenhouse gas emission targets in California through 2050. In 2006, Assembly Bill 32 (AB 32), known as the California Global Warming Solutions Act of 2006, was signed into law. This bill establishes a comprehensive program of regulatory and market mechanisms to achieve real, quantifiable, cost-effective reductions of greenhouse gases (GHG). AB 32 appoints the ARB as the agency responsible for monitoring and reducing GH emission in the state of California. AB 32 requires that a list of emission reduction strategies be published to achieve the goals set out in AB 32. However, until those reduction strategies are published, emission reduction strategies to meet Executive Order S-3-05 will be relied upon. The substantial compliance of the project with these greenhouse gas emission reduction strategies would indicate that the project would have a less-than-significant effect on global warming.

Given the overwhelming scope of global climate change, it is not anticipated that a single development project would have an individually discernable effect on global climate change (i.e., that any increase in global temperature or sea level could be attributed to the emissions resulting from a single project). The project would provide housing for approximately 3,250 people, based on an average household size of 2.5 persons. Based on Department of Finance predictions for San Joaquin County, the County’s population is expected to climb from 567,798 in 2000 to 1,229,757 in the year 2030. The proposed project would support the housing demand required to meet the needs of future population in the region. The development of new energy efficient housing will help the State and region reduce total green house gas emissions over time.

While the project is certainly anticipated to release GHGs as a result of construction, it is impossible to discern whether the presence or absence of GHG emitted by the project would result in any altered conditions. The project will generate emissions of GHGs primarily in the form of vehicle exhaust and in the consumption of natural gas for heating. The emissions from vehicle exhaust are controlled by the State and federal governments and are outside the control of this project. Evaluation of any potential global warming effects resulting from the project, including modeling and gauging the impacts associated with an increase of trips or generation of new trips and the effect on the greenhouse effect or global warming, would be entirely speculative since no modeling protocol or significance criteria have been established.

The URBEMIS2007 model estimates CO₂ emissions, a major source of GHG. The proposed project would generate up to 98,439 lbs/day of CO₂. There are no federal, State, or local emissions thresholds established for GHGs such as CO₂. As a comparison, the entire State generated approximately 2.2 billion (2,197,992,329) lbs/day of CO₂ in 2004.

Thus, because no single project can result in a significant effect on global climate change, the project's individual impact is considered less than significant. Implementation of the following mitigation measures, as well as those in Section 4.2 and EN-1a through EN-1f, would help reduce GHG emission impacts and bring the project into significant compliance with GHG emission reduction measures identified by Cal/EPA in the State Executive Order S-3-05.

Mitigation Measure AIR-1: The following measures shall be incorporated into the design and operation of the proposed project;

- Energy-efficient design shall be provided for homes and buildings, including automated control systems for heating and air conditioning and energy efficiency beyond title 24 requirements, lighting controls and energy-efficient lighting in buildings, increased insulation beyond Title 24 requirements, and light-colored roof materials to reflect heat.
- Large canopy trees shall be carefully selected and located to protect buildings from energy-consuming environmental conditions and shade-paved areas. Trees shall be selected to shade 50% of paved areas within 15 years.
- Plant deciduous trees on the south- and west-facing sides of buildings.
- Plant trees adjacent to all sidewalks thirty foot on center and at a ratio of one tree for each parking space. Structural soil shall be used under paved areas to improve tree growth in locations where street trees are located or planned.
- The City shall implement measures to reduce the amount of vehicle traffic to and from the project area to further reduce air pollution in the valley. This could include provisions such as encouraging employees to rideshare or carpool to the project site, or incentives for employees to use alternative transportation.
- If transit service is available to the project site, improvements shall be made to encourage its use. If transit service is not currently available but is planned for the area in the future, easements shall be reserved to provide for future improvements. These include bus turnouts, loading areas, route signs, and shade structures. Pedestrian access shall be directed to the main entrance of the

project from existing or potential public transit stops, and appropriately designed sidewalks shall be provided. Such access shall consist of paved walkways or ramps and shall be physically separated from parking areas and vehicle access routes. Appropriations made to facilitate public or mass transit will help mitigate trips generated by the project.

- Sidewalks and bicycle paths shall be provided throughout as much of the project as possible and connect to any nearby open space areas, parks, schools, and commercial areas to encourage walking and bicycling. Connections to nearby public uses and commercial areas shall be made as direct as possible to promote walking for some trips. Sidewalks and bikeways shall be designed to separate pedestrian and bicycle pathways from vehicle paths. Sidewalks and bikeways shall be designed to accommodate and be appropriately sized for anticipated future pedestrian and bicycle use. Such pathways shall be easy to navigate and designed to facilitate pedestrian movement through the project and create a safe environment for all potential users from obstacles and automobiles. Pedestrian walkways shall be created to connect all buildings throughout the project. The walkways shall create a safe and inviting walking environment for people wishing to walk from one building to another. Walkways shall be installed to direct pedestrians from the street sidewalk to the buildings. Safe and convenient pathways shall be provided for pedestrian movement in large parking lots. Mid-block paths shall be installed to facilitate pedestrian movement through long blocks and cul-de-sacs. Sidewalks shall be designed for high visibility (brightly painted, different color of concrete, etc.) when crossing parking lots, streets, and similar vehicle paths. Pathways through the project shall be built in anticipation of future growth/development.
- Exits to adjoining streets shall be designed to reduce time to re-enter traffic from project site.
- Efficient interior circulation and pedestrian access within the project area and logical connection points for future development on the surrounding properties shall be provided.
- Measures shall be implemented to reduce the amount of vehicle traffic to and from the residential areas that further reduce air pollution in the SJVAB. This could include providing an information center for residents to coordinate carpooling.

The project applicant shall incorporate the following in building plans:

- A. Solar or low-emission water heaters shall be used with combined space/water heater units.
- B. Double-paned glass or window treatment for energy conservation shall be used in all exterior windows.
- C. Buildings shall be oriented north/south where feasible.

Implementation of the above mitigation measures will reduce Greenhouse Gas Emission impacts to a less than significant level and bring the project into substantial compliance with the various GHG emission reduction measures identified by Cal/EPA in the State Executive Order S-3-05 to reduce greenhouse gas emissions in residential development.

Impact AIR-5: Long-term air quality impacts with localized effects.

Long-term air emission impacts are those associated with project-related stationary and mobile sources. The proposed project would consist of residential uses. The stationary source emissions from this land use would come from its consumption of natural gas and electricity. Vehicular trips

associated with the proposed project would contribute to the congestion at intersections and along roadway segments in the project vicinity. The traffic study prepared for this project (Fehr & Peers, April 2006) determined the proposed project would generate a total of 11,020 daily vehicular trips. Using the ARB model URBEMIS2007, emissions associated with project-related vehicular trips were calculated and are included in Table 4.2.H. As shown, the project's emissions would exceed the SJVAPCD annual emissions thresholds. Therefore, the proposed project's impact is significant, and mitigation measures are required.

Table 4.2.H: Project Operational Emissions

Source	Pollutants (tons/year)				
	CO	ROG	NO _x	SO _x	PM ₁₀
Estimated Emissions					
Stationary sources:	61.7	26.2	3.7	0.2	9.1
Vehicular traffic:	159.9	14.1	24.8	0.2	31.4
Project total	221.6	40.3	28.6	0.4	40.5
SJVUAPCD threshold	None	10	10	None	None
Exceeds threshold?	No	Yes	Yes	No	No
Significant impact?	No	Yes	Yes	No	No

Source: LSA Associates, Inc., September 2007

Long-Term Microscale (CO Hot Spot) Analysis

Vehicular trips associated with the proposed project would contribute to congestion at intersections and along roadway segments in the project vicinity. Localized air quality effects would occur when emissions from vehicular traffic increase in local areas as a result of the proposed project. The primary mobile source pollutant of local concern is CO, which is a direct function of vehicle idling time and, thus, traffic flow conditions. CO transport is extremely limited; it disperses rapidly with distance from the source under normal meteorological conditions. However, under certain extreme meteorological conditions, CO concentrations proximate to a congested roadway or intersection may reach unhealthful levels affecting local sensitive receptors (residents, school children, the elderly, hospital patients, etc.). Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service or with extremely high traffic volumes. In areas with high ambient background CO concentration, modeling is recommended to determine a project's effect on local CO levels.

An assessment of project-related impacts on localized ambient air quality requires that future ambient air quality levels be projected. Existing CO concentrations in the immediate project vicinity are not available. Per EPA guidelines, the highest of the second-highest CO concentrations measured within the past three years were used as the background levels. At the Stockton-Hazelton Monitoring

Station, the background concentrations are 4.9 ppm for the one-hour period and 3.0 ppm for the eight-hour period.

The highest CO concentrations would occur during peak traffic hours; hence, CO impacts calculated under peak traffic conditions represent a worst-case analysis. Based on the same traffic impact analysis used for the long-term regional analysis above, CO hot spot analyses were conducted for existing and cumulative conditions. The impact on local carbon monoxide levels was assessed with the ARB-approved CALINE4 air quality model, which allows microscale CO concentrations to be estimated along roadway corridors or near intersections. This model is designed to identify localized concentrations of carbon monoxide, often termed “hot spots.” A brief discussion of input to the CALINE4 model follows. The analysis was performed for the worst-case wind angle and wind speed condition and is based upon the following assumptions:

- Selected modeling locations represent the intersections closest to the project site, with the highest project-related vehicle turning movements and the worst level of service deterioration.
- Twenty receptor locations with the possibility of extended outdoor exposure from 7 to 21 meters (approximately 23 to 69 feet) of the roadway centerline near intersections were modeled to determine CO concentrations.
- The calculations assume a meteorological condition of almost no wind (0.5 m/second), a suburban topographical condition between the source and receptor, and a mixing height of 1,000 m, representing a worst-case scenario for CO concentrations.
- CO concentrations are calculated for the one-hour averaging period and then compared to the one-hour standards. CO eight-hour averages are extrapolated using a persistence factor of 0.7 to predict the eight-hour concentration in an attainment area.
- Concentrations are given in parts per million (ppm) at each of the receptor locations.
- The “at-grade” link option with speed adjusted based on average cruise speed and number of vehicles per lane per hour was used rather than the “intersection” link selection in the CALINE4 model (Caltrans has suggested that the “intersection” link should not be used due to an inappropriate algorithm based on outdated vehicle distribution). Emissions factors from the EMFAC2002 model were used for the vehicle fleet.
- The highest level of the second-highest one-hour and eight-hour CO concentrations monitored at the Stockton-Hazleton Monitoring Station in the past three years were used as background concentrations (4.9 ppm for the one-hour CO and 3.0 ppm for the eight-hour CO). The “background” concentrations are then added to the model results for future with and without the proposed project conditions.

To determine the proposed project’s impact on the local air quality, the CO levels were modeled at four intersections along Eight Mile Road in the project area for the existing and future scenarios. These intersections represent the intersections with the highest project-related traffic volumes in the project area. Table 4.2.I lists the CO concentrations from existing (2005) traffic plus expected traffic from other approved projects in the vicinity compared to CO concentrations from additional traffic related to the proposed project. Note that with the proposed project the eight-hour CO standard is exceeded at Trinity Parkway and Eight Mile Road. This scenario will not occur because neither the other approved projects nor this proposed project will be operational immediately, but will instead

open over the next several years. As shown in Tables 4.2.J (2025 Without and With Project) and 4.2.K (2035 Without and With Project), none of the four intersections analyzed would exceed either the one-hour or eight-hour CO standard, even with higher traffic volumes. It is expected that due to technology improvements, emission factors (for vehicle exhaust) for future years would decrease. In addition, background concentrations in future years are anticipated to continue to decrease as the concerted effort to improve regional air quality progresses. Therefore, CO concentrations in the future years would generally be lower than existing conditions (Impact Significance Criteria AQ-a, AQ-b, and AQ-c).

Table 4.2.I: Existing (2005 CO Concentrations³) Plus Approved Projects Without and With Proposed Project

Intersection	Receptor Distance to Road Centerline (Meters)	Project Related Increase 1-hr/8-hr (ppm)	Without/With Project One-Hour CO Concentration (ppm)	Without/With Project Eight-Hour CO Concentration (ppm)	Exceeds State Standards ⁴	
					1-Hr	8-Hr
Primary Entrance & Eight Mile Road	14 / 14	0.7 / 0.5	6.1 / 6.8	3.8 / 4.3	No	No
	14 / 14	0.7 / 0.5	6.0 / 6.7	3.8 / 4.3	No	No
	14 / 14	0.7 / 0.5	5.8 / 6.5	3.6 / 4.1	No	No
	10 / 10	0.7 / 0.5	5.8 / 6.5	3.6 / 4.1	No	No
Secondary Entrance & Eight Mile Road	14 / 14	0.6 / 0.4	7.5 / 8.1	4.8 / 5.2	No	No
	14 / 14	0.5 / 0.3	7.4 / 7.9	4.8 / 5.1	No	No
	10 / 14	0.3 / 0.2	7.3 / 7.6	4.7 / 4.9	No	No
Mokelumne Circle & Eight Mile Road	7 / 10	0.2 / 0.2	7.2 / 7.4	4.6 / 4.8	No	No
	14 / 14	1.3 / 0.9	7.6 / 8.9	4.9 / 5.8	No	No
	14 / 14	1.0 / 0.7	7.5 / 8.5	4.8 / 5.5	No	No
	14 / 14	1.1 / 0.8	7.3 / 8.4	4.7 / 5.5	No	No
Trinity Parkway & Eight Mile Road	10 / 10	1.0 / 0.7	7.2 / 8.2	4.6 / 5.3	No	No
	17 / 17	0.8 / 0.6	13.5 / 14.3	9.0 / 9.6	No	Yes
	17 / 17	0.8 / 0.5	13.0 / 13.8	8.7 / 9.2	No	Yes
	14 / 14	1.1 / 0.8	11.9 / 13.0	7.9 / 8.7	No	No
	7 / 7	0.5 / 0.3	11.6 / 12.1	7.7 / 8.0	No	No

Source: LSA Associates, Inc., May 2006.

Table 4.2.J: 2025 CO Concentrations⁵ Without and With Proposed Project

Intersection	Receptor Distance to Road Centerline (Meters)	Project Related Increase 1-hr/8-hr (ppm)	Without/With Project One-Hour CO Concentration (ppm)	Without/With Project Eight-Hour CO Concentration (ppm)	Exceeds State Standards ⁶	
					1-Hr	8-Hr
Primary Entrance & Eight Mile Road	17 / 14	0.1 / 0.1	5.1 / 5.2	3.1 / 3.2	No	No
	17 / 14	0.1 / 0.1	5.1 / 5.2	3.1 / 3.2	No	No
	14 / 12	0.1 / 0.1	5.1 / 5.2	3.1 / 3.2	No	No
	10 / 10	0.0 / 0.0	5.1 / 5.1	3.1 / 3.1	No	No

3 Includes ambient one-hour concentration of 4.9 ppm and ambient eight-hour concentration of 3.0 ppm measured at the Stockton-Hazelton air quality monitoring station.

4 The State standard for one-hour CO concentrations is 20 ppm and for eight-hour CO concentrations is 9.0 ppm.

5 Includes ambient one-hour concentration of 4.9 ppm and ambient eight-hour concentration of 3.0 ppm measured at the Stockton-Hazelton air quality monitoring station.

6 The State standard for one-hour CO concentrations is 20 ppm and for eight-hour CO concentrations is 9.0 ppm.

Intersection	Receptor Distance to Road Centerline (Meters)	Project Related Increase 1-hr/8-hr (ppm)	Without/With Project One-Hour CO Concentration (ppm)	Without/With Project Eight-Hour CO Concentration (ppm)	Exceeds State Standards ⁶	
					1-Hr	8-Hr
Secondary Entrance & Eight Mile Road	21 / 14	0.1 / 0.1	5.1 / 5.2	3.1 / 3.2	No	No
	21 / 14	0.1 / 0.1	5.1 / 5.2	3.1 / 3.2	No	No
	21 / 12	0.1 / 0.1	5.1 / 5.2	3.1 / 3.2	No	No
	17 / 10	0.1 / 0.1	5.1 / 5.2	3.1 / 3.2	No	No
Mokelumne Circle & Eight Mile Road	14 / 14	0.1 / 0.1	5.5 / 5.6	3.4 / 3.5	No	No
	14 / 14	0.1 / 0.0	5.4 / 5.5	3.4 / 3.4	No	No
	12 / 12	0.1 / 0.0	5.4 / 5.5	3.4 / 3.4	No	No
	10 / 10	0.1 / 0.1	5.3 / 5.4	3.3 / 3.4	No	No
Trinity Parkway & Eight Mile Road	17 / 17	0.2 / 0.1	5.9 / 6.1	3.7 / 3.8	No	No
	17 / 17	0.1 / 0.1	5.9 / 6.0	3.7 / 3.8	No	No
	17 / 17	0.2 / 0.2	5.8 / 6.0	3.6 / 3.8	No	No
	17 / 14	0.2 / 0.1	5.7 / 5.9	3.6 / 3.7	No	No

Source: LSA Associates, Inc., May 2006.

Table 4.2.K: 2035 CO Concentrations⁷ Without and With Proposed Project

Intersection	Receptor Distance to Road Centerline (Meters)	Project Related Increase 1-hr/8-hr (ppm)	Without/With Project One-Hour CO Concentration (ppm)	Without/With Project Eight-Hour CO Concentration (ppm)	Exceeds State Standards ⁸	
					1-Hr	8-Hr
Primary Entrance & Eight Mile Road	17 / 17	0.1 / 0.1	5.3 / 5.4	3.3 / 3.4	No	No
	17 / 17	0.2 / 0.2	5.2 / 5.4	3.2 / 3.4	No	No
	15 / 17	0.1 / 0.1	5.2 / 5.3	3.2 / 3.3	No	No
	14 / 14	0.1 / 0.1	5.2 / 5.3	3.2 / 3.3	No	No
Secondary Entrance & Eight Mile Road	21 / 21	0.1 / 0.1	5.3 / 5.4	3.3 / 3.4	No	No
	21 / 21	0.1 / 0.1	5.3 / 5.4	3.3 / 3.4	No	No
	17 / 21	0.1 / 0.1	5.3 / 5.4	3.3 / 3.4	No	No
	15 / 15	0.0 / 0.0	5.3 / 5.3	3.3 / 3.3	No	No
Mokelumne Circle & Eight Mile Road	21 / 21	0.0 / 0.0	5.6 / 5.6	3.5 / 3.5	No	No
	21 / 21	0.0 / 0.0	5.6 / 5.6	3.5 / 3.5	No	No
	19 / 19	0.0 / 0.0	5.5 / 5.5	3.4 / 3.4	No	No
	16 / 16	0.0 / 0.0	5.5 / 5.5	3.4 / 3.4	No	No
Trinity Parkway & Eight Mile Road	21 / 21	0.0 / 0.0	5.8 / 5.8	3.6 / 3.6	No	No
	21 / 21	0.1 / 0.0	5.7 / 5.8	3.6 / 3.6	No	No
	17 / 17	0.1 / 0.0	5.7 / 5.8	3.6 / 3.6	No	No
	15 / 15	0.1 / 0.1	5.6 / 5.7	3.5 / 3.6	No	No

Source: LSA Associates, Inc., May 2006.

Mitigation Measure AIR-2:

The project would result in total (vehicular and stationary) daily emissions exceeding the daily emissions thresholds established by the SJVAPCD. No feasible mitigation measures would reduce the

7 Includes ambient one-hour concentration of 4.9 ppm and ambient eight-hour concentration of 3.0 ppm measured at the Stockton-Hazelton air quality monitoring station.

8 The State standard for one-hour CO concentrations is 20 ppm and for eight-hour CO concentrations is 9.0 ppm.

impacts to less than significant. However, the proposed project will be required to comply with Title 24 of the California Code of Regulations established by the Energy Commission regarding energy conservation standards. The SJVAPCD has created rules and regulations related to development projects to help minimize air quality impacts. Rule 4901 puts limits on wood-burning devices in new homes to minimize particulates from wood smoke. There is a limit on the number and type of wood-burning devices allowed in new houses and residential developments. The requirements would apply to the proposed project. Based on a density ratio of more than two homes per acre, no open-hearth fireplaces would be allowed.

More recently, the SJVAPCD adopted Indirect Source Review Rule 9510. New development projects in the San Joaquin Valley are affected by this Rule which requires a 20 percent reduction in construction equipment exhaust nitrogen oxides; a 45 percent reduction of construction equipment PM₁₀; a 33 percent reduction in operational nitrogen oxides over 10 years; and a 50 percent reduction in operational PM₁₀ over 10 years. Under the Rule, on-site mitigation can be used to achieve these reductions or an off-site fee may apply. Off-site fees reduce emissions by helping to fund clean air projects in the San Joaquin Valley.

Compliance with Rule 4901 and Rule 9510 would significantly reduce project related regional emission impacts. **Implementation of AIR-1 would reduce emissions to the extent feasible; however, this impact would remain significant and unavoidable.**

Impact AIR-6: The proposed project would contribute to cumulative air quality impacts. Additionally, the project is not consistent with the Air Quality Attainment Plan.

A number of individual projects in the City will be under construction simultaneously with the proposed project. Depending on construction schedules and actual implementation of projects in the area, generation of fugitive dust and pollutant emissions during construction may result in substantial short-term increases in air pollutants. This would be a contribution to short-term cumulative air quality impacts and is unavoidable.

Air Quality Attainment Plan Consistency Analysis

An AQAP describes air pollution control strategies to be taken by counties or regions classified as nonattainment areas. The AQAP's main purpose is to bring the area into compliance with the requirements of federal and State air quality standards. CEQA requires that projects resulting in a General Plan Amendment be analyzed for consistency with the AQAP. For a project to be consistent with the AQAP, the pollutants emitted from the project must not exceed the SJVAPCD significance thresholds or cause a significant impact on air quality. However, if feasible mitigation measures are implemented and are shown to reduce the impact level from significant to less than significant, the project is deemed consistent with the AQAP. The AQAP uses the assumptions and projections by local planning agencies to determine control strategies for regional compliance status. Therefore, any projects causing a significant impact on air quality would impede the progress of the AQAP.

A consistency analysis determination plays an essential role in local agency project review by linking local planning and unique individual projects to the AQAP in the following ways. It fulfills the CEQA goal of fully informing local agency decision makers of the environmental costs of the project under consideration at a stage early enough to ensure that air quality concerns are fully addressed. It

also provides the local agency with ongoing information, assuring local decision makers that they are making real contributions to clean air goals defined in the most current AQAP. Since the AQAP is based on projections from local General Plans, projects that are consistent with the local General Plan are considered consistent with the AQAP.

Air quality models are used to demonstrate that the project's emissions will not contribute to the deterioration or impede the progress of air quality goals stated in the AQAP. The air quality models use project-specific data to estimate the amount of pollutants generated from the implementation of a project. The results for the "without project" and the "with project" scenarios in the horizon year are compared to the AQAP's air quality projections. If the analyses comply with the requirements, it is considered to be consistent with the AQAP.

Currently, the region is in nonattainment for O₃, PM₁₀ and PM_{2.5}. Implementation of the proposed project, in conjunction with other planned developments within the cumulative study area and the region, would contribute to the delay of the attainment in the region. The proposed project will require a General Plan Amendment, since the land use is changing from agricultural uses to residential use. As such, the project has not been considered in preparation of the General Plan and therefore is inconsistent with the AQAP. After the General Plan is amended, it will be forwarded to the SJVAPCD for inclusion in the next update of the AQAP.

Amendments to the City of Stockton General Plan, zoning reclassification, and plan approval are required before the affected portion of the proposed project can be implemented. The proposed project, as shown above, will have significant impacts, although feasible mitigation measures shall be implemented as part of the proposed project (Impact Significance Criterion AQ-d). Hence, the proposed project will be considered to be consistent only after the proposed General Plan Amendment is approved.

Feasible mitigation measures do not exist that would reduce these impacts to a less than significant level.

4.2.4 Level Of Significance After Mitigation

The above mitigation measures will assist in reducing the cumulative project impacts on air quality although impacts cannot be completely mitigated. Additionally, the project has not been considered under the existing General Plan and is, therefore, inconsistent with the AQAP. The project will have an air quality impact that is significant and unavoidable.

4.3 WATER RESOURCES

4.3.1 Existing Setting

Flood Control

Bishop Tract is bounded by Telephone Cut on the north, Bishop Cut on the west, Disappointment Slough, Pixley Slough, and Bear Creek on the south, and I-5 on the east. Currently, flood protection is provided by levees along Pixley Slough and Bear Creek and by Bishop Tract levees to and along Bishop Cut to the west and along Telephone Cut to the north. A series of pumps is used to lift waters out into the adjacent sloughs.

A proposed revision to the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps (FIRM) was made in 1988. At the time, the greater project area was determined to be within the 100-year flood plain due to insufficient flood improvement protection. The area's flood control levees could not provide a minimum of three feet of freeboard above the theoretical 100-year flood plain elevation, a criterion used by FEMA to determine if a property is within the flood plain.

In 1990, Local Reclamation District 20-42 (RD 20-42) applied to FEMA to remove the 100-year flood plain designation from the greater Bishop Tract area. In 1992, FEMA accepted the request based on the passage of a Mello-Roos bond to initiate levee improvements, which are now complete.

A hydraulic analysis was performed to incorporate levee and interior drainage systems north of Bear Creek and west of Interstate 5 designed to mitigate flooding from the San Joaquin/Sacramento River Delta. A Letter of Map Revision (LOMR) was issued on December 28, 1992 which modified the base flood elevations north of Bear Creek and west of Interstate 5.

In 1994, FEMA studied the upstream channels that are tributary to the San Joaquin Delta and determined that they did not provide 100-year protection to the greater project area. This determination would have placed the project site and surrounding properties back into the 100-year flood plain. However, the San Joaquin Area Flood Control Agency (SJAFCA), a joint powers agency of the City of Stockton and San Joaquin County, was formed to assist in resolving regional flood control issues. A total of \$70 million was allocated towards flood control improvements through a regional benefit assessment district.

In July 1996, the first flood control project to improve the upstream channels was initiated to correct the 100-year flood plain issue, followed by other widespread flood control improvements. Both the U.S. Army Corps of Engineers (ACOE) and RD 20-42 have acknowledged the improvements meet FEMA standards and resolve the flooding issue. The FIRM map issued on April 2, 2002, indicates that the proposed project site is located in Zone B. Zone B is defined as: "areas between the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood."

The project site is within the assessment district formed to pay for the flood protection improvements, and new development would be required to pay the flood assessment at the time of building permit issuance.

Water Quality

The project site is located in the tidally influenced lower reaches of the San Joaquin River basin north of Stockton. The existing surface water features near the site include Bishop Cut, which provides the site's western border. Disappointment Slough and Pixley Slough lie near the project site. Pixley Slough meets Bear Creek at a marsh area at the southern portion of Spanos Park West; and an irrigation canal extending north from Pixley Slough to Eight Mile Road west of I-5.

Water quality is presently influenced by upstream flows from Bear Creek and Pixley Slough, agricultural runoff, City of Lodi stormwater and, possibly, by tidally caused flow reversals. The marsh area, located southeast of the project site, marginally influences local water quality by seasonally taking up or releasing nutrients, organic carbon, and other water quality constituents. The California Department of Water Resources maintains a water quality surveillance station in Disappointment Slough at Bishop Cut, located at the western border of the project site.

Water quality data from this monitoring station indicate that surface water in the project area is moderately low (less than 400 mg/l) in total dissolved solids, usually has dissolved oxygen concentrations greater than 75 percent saturation, has chlorophyll levels indicating no nuisance algae conditions (usually less than 20 $\mu\text{g/l}$), and has high turbidity resulting from suspended solids. There is no indication of toxic or non-aesthetic concentrations of trace elements or major ions.

Table 4.3.A summarizes more recent water quality data from the Disappointment Slough at Bishop Cut monitoring station.

Table 4.3.A: Water Quality Data

YEAR	DISSOLVED OXYGEN (MG/L)	TEMPERATURE (°F)	EC	CHLOROPHYLL (MICROGRAMS/L)
1996	5.5-9.4	50-79	153-301	n/a
1997	6.9-9.5	53-78	183-370	n/a
1998	n/a	n/a	n/a	n/a
1999 (February-September)	7-10	51-78	166-244	3.66-10.9

Source: LSA, 2001

Storm Water/Drainage

Pacific Advanced Civil Engineering, Inc. (PACE) analyzed the stormwater/hydrology issues on the project site, including the requirements to relocate existing channels for the adjacent Westlake Villages project. The analysis is summarized below.

There are unique existing physical constraints present within the study area. The Interstate-5 freeway roadway section is elevated and acts as a barrier from regional drainage generated from the east draining towards the San Joaquin River. The majority of the natural runoff for this area is associated with agricultural fields that are relatively flat with limited gradient. A system of earthen channels acts

as the collection system for surface drainage for the existing 1,813-acre watershed which is delivered to a small existing pump station (2-60 horsepower pump) operated by the Reclamation District. The approved Westlake Villages project (currently under construction) shares common project boundaries with the Crystal Bay site (south and east). Along these boundaries extends an earthen channel that is planned to be filled and developed, pending approval by the Corps of Engineers. Upon approval, the existing canals will be relocated and reconstructed parallel and south of Eight Mile Road, and discharged into an interim detention basin then conveyed through the existing pump station into Bishop Cut. This system is intended to replace the existing ditch until a permanent solution is developed.

The entire project area is protected on the three sides adjacent to the Delta by an earthen levee system, so stormwater runoff must be pumped over the levee into river resources since it cannot discharge by gravity because of the elevation differential with the ground and river level. Historically, localized ponding and shallow flooding have been observed during larger storm events occurring adjacent to the existing drainage ditches and field closer to the existing pump station because of its limited capacity. The area also contains high groundwater levels, which influences the depth of excavation for storage basins and underground pipes (PACE, 2004).

4.3.2 Impact Significance Criteria

Potential significant impacts associated with hydrology and water quality impacts have been evaluated using the following criteria:

- FC-a** Risk of 100-year flood event or greater to proposed project site;
- FC-b** Increase in volume or rate of runoff leaving the site, causing substantial flooding or exposure of life and property to increased flooding hazards;
- WQ-a** Long-term and irreversible erosion and sedimentation resulting from site development and occupation; and
- WQ-b** Failure to meet applicable water quality criteria at any surface water discharge point or in groundwater.

4.3.3 Impacts And Mitigation Measures

Effects Considered Not to Be Significant

Flood Control/Storm Water

Impact FC-1: The project will not be located within the 100-year flood plain.

With the regional flood control improvements that have been implemented over the past several years, flood control protection against the 100-year flood event is assured for the project site. Regional flood control issues have been resolved for the Bishop Tract Area, which includes the project site, as evidenced by the Zone B designation (FIRM Map #0602990270C). Additional coordination with FEMA is not necessary; the project site has received all necessary approvals and clearances from FEMA with respect to the LOMR process. Prior resolution of the 100-year flood plain issue has eliminated the conditions that are noted in **Significance Criterion FC-a**.

Potentially Significant Effects

Flood Control/Storm Water

Impact FC-2: The proposed project will increase the amount of impermeable surfaces which will increase site runoff quantities.

The proposed project contains a 7.2 acre manmade lake, designed to accommodate stormwater conveyance, detention, and water quality treatment from within the project area. Implementation of the project will include the preparation of a Drainage Master Plan and Hydrology Study which provides an assessment of both the onsite development surface drainage requirements and flood protection from the offsite tributary watershed. This Storm Drainage Master Plan would provide an assessment of both the regional and local surface hydrology, and preliminary hydraulic analysis of the drainage facilities.

The total regional watershed study area encompassed with the Drainage Master Plan would include approximately 850 tributary acres, which is generally bounded by Telephone Cut to the north, the Westlake development and existing golf course to the east and to the south, and the Bishop Cut or San Joaquin River levee to the west. The Westlake development acts as a natural drainage boundary since this development also has a self-contained drainage system and a 68-acre man-made lake system.

The proposed drainage facilities are intended to provide the Crystal Bay Development with 100-year flood protection and satisfy local drainage criteria adopted by both the City of Stockton and San Joaquin County. In addition, the existing adjacent northern tributary watershed areas would not have their current levels of flood protection impaired or reduced from the development by reducing potential flood storage areas. A detailed hydrology analysis would evaluate both the on-site local development watershed and offsite regional watershed as part of the flood protection assessment. This Master Plan will indicate that the Crystal Bay Development is not dependent on a future municipal public works drainage infrastructure or backbone drainage facility development, but also does not limit the occurrence of additional development within the municipal watershed.

The on-site runoff will be treated in the Crystal Bay lake prior to discharge to the Westlake Villages lake. The Crystal Bay lake will provide stormwater detention storage for all storm events ranging from the 2-year to the 100-year through surcharge storage above the normal lake operating water surface elevation. For the smaller storms up to the 10-year event, the runoff volume will be completely retained within the lake and the larger storms exceeding the 10-year magnitudes will discharge at a reduced flowrate through the terminal outlet pipelines to the Westlake lake. The Westlake lake system's capacity must be verified and updated to incorporate additional drainage. A

report will be submitted to the Municipal Utilities Department analyzing and recommending needed capacity changes and associated infrastructure.

It should be noted that the project will be constructed in phases; the multi-family parcel will develop in a later phase. In the interim, the parcel will be used for storage of runoff waters diverted from the existing drainage ditch (between Westlake Village and Crystal Bay). Earth excavated from the detention basin will be stock-piled adjacent to the basin creating a 10-foot high mound. An interim drainage system will be constructed that will consist of 3 60" diameter parallel RCP or HDP pipes. These pipes would be installed along the same alignment as the existing earthen channel parallel to Eight Mile Road and would extend down stream to outlet into the nine acre detention basin. Ultimately, a permanent solution for diverting runoff waters will be implemented. Accordingly, the multi-family parcel will no longer be required to serve as an interim detention basin and can be regraded for development purposes. Additional earth fill material may be imported into the temporary detention basin to create a developable pad.

Mitigation Measure FC-1a: Prior to issuance of building permits for new development, the applicant shall provide evidence to the Director of Community Development Department that flood assessments have been paid.

Mitigation Measure FC-1b: Prior to the filing of any parcel map or final map, storm drainage analysis or plans demonstrating that the onsite lake and stormwater runoff from the project can be adequately conveyed shall be reviewed and approved by the City of Stockton Department of MUD, City of Stockton Parks and Recreation, and the Public Works Department.

Mitigation Measures GEO-3d and GEO-3f will also be implemented. These measures will serve to protect the site from "underseepage," localized flooding and other geotechnical constraints.

Implementation of the above mitigation measures will reduce potential flooding impacts to a less than significant level.

Water Quality

Impact WQ-1: Project implementation could result in the potential degradation of water quality during project construction and operation.

During construction, disturbance of soil and operation of construction equipment can lead to increased sediments and vehicle fluids in stormwater or surface runoff. Following development of the project site, pollutants from roadway runoff would contain heavy metals and hydrocarbons from vehicle fluid. Chemicals used in landscaping maintenance would also impact water quality through stormwater runoff. The City has developed a Storm Water Quality Control Criteria Plan (SWQCCP) that is intended to establish uniform requirements for the selection and incorporation of storm water quality into the planning, design, construction and maintenance of flood management projects and new developments in a manner consistent with the Federal Clean Water Act (CWA) and the City's Storm Water Management Plan. All projects that require municipal approval for the division of land and construction of improvements are subject to the SWQCCP's requirements. The manmade lake system and naturalized recirculating stream system creates a sustainable natural aquatic environment that has three primary functions within the residential development: (1) it provides an aesthetic landscape feature for the community, (2) it is the primary drainage conveyance facility for the project

site and



LSA

FIGURE 4.3.1



SOURCE: Kimley-Horn, 2007

Crystal Bay
 Conceptual Storm Drainage Master Plan

P:AGS438/Graphics/4.3.1.ai

some amount of runoff storage/attenuation, and (3) it creates functioning “natural ecosystem” for a lake water quality and urban stormwater runoff treatment facility. The manmade lake is a unique “dynamic” natural treatment system that relies on natural processes in the aquatic environment through the establishment of an active ecosystem with (1) wetlands, (2) active water processes, and (3) open water body. The proposed system employs the use of multiple layers of treatment to facilitate water quality improvement through lake water quality measures (biofilters and aeration), urban stormwater runoff controls (water quality filters and wetland planter areas), and lake retention of runoff. These three elements work either through management of urban stormwater runoff or through lake water quality maintenance to ensure that the water within the lake and any discharge from the development is of the same or better quality than that discharged prior to development.

The lake with a minimum operating depth of eight to twelve feet will eliminate light penetration, maintain lower average temperature, allow temperature stratification, and minimize evaporation. A proposed submerged concrete lining to a depth of 18-inches below the water level would be installed around the perimeter that extended out ten-feet from the edge to address the safety concerns and provide protection for the PVC liner in the shallow areas. The steepened shoreline edge treatment extended 9 to 12-inches above the normal operating water surface elevation and then to the submerged concrete ledge. The remainder of the lake bottom section would be constructed at a 4:1 slope. The engineered shoreline will provide erosion protection from wind erosion and will appear to be a more natural form with bolder edge treatment and wetland planters.

The lake system incorporates submerged gravel bed biofilters, generally placed at the terminal end of each lake “finger,” in such a way as to promote overall lake water recirculation. Water is drawn from the middle of the lake into the lake pump station wet well and pumped, via pipelines under the lake, to each biofilter. Each biofilter is approximately 1000 square feet in area, with a flow rate of $\pm \frac{1}{2}$ gallon per minute (gpm) per square foot; in other words, each filter has an individual flow rate of approximately 500 gpm. Biofilters have the ability to accomplish the following functions:

- Convert ammonia to nitrites and then to nitrates and finally to nitrogen gas
- Remove BOD
- Add oxygen
- Remove carbon dioxide
- Remove excess nitrogen and other inert gases
- Remove turbidity and clarify water
- Remove various organics

Aeration for the manmade lake is provided via a fine bubble diffusion system placed at the bottom of the lake. Fine bubble, bottom-laid aeration serves a dual purpose: first, it introduces air and oxygen throughout the lake, and second, it enhances the natural convection movement of water (i.e., vertical recirculation of the water column) within the lake itself. The subsequent increases in both the dissolved oxygen levels in the lake water and in destratification of the lake’s vertical water column serve to reduce water surface temperature, a primary condition leading to undesirable thermal stratification and potential algae bloom.

A stabilized biological lake system requires maintenance of dissolved oxygen levels. By ensuring that adequate dissolved oxygen levels are achieved within the lake, the potential for odor problems and other lake maintenance concerns will be minimized. Lake water quality is further enhanced and supported by vegetated first flush basins (water quality filters not on the lake to avoid bullfrog habitat) and submerged wetland planter areas placed along the lake edge.

The water quality filters are designed to collect initial runoff during a storm event and retain it long enough for the majority of pollutants within the runoff to be removed. These pollutants, introduced into the runoff through overland flow, will be substantially reduced within the water quality filters through the processes of sedimentation, adsorption, and filtration.

Wetland planter areas, averaging 300 SF in surface area (for a total combined surface area of 10,000 SF), are used to promote water quality enhancement within the lake, including urban runoff that passes through the water quality filters. These planter areas are located intermittently along the lake edge; spacing of the planters is based both upon project aesthetics and on water quality considerations. Strategic placement of planters ensures that even areas that see little flow will benefit from pollutant removal processes.

It should also be noted that the Home Owners Association will be the responsible entity associated with the operation and maintenance of the manmade lake system. The HOA would contract with a private lake maintenance company that would perform the physical day to day maintenance of the lake and the mechanical systems. Annual operating costs for the lake will be included in the fees that are distributed by the HOA to the residents of the project.

Additionally, the lake will be designed to provide a submerged "safety ledge" directly adjacent to the shoreline of the lake. The lake is also designed such that the minimum operating depth at the edge of the lake shoreline is approximately 18-inches so it is not conducive to allow walking directly into the water like a beach shoreline. Therefore health and safety issues associated with the open water body of the lake system are inherently addressed in the design features of the lake system.

Implementation of the SWQCCP components and the following mitigation measures will ensure that the conditions outlined in **Significance Criteria WQ-a** and **WQ-b** will be avoided.

Mitigation Measure WQ-1a: Prior to issuance of grading permits for the project site, the applicant shall submit evidence to the Director of the MUD indicating that a NOI and a copy of the developer's or contractor's SWPPP have been filed with the RWQCB.

Mitigation Measure WQ-1b: The project applicant will comply with the applicable water quality and storm drainage discharge requirements consistent with any waste discharge or water quality certification requirements authorized by the RWQCB. A Water Quality Certification may also be required.

Mitigation Measure WQ-1c: This project shall comply with the Stockton Municipal Code Section 7-859, Storm Water Quality Control Criteria Plan and as outlined in the City's Phase 1 Storm Water NPDES permit issued by the California Water Quality Control Board, Central Valley Region (Order No. R5-2002-0181). The Owners, Developers, and/or Successors-in-Interest (ODS) shall establish a maintenance entity acceptable to the City to provide funding for operation, maintenance, and

replacement costs of storm water best management. In addition, ODS shall create a new zone within the Stockton Consolidated Storm Drainage Maintenance Assessment District No. 2005-1, prior to the filing of any parcel map or final map, to provide funding for the operation, maintenance, and replacement costs of the storm water best management practices.

Mitigation Measure WQ-1d: Storm water runoff shall be treated in conformance with the City's Storm Water Quality Control Criteria Plan prior to any discharge into the Westlake Villages.

Mitigation Measure WQ-1e: Prior to filing any parcel map or final map, Crystal Bay shall demonstrate to the satisfaction of the Municipal Utilities Department that discharge of storm drainage into the Westlake Villages storm drain system will not adversely impact the storm water quality or storm water detention and/or discharge characteristics of the Westlake Villages storm drainage system.

Mitigation Measure WQ-1f: Prior to filing any parcel map or final map, Crystal Bay and Westlake Villages shall enter a City approved agreement permitting Crystal Bay to discharge treated storm water into Westlake Villages lake and water quality treatment system. The agreement shall stipulate privileges, responsibilities, compensation, and remedies.

Mitigation Measure WQ-1g: The lake edge treatment improvements adjacent to the Neighborhood Park shall be subject to review and approval by the City Parks and Recreation Department.

The design of the lake system and mitigation measures will reduce the potential impacts to surface and groundwater quality both during construction and long-term conditions to a less than significant level.

4.3.4 Level Of Significance After Mitigation

Potential impacts associated with flooding and water quality will be mitigated to less than significant levels with implementation of mitigation measures.

4.4 BIOLOGICAL RESOURCES

A Biological Resources Evaluation was prepared for the proposed project LSA Associates, Inc. The analysis was used in preparation of this section and is presented in Appendix E.

4.4.1 Existing Setting

Plant Communities and Associated Wildlife Habitats

Two plant communities are mapped on the project site: ruderal uplands and agricultural lands. These plant communities are defined using Holland and Keil (1995) and the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) (2000).

Ruderal Uplands

Ruderal uplands consist of disturbed upland areas within the project area, including the levee embankment adjacent to the west boundary of the project, and other miscellaneous upland areas adjacent to the ditches. Vegetation is often entirely lacking in these areas or consists of a very low diversity of species adapted to disturbed conditions, including milk thistle (*Silybum marianum*), poison hemlock (*Conium maculatum*), and wild radish (*Raphanus sativus*). Approximately 10.3 acres of ruderal uplands occur on the project site.

Agricultural Lands

Most of the property (approximately 162.7 acres) consists of agricultural lands. These areas are regularly in crop production but are currently fallow and recently disced. As a result, they are primarily unvegetated.

A toe drain adjacent to the east levee of Bishop Cut and two drainage ditches also occur in the agricultural areas. These ditches collect and convey runoff water and are dominated by wetland species typically associated with freshwater marsh habitat including cattail (*Typha latifolia*), tule (*Scirpus acutus*), Goodding's willow (*Salix gooddingii*), water primrose (*Ludwigia peploides*), nutsedge (*Cyperus* sp.), and smartweed (*Polygonum punctatum*).

Generally, agricultural lands do not provide high quality habitat for resident wildlife species. This is due, in part, to extensive land manipulation and pesticide application associated with agricultural operations. Some species, however, inhabit agricultural lands. Wildlife species observed in this community during the field surveys include: song sparrow (*Melospiza melodia*), mourning dove (*Zenaidura macroura*), northern mockingbird (*Mimus polyglottos*), western kingbird (*Tyrannus verticalis*), bullfrog (*Rana catesbeiana*), and California ground squirrel (*Spermophilus beechyi*). Other wildlife species likely to occur in these areas include raccoon (*Procyon lotor*), coyote (*Canis latrans*), Brewer's blackbird (*Euphagus cyanocephalus*), opossum (*Didelphis virginiana*), and California meadow vole (*Microtus californicus*). In addition, several raptor species are likely to forage over crop lands, including American kestrel (*Falco sparverius*), white-tailed kite (*Elanus leucurus*), red-tailed hawk (*Buteo jamaicensis*), and Swainson's hawk (*Buteo swainsonii*).

The drainage ditches provide irrigation to the surrounding agricultural fields and collect irrigation discharge. Many wildlife species potentially utilize the drainage ditches, including snowy egret (*Egretta thula*), mallard (*Anas platyrhynchos*), great blue heron (*Ardea herodias*), and great egret

(*Ardea alba*). In addition, many bat and bird species potentially forage over the irrigation ditches and the adjacent agricultural lands.

Aquatic resources located on the project site are limited to a toe drain adjacent to the east levee of Bishop Cut and two drainage ditches within the agricultural areas. These ditches collect and convey runoff water and are dominated by wetland species typically associated with freshwater marsh habitat, as described above.

The toe drain and drainage ditches on the project site are isolated from navigable waters by the levees. These drainages all originate in the study area and there is currently no connection between the drainage system and navigable water.

Special Status Species

Regulatory Background

Special status plants and wildlife are those species that are 1) listed as rare, threatened, or endangered by USFWS or CDFG under State or federal endangered species acts; 2) are on formal lists as candidates for listing as threatened or endangered; 3) are on formal lists as species of concern; or 4) are otherwise recognized at the federal, State, or local level as sensitive.

Federal and California Endangered Species Acts

Under the Federal Endangered Species Act (FESA), it is unlawful to “take” any species listed as threatened or endangered. “Take” is defined as to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct.” An activity is defined as “take” even if it is unintentional or accidental. Take provisions under FESA apply only to listed fish and wildlife species under the jurisdiction of the USFWS and/or the National Oceanic & Atmospheric Administration, National Marine Fisheries Service (NOAA Fisheries). Consultation with USFWS or NMFS is required if a project “may affect”, or result in “take” of, a listed species.

When a species is listed, the USFWS and/or NOAA Fisheries, in most cases, must officially designate specific areas as critical habitat for the species. Consultation with USFWS and/or the NMFS is required for projects that include a federal action or federal funding if the project will modify designated critical habitat.

Under the California Endangered Species Act (CESA), it is unlawful to “take” any species listed as rare, threatened, or endangered. “Take” means to “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” CESA take provisions apply to fish, wildlife, and plant species. Take may result whenever activities occur in areas that support a listed species. Consultation with CDFG is required if a project will result in “take” of a listed species.

Magnuson-Stevens Fishery Conservation and Management Act

Under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), essential fish habitat (EFH) must be designated in every fishery management plan. EFH includes “...those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” The MSA

requires consultation with NOAA Fisheries for projects that include a federal action or federal funding and may adversely modify EFH.

Migratory Bird Treaty Act and California Department of Fish and Game Code (Breeding Birds)

The Migratory Bird Treaty Act (MBTA) prohibits actions that will result in “take” of migratory birds, their eggs, feathers, or nests. “Take” is defined in the MBTA to include by any means or in any manner, any attempt at hunting, pursuing, wounding, killing, possessing or transporting any migratory bird, nest, egg, or part thereof.

Migratory birds are also protected, as defined in the MBTA, under Section 3513 of the California Fish and Game Code. In addition, Section 33503 of the California Fish and Game Code prohibits the take, possession, or needless destruction of the nest or eggs of any bird, except as otherwise provided by the California Fish and Game Code or other regulation.

Executive Order 13112 – Invasive Species

Under EO 13112, an invasive species is defined as “an alien species (a species not native to a particular ecosystem) whose introduction does or is likely to cause economic or environmental harm or harm to human health.” Invasive species are determined by the Invasive Species Council. In addition to other mandates, EO 13112 mandates federal agencies whose actions may affect the status of invasive species to “not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species...”

San Joaquin County Multi-Species Habitat Conservation and Open Space Plan

The SJMSCP, in accordance with ESA Section 10(a)(1)(B) and CESA Section 2081(b) Incidental Take Permits, provides compensation for the conversion of open space to non-open space uses which affect the plant, fish and wildlife species covered by the SJMSCP. The SJMSCP compensates for conversions of open space for the following activities: urban development, mining, expansion of existing urban boundaries, non-agricultural activities occurring outside of urban boundaries, levee maintenance undertaken by the San Joaquin Area Flood Control Agency, transportation projects, school expansions, non-federal flood control projects, new parks and trails, maintenance of existing facilities for non-federal irrigation district projects, utility installation, maintenance activities, managing Preserves, and similar public agency projects. These activities will be undertaken by both public and private individuals and agencies throughout San Joaquin County and within the County's incorporated cities of Escalon, Lathrop, Lodi, Manteca, Ripon, Stockton and Tracy. Public agencies including Caltrans (for transportation projects), and the San Joaquin Council of Governments (for transportation projects) also will undertake activities which will be covered by the SJMSCP.

The SJMSCP is implemented by SJCOG in coordination with the plan participants.

Special Status Species Definitions

The special status species lists were generated from the CNDDDB (2004) and CNPS Electronic Inventory (2004), referencing the Terminous and Lodi South quadrangles, and from knowledge of the

local area. These lists were reviewed to determine which species could potentially occur on the project site. The list included numerous species representing a variety of habitat types.

Special status species are defined as follows:

- a. Plants and animals that are listed or proposed for listing as threatened and endangered under the CESA or the FESA;
- b. plants and animals that are candidates for possible future listing as threatened or endangered under the FESA and CESA;
- c. plants and animals that meet the definition of endangered, rare, or threatened under the CEQA that may include species not found on either state or federal Endangered Species lists;
- d. plants occurring on Lists 1A, 1B, 2, 3, and 4 of CNPS electronic inventory (2002). The CDFG recognizes that Lists 1A, 1B, and 2 of the CNPS inventory contain plants that, in the majority of cases, would qualify for State listing, and CDFG requests their inclusion in EIRs. Plants occurring on CNPS Lists 3 and 4 are “plants about which more information is necessary,” and “plants of limited distribution,” respectively (CNPS, 2001). Such plants may be included as special-status species on a case by case basis due to local significance or recent biological information;
- e. migratory nongame birds of management concern listed by the USFWS;
- f. animals that are designated as “species of special concern” by CDFG;
- g. animals that are designated as “species of concern” by USFWS;
- h. animal species that are “fully protected” in California.

Potentially Occurring Special Status Species

The following special status species have the potential to occur on the project site.

Bat Species

The project site does not contain suitable roosting sites for bat species. The project site contains potential foraging habitat for several special status bat species, including pale western big-eared bat (*Corynorhinus townsendii pallescens*), Pacific western big-eared bat (*Corynorhinus townsendii townsendii*), greater western mastiff bat (*Eumops perotis californicus*), western red bat (*Lasiurus blossevilli*), small-footed myotis (*Myotis ciliolabrum*), long-eared myotis (*Myotis evotis*), fringed myotis (*Myotis thysanodes*), long-legged myotis (*Myotis volans*), and Yuma myotis (*Myotis yumanensis*). None of these species are on formal lists, but are State species of special concern or are covered under the SJMSCP. Bats forage over water or fields where insects are abundant. Bat surveys were not conducted on the project site, but potential foraging habitat occurs.

Tricolored Blackbird

The tricolored blackbird (*Agelaius tricolor*) is a State species of special concern. Tricolored blackbirds are highly colonial and nomadic, and are largely endemic to the lowlands of California. They prefer to nest in freshwater marshes or in nearby uplands with dense growths of herbaceous

vegetation, such as mustard and thistle. Red-winged blackbirds (*Agelaius phoeniceus*) were observed on the project site during field surveys, but no tricolored blackbirds were observed. The CNDDDB contains several records of this species within 10 miles of the project site. No suitable nesting habitat is present on the project site, but suitable foraging habitat occurs.

Western Burrowing Owl

The western burrowing owl (*Athene cunicularia*) is a State species of concern. Burrowing owls occur in warmer valleys, open, dry grasslands, deserts, and scrublands associated with agriculture and urban areas that support populations of California ground squirrels. Burrowing owls nest below ground, utilizing abandoned burrows of other species, most commonly ground squirrel burrows, and feed on insects and small mammals. The closest recorded occurrence of this species in the CNDDDB is approximately 2.2 miles southeast of the project site on Atlas Tract. Surveys of the project site in 2005 did not identify any suitable burrows for this species or any signs of burrowing owls utilizing the project site. However, California ground squirrels were observed on the project site, and the presence of ground squirrels and squirrel burrows are attractive to burrowing owls. Burrowing owls could migrate onto the project site prior to project implementation.

Aleutian Canada Goose

The Aleutian Canada goose (*Branta canadensis leucopareia*) is a federal delisted species. This species forages in flooded, disced, cut, or irrigated fields during fall migration. Canada geese are highly mobile while foraging, and can relocate to nearby foraging habitat if they are disturbed. No Canada geese were observed on the project site, and the CNDDDB does not contain any records for this species within 10 miles of the project site. However, this species could forage on the project site.

Ferruginous Hawk

The ferruginous hawk (*Buteo regalis*) is a State species of concern. This species occurs in open grasslands, sagebrush flats, desert scrub, low foothills, and fringes of pinyon-juniper habitats. The ferruginous hawk is an uncommon winter resident and migrant at lower elevations and open grasslands in the Modoc Plateau, Central Valley, and Coast Ranges, and is a fairly common winter resident of grasslands and agricultural areas in southwestern California. The CNDDDB does not contain any records of ferruginous hawk within 10 miles of the project site, and this species was not observed during surveys. However, ferruginous hawks could forage on the project site.

Swainson's Hawk

The Swainson's hawk (*Buteo swainsoni*) is a State threatened species. It has no formal federal status. Swainson's hawks are long distance migrants, wintering primarily in South America, and returning north to breed. Swainson's hawks are large, broad-winged hawks that occur in open country throughout the western half of the United States. In California, Swainson's hawks occur in the northeastern portion of the state, in the Great Basin Province, and in the Central Valley. They return to the Central Valley in mid-March, and begin migrating south in August. Nests are built in the tops of large trees, primarily those associated with riparian habitats. Swainson's hawks are known to forage up to 10 miles from their nest sites (Estep 1989).

No Swainson's hawks were observed on the project site during field surveys in 2005. The CNDDDB contains many records for Swainson's hawks within 5 miles of the project. The agricultural fields on the project site provide suitable foraging habitat for Swainson's hawk. No nesting habitat is present on or adjacent to the project site.

Mountain Plover

The mountain plover (*Charadrius montanus*) is a State species of concern. This species winters in short grasslands, freshly plowed fields, newly sprouting grain fields, and sometimes sod farms. Mountain plovers do not nest in California.

The CNDDDB does not contain any records of mountain plover within 10 miles of the project site, and this species was not observed during 2005 field surveys. However, mountain plovers could forage on the project site during the winter.

Northern Harrier

The northern harrier (*Circus cyaneus*) is a State species of concern. It has no federal status. Northern harriers occur in a variety of habitats, including grasslands, grain fields, sagebrush flats, emergent wetlands, and alpine meadows. This species usually nests in emergent wetlands or along rivers or lakes, but may nest in grasslands, grain fields, or on sagebrush flats.

The CNDDDB does not contain any records for northern harrier within 10 miles of the project site, and no northern harriers were observed during the 2005 surveys. However, this species could nest and/or forage on the project site.

White-Tailed Kite

The white-tailed kite (*Elanus leucurus*) is fully protected under California Fish and Game Code and the federal Migratory Bird Treaty Act (MBTA). This raptor species uses scattered trees for breeding, and open grasslands and marshes for foraging. The CNDDDB does not contain any records of white-tailed kites nesting within 10 miles of the project site, and no nesting habitat is present on the project site. The agricultural fields on the project site provide suitable foraging habitat for white-tailed kite.

Merlin

The merlin (*Falco columbarius*) is a State species of special concern, but has no federal status. This species is an uncommon winter migrant from September to May. Merlins nest in Alaska and Canada; they do not nest in California. This species winters in a variety of habitats, including open grasslands, savannahs, woodlands, edges, and early successional stages.

The CNDDDB does not contain any records of the merlin within 10 miles of the project site, and this species was not observed during the 2005 surveys. However, merlins could forage on the project site during the winter.

Prairie Falcon

The prairie falcon (*Falco mexicanus*) is a State species of concern, but has no federal status. This species nests on cliffs in dry, open terrain, and forages in open areas such as grasslands, rangeland, savannahs, desert scrub, and agricultural fields.

Prairie falcon nesting habitat does not occur on the project site. The CNDDDB does not contain any records of the prairie falcon within 10 miles of the project site, and this species was not observed during the 2005 surveys. However, prairie falcons could forage on the project site.

Loggerhead Shrike

The loggerhead shrike (*Lanius ludovicianus*) is a State species of concern. This species nests in broken woodlands, savannahs, riparian, and other woodlands. Loggerhead shrikes prefer open country with perches for scanning and hunting, and dense shrubs and brush for nesting.

The CNDDDB does not contain any records of loggerhead shrike within 10 miles of the project site. Suitable habitat occurs on the project site, and this species could nest and/or forage here.

Western Pond Turtle

The western pond turtle (*Clemmys marmorata*), a California species of concern, ranges from western Washington State south to northwestern Baja California. Pond turtles are an aquatic species, found in ponds, marshes, rivers, streams, and irrigation ditches that typically have rocky or muddy bottoms and are vegetated with aquatic vegetation. Eggs are laid at upland sites, away from the water, from April through August. The CNDDDB contains several records of western pond turtle within 10 miles of the project site. Marginal habitat for this species occurs in the toe drain in the southwest portion of the project site; the other two drainage ditches do not provide suitable habitat for western pond turtle. No suitable breeding habitat is present on the project site.

Giant Garter Snake

The giant garter snake (*Thamnophis gigas*) is a federal and State threatened species. It occurs in the Sacramento and San Joaquin Valleys in California. This species inhabits areas in the vicinity of freshwater marshes, ponds, and slow moving streams with dense aquatic vegetation, and prefers water depths of at least one foot. Optimal giant garter snake habitat includes still or slow moving waters with emergent vegetation, overhanging tree canopy, and pools deeper than approximately 30 inches. Adjacent upland habitat above flood elevations is also important. The giant garter snake occupies small mammal burrows and other soil crevices above prevailing flood elevations during its winter dormancy period.

The drainage ditches on the project site do not provide suitable aquatic habitat for giant garter snake, but potential aquatic habitat is present in the drainage ditch adjacent to the southern border of the project site. The banks of this drainage ditch are very steep, limiting access to the adjacent upland habitat by giant garter snakes that may be utilizing the ditch. Potential upland habitat is present within 200 feet of this ditch. The croplands on the project site do not provide suitable giant garter snake upland habitat due to frequent disturbance from agricultural operations (i.e., discing). The closest CNDDDB occurrence for giant garter snake is approximately 2.7 miles north of the project site on Shin Kee Tract.

Regulatory Background

Army Corps of Engineers Jurisdictional Waters

Under Section 404 of the Clean Water Act (CWA), the Army Corps of Engineers (Corps) regulates the discharge of dredged or fill material into waters of the U.S. Waters of the U.S. are those waters that have a connection to interstate commerce, either direct via a tributary system or indirect through a nexus identified in the Corps regulations. In non-tidal waters, the lateral limit of jurisdiction under Section 404 extends to the ordinary high water mark (OHWM) of a waterbody or, where adjacent wetlands are present, beyond the OHWM to the limit of the wetlands. The OHWM is defined as “that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area” (33 CFR 328.3). In tidal waters, the lateral limit of jurisdiction extends to the high tidal line (HTL) or, where adjacent wetlands are present, beyond the HTL to the limit of the wetlands.

Wetlands. Wetlands are defined as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for a life in saturated soil conditions.”

Nonwetland Waters. Nonwetland waters essentially include any body of water, not otherwise exempted, that displays an OHWM.

Regional Water Quality Control Board

Under Section 401 of the CWA, the State Water Resources Control Board must certify all activities requiring a 404 permit. The Regional Water Quality Control Board (RWQCB) regulates these activities and issues water quality certification for those activities requiring a 404 permit. In addition, the RWQCB has authority to regulate the discharge of “waste” into waters of the State pursuant to the Porter-Cologne Water Quality Control Act (P-C).

California Department of Fish and Game Jurisdiction

CDFG, through provisions of Sections 1600-1616 of the State of California Code of Regulations, is empowered to issue agreements for any alteration of a river, stream, or lake where fish or wildlife resources may be substantially adversely affected. Streams (and rivers) are defined by the presence of a channel bed and banks, and the conveyance of at least ephemeral flows. CDFG regulates wetland areas only to the extent that those wetlands are part of a river, stream, or lake as defined by CDFG.

CDFG generally includes, within the jurisdictional limits of streams and lakes, any riparian habitat present. Riparian habitat includes willows, cottonwoods, and other vegetation typically associated with the banks of a stream or lake shoreline. In most situations, wetlands associated with a stream or lake would fall within the limits of riparian habitat. Thus, defining the limits of CDFG jurisdiction based on riparian habitat will automatically include any wetland areas. CDFG has not defined wetlands for jurisdictional purposes. Wetlands not associated with a lake, stream, or other regulated area are generally not subject to CDFG jurisdiction.

Waters of the United States

As described previously, the drainage system for the study area consists of a levee toe drain and two drainage ditches. Per Corps regulations (Preamble Section 328.3 Definitions) the Corps does not generally consider non-tidal drainage and irrigation ditches excavated on dry land to be waters of the U.S. The Corps does, however, reserve the right to regulate these ditches on a case by case basis.

The Corps Sacramento District has issued additional guidance regarding the regulation of man-made ditches. Guidance for regulatory actions involving Delta levees, issued in March 2004, stipulates that toe drains are not considered waters of the U.S. unless they were constructed through wetlands or are channelized streams. The guidance further stipulates that the Corps will assume a ditch (e.g., a toe drain) was constructed through wetlands if wetlands exist on both sides of the ditch. Based on LSA's findings, wetlands do not occur on either side of the toe drain.

To determine whether these ditches were constructed through wetlands, LSA reviewed a number of historic aerial photos and other mapping of the study area dating back to 1940. The photos show that except for the northern end, the toe drain was located in essentially the same location in 1940 as it is now. The northern 500-600 feet of the toe drain was relocated approximately 200 feet east of the levee sometime before 1940, until at least 1949. The USGS quadrangle (Terminus), dated 1978, indicates several structures in the area where the north end of the toe drain was relocated. The 1940 and 1949 photos also show the drainage ditches in different locations than where they are currently located. Based on this information, it appears the toe drain and drainage ditches were constructed in uplands, and are not waters of the U.S.

In a recent Corps verification of the adjacent property to the south of the Crystal Bay property, the Westlake Village Site (File No. 200400279), dated January 17, 2006 the Corps determined that the smaller "feeder irrigation ditches", which included levee toe drains along Bishop Cut and Disappointment Slough and other irrigation ditches, were constructed in uplands subsequent to the site being drained and, therefore, are not waters of the U.S. The levee toe drains and irrigation ditches in the study area are equivalent to the "feeder irrigation ditches" on the Westlake Village Site.

Approximately 0.86 acre of areas meeting Corps criteria for wetlands was identified in the levee toe drain and irrigation ditches in the study area. However, the wetlands on the project site are not expected to be regulated as waters of the U.S., in light of the Corps delineation verification on the Westlake Village site (subject to verification).

CDFG Jurisdictional Waters

The drainage levee toe drain and drainage ditches on the project site were constructed in uplands and are not hydrologically connected to a stream or river. In addition, no riparian habitat is present on the project site. Consequently, the aquatic features on the project site are not CDFG jurisdictional waters.

4.4.2 Impact Significance Criteria

Potential significant impacts associated with biological resources have been evaluated using the following criteria:

- BR-a** Substantial interference with the movement of any resident or migratory fish or wildlife species;
- BR-b** Substantially diminished habitat for fish, wildlife, or plants;
- BR-c** Substantial effect on rare or endangered species of animals or plants or the habitat of the species; and
- BR-d** Conflict with adopted goals, policies, or regulations of relevant regulatory agencies.

The significance criteria identified above are based on CEQA Guidelines, Section 15065. A number of other agencies have promulgated criteria and definitions relevant to the implementation of CEQA significance criteria, as described below.

CEQA Section 15206 states that a project is of statewide, regional, or area wide significance if it has the potential to substantially affect sensitive wildlife habitats, including but not limited to riparian lands, wetlands, bays, estuaries, marshes, and habitats for rare and endangered species, as defined by Fish and Game Code Section 903. CEQA Section 15380 further provides that a plant or animal species may be treated as rare or endangered even if not on one of the official lists if, for example, it is likely to become endangered in the foreseeable future.

Based on guidelines established by the USFWS and CDFG, a project could be considered to have a significant adverse impact on biological resources if it would result in substantial disruption to, or destruction of, any special-status species, its habitat, or breeding grounds. A project would also be considered to have a significant impact if it would result in a substantial loss of important plant or animal species; would cause a change in species composition, abundance, or diversity beyond that of normal variability; would result in the direct or indirect measurable degradation of sensitive habitats (e.g., wetlands, riparian corridors, vernal pools, oak woodlands); or would result in loss of a significant plant community.

A project would normally have a significant impact on the environment if it would physically affect communities or species protected by adopted environmental plans and goals of the community(ies) where it is located. Any action that would conflict with these policies might be considered a significant impact.

4.4.3 Impacts and Mitigation Measures

Potentially Significant Effects

Impact BR-1: Implementation of the project could affect several special status species that could occur on the project site.

The proposed project would convert the existing agricultural conditions of the project site to residential development. Despite the extensive habitat modification to the site, several special status species including; bat species, tricolored blackbird, Aleutian Canada goose, ferruginous hawk,

Swainson's hawk, mountain plover, white-tailed kite, merlin, prairie falcon, and western pond turtle could be directly impacted by site development if they present on the site when construction begins. However, these species are covered under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) and implementation of Mitigation Measure BR-1 will reduce impacts to less than significant levels.

Mitigation Measure BR-1: Impacts to habitat for special status plant and animal species covered under the SJMSCP require payment of mitigation fees. The project shall implement the SJMSCP conservation strategy, which includes one or a combination of two or more of the following options to provide compensation pursuant to the SJMSCP.

- a) Pay the appropriate fee as indicated in the SJMSCP; or
- b) Dedicate, as conservation easements or fee title, or in-lieu dedications; or
- c) Purchase approved mitigation bank credits; or
- d) Prepare an alternative mitigation plan, consistent with the goals of the SJMSCP and equivalent in biological value to options A, B, and C above, subject to approval by the JPA with the concurrence of the Permitting Agencies' representatives on the TAC.

Once the applicant selects from these options, additional interaction with SJCOG will be required. This includes a biologist on-call with SJCOG conducting a survey of the project site to confirm findings from prior biological surveys. The biologist will collect information relating to the project site such as habitat type and potential presence of covered species. This information will be used to formulate Incidental Take Minimization Measures for the project applicant consistent with the SJMSCP. Focused wildlife and plant surveys, including preconstruction surveys, are not conducted by the SJCOG biologist, but are the responsibility of the project applicant. The preconstruction survey must be conducted prior to the submittal of any building permits within the Master Development Plan project area.

Implementation of Mitigation Measure BR-1 prevents the conditions outlined in Significance Criteria BR-c from occurring and reduces this impact to less than significant.

Impact BR-2: Implementation of the project could impact northern harrier.

The northern harrier (*Circus cyaneus*) is a State species of concern. It has no federal status. Northern harriers occur in a variety of habitats, including grasslands, grain fields, sagebrush flats, emergent wetlands, and alpine meadows. This species usually nests in emergent wetlands or along rivers or lakes, but may nest in grasslands, grain fields, or on sagebrush flats.

The CNDDDB does not contain any records for northern harrier within 10 miles of the project site, and no northern harriers were observed during the 2005 surveys. However, this species could nest and/or forage on the project site. Implementation of Mitigation Measure BR-2 will reduce impacts to a less than significant level.

Mitigation Measure BR-2: Direct take of nesting northern harriers would be in violation of the Fish and Game Code and MBTA, and this species is covered under the SJMSCP. The following mitigation

measures are consistent with the SJMSCP Incidental Take Minimization Measures for northern harrier, and the provisions of the MBTA.

1. Prior to issuance of a grading permit, the project proponent shall implement the SJMSCP conservation strategy, as described in Mitigation Measure BR-1, to provide compensation pursuant to the SJMSCP.
2. If project construction is to begin during the nesting season (March 1 - September 15), all suitable nesting habitat on the project site and within 500 feet of the limits of work shall be surveyed by a qualified biologist prior to initiating construction-related activities. Surveys shall be conducted no more than 14 days prior to the start of work.
3. A setback of 500 feet from nesting areas shall be established and maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave the nest. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests which are known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.

Implementation of Mitigation Measure BR-2 prevents the conditions outlined in Significance Criteria BR-a through BR-d from occurring and reduces this impact to less than significant.

Impact BR-3: Implementation of the project could impact burrowing owls.

The western burrowing owl (*Athene cunicularia*) is a State species of concern. Burrowing owls occur in warmer valleys, open, dry grasslands, deserts, and scrublands associated with agriculture and urban areas that support populations of California ground squirrels. Burrowing owls nest below ground, utilizing abandoned burrows of other species, most commonly ground squirrel burrows, and feed on insects and small mammals. The closest recorded occurrence of this species in the CNDDDB is approximately 2.2 miles southeast of the project site on Atlas Tract. Surveys of the project site in 2005 did not identify any suitable burrows for this species or any signs of burrowing owls utilizing the project site. However, California ground squirrels were observed on the project site, and the presence of ground squirrels and squirrel burrows are attractive to burrowing owls. Burrowing owls could migrate onto the project site prior to project implementation. Implementation of Mitigation Measure BR-3 will reduce impacts to a less than significant level.

Mitigation Measure BR-3: Direct take of nesting burrowing owls would be in violation of the Fish and Game Code and MBTA, and burrowing owl is a covered species under the SJMSCP. The following mitigation measures are consistent with the SJMSCP Incidental Take Minimization Measures for burrowing owl and the provisions of the MBTA.

1. Prior to issuance of a grading permit, the project proponent shall implement the SJMSCP conservation strategy, as described in Mitigation Measure BR-1, to provide compensation pursuant to the SJMSCP.
2. No more than 30 days prior to any ground disturbing activities, a qualified biologist shall conduct surveys for burrowing owls. If ground disturbing activities are delayed or suspended for more than 30 days after the initial preconstruction surveys, the site shall be resurveyed.

All surveys shall be conducted in accordance with CDFG's Staff Report on Burrowing Owls (CDFG 1995).

3. If the preconstruction surveys identify burrowing owls on the site during the non-breeding season (September 1 through January 31), burrowing owls occupying the project site shall be evicted from the project site by passive relocation as described in the CDFG's Staff Report on Burrowing Owls (CDFG 1995).
4. If the preconstruction surveys identify burrowing owls on the site during the breeding season (February 1 through August 31), occupied burrows shall not be disturbed and shall be provided with a 250-foot protective buffer. The buffer shall be maintained until the SJMSCP Technical Advisory Committee (TAC), with the concurrence of CDFG representatives on the TAC, or a qualified biologist approved by CDFG, verifies through non-invasive means that either: 1) the birds have not begun egg laying, or 2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. Once the fledglings are capable of independent survival, the burrow(s) can be destroyed.

Implementation of Mitigation Measure BR-3 prevents the conditions outlined in Significance Criteria BR-a through BR-d from occurring and reduces this impact to less than significant.

Impact BR-4: Implementation of the project could impact loggerhead shrikes.

The loggerhead shrike (*Lanius ludovicianus*) is a State species of concern. This species nests in broken woodlands, savannahs, riparian, and other woodlands. Loggerhead shrikes prefer open country with perches for scanning and hunting, and dense shrubs and brush for nesting.

The CNDDDB does not contain any records of loggerhead shrike within 10 miles of the project site. Suitable habitat occurs on the project site, and this species could nest and/or forage here. Implementation of Mitigation Measure BR-4 will reduce impacts to less than significant levels.

Mitigation Measure BR-4: Direct take of nesting loggerhead shrikes would be in violation of the Fish and Game Code and MBTA. Loggerhead shrike is a covered species under the SJMSCP. The following mitigation measures are consistent with the SJMSCP Incidental Take Minimization Measures for loggerhead shrike and the provisions of the MBTA.

1. Prior to issuance of a grading permit, the project proponent shall implement the SJMSCP conservation strategy, as described in Mitigation Measure BR-1, to provide compensation pursuant to the SJMSCP.
2. If project construction is to begin during the nesting season (March 1 - September 15), all suitable nesting habitat on the project site and within 100 feet of the limits of work shall be surveyed by a qualified biologist prior to initiating construction-related activities. Surveys shall be conducted no more than 14 days prior to the start of work.
3. A 100-foot setback from nesting areas shall be established and maintained during the nesting season for the period encompassing nest building, and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin.

during the nesting season in the presence of nests which are known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.

Implementation of Mitigation Measure BR-4 prevents the conditions outlined in Significance Criteria BR-a through BR-d from occurring and reduces this impact to less than significant.

Impact BR-5: Implementation of the project could impact giant garter snake.

The giant garter snake (*Thamnophis gigas*) is a federal and State threatened species. It occurs in the Sacramento and San Joaquin Valleys in California. This species inhabits areas in the vicinity of freshwater marshes, ponds, and slow moving streams with dense aquatic vegetation, and prefers water depths of at least one foot. Optimal giant garter snake habitat includes still or slow moving waters with emergent vegetation, overhanging tree canopy, and pools deeper than approximately 30 inches. Adjacent upland habitat above flood elevations is also important. The giant garter snake occupies small mammal burrows and other soil crevices above prevailing flood elevations during its winter dormancy period.

The drainage ditches on the project site do not provide suitable aquatic habitat for giant garter snake, but potential aquatic habitat is present in the drainage ditch adjacent to the southern border of the project site. The banks of this drainage ditch are very steep, limiting access to the adjacent upland habitat by giant garter snakes that may be utilizing the ditch. Potential upland habitat is present within 200 feet of this ditch. The croplands on the project site do not provide suitable giant garter snake upland habitat due to frequent disturbance from agricultural operations (i.e., discing). The closest CNDDDB occurrence for giant garter snake is approximately 2.7 miles north of the project site on Shin Kee Tract. Implementation of Mitigation Measure BR-5 will reduce impacts to giant garter snake to less than significant levels.

Mitigation Measure BR-5: The following mitigation measures consistent with those listed in the SJMSCP for giant garter snake shall be adhered to where applicable.

1. The project shall implement the SJMSCP conservation strategy, which includes payment of appropriate fees to SJCOG for conversion of undeveloped lands and implementation of the Incidental Take Minimization Measures for giant garter snake, as described below. Documentation of fee payment shall be provided to the USFWS prior to the start of construction.
2. Construction shall occur during the active period for the snake, between May 1 and October. Between October 2 and April 30 contact the Service's Sacramento Fish and Wildlife Office to determine if additional measures are necessary to minimize and avoid take.
3. Limit vegetation clearing within 200 feet of the banks of potential giant garter snake aquatic habitat to the minimal area necessary.
4. Confine the movement of heavy equipment within 200 feet of the banks of potential giant garter snake aquatic habitat to existing roadways to minimize habitat disturbance.
5. Prior to ground disturbance, all on-site construction personnel shall be given instruction regarding the presence of SJMSCP Covered Species and the importance of avoiding impacts to these species and their habitats.

6. In areas where wetlands, irrigation ditches, marsh areas or other potential giant garter snake habitats are being retained on the site:
 - a. Install temporary fencing at the edge of the construction area and the adjacent wetland, marsh, or ditch;
 - b. Restrict working areas, spoils and equipment storage and other project activities to areas outside of marshes, wetlands and ditches; and
 - c. Maintain water quality and limit construction runoff into wetland areas through the use of hay bales, filter fences, vegetative buffer strips, or other accepted equivalents.
7. If on-site wetlands, irrigation ditches, marshes, etc. are being relocated in the vicinity: the newly created aquatic habitat shall be created and filled with water prior to dewatering and destroying the pre-existing aquatic habitat. In addition, non-predatory fish species that exist in the aquatic habitat and which are to be relocated shall be seined and transported to the new aquatic habitat as the old site is dewatered.
8. If wetlands, irrigation ditches, marshes, etc. shall not be relocated in the vicinity, then the aquatic habitat shall be dewatered at least two weeks prior to commencing construction.
9. Pre-construction surveys for the giant garter snake (conducted after completion of environmental reviews and prior to ground disturbance) shall occur within 24 hours of ground disturbance.
10. Other provisions of the USFWS Standard Avoidance and Minimization Measures during Construction Activities in Giant Garter Snake Habitat shall be implemented (excluding programmatic mitigation ratios which are superseded by the SJMSCP's mitigation ratios).
11. Survey of the project area shall be repeated if a lapse in construction activity of two weeks or greater has occurred. If a snake is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the snake shall not be harmed. Report any sightings and any incidental take to the Service immediately by telephone at (916) 414-6600.
12. Following project completion, all areas temporarily disturbed during construction shall be restored following the "Guidelines for Restoration and/or Replacement of Giant Garter Snake Habitat" outlined below.
 - a. The disturbed area shall be regraded to its preexisting contour and ripped, if necessary, to decompact the soil.
 - b. The area shall be hydroseeded. Hydroseed mix shall contain at least 20-40 percent native grass seeds. Some acceptable native grasses include annual fescue (*Vulpia* spp.), California brome (*Bromus carinatus*), blue wildrye (*Elymus glaucus*), and needle grass (*Nassella* spp.). The seed mix shall also contain 2-10 percent native forb seeds, five percent rose clover (*Trifolium hirtum*), and five percent alfalfa (*Medicago sativa*). Approximately 40-68 percent of the mixture may be non-aggressive European annual grasses, such as wild oats (*Avena sativa*), wheat (*Triticum* sp.), and barley (*Hordeum vulgare*). Aggressive non-native grasses shall not be included in the seed mix. These grasses include perennial ryegrass (*Lolium perenne*), cheatgrass (*Bromus tectorum*), fescue (*Festuca* sp.), giant reed (*Arundo donax*), medusa-head (*Taeniatherum caput-*

medusae), or Pampas grass (*Cortaderia selloana*). Endophyte-infected grasses shall not be included in the seed mix.

In addition to the above measures, the following avoidance and minimization measures shall also be implemented:

13. All construction shall be conducted during daylight hours.
14. Measures consistent with the current Caltrans' Construction Site Best Management Practices (BMPs) Manual (including the Storm Water Pollution Prevention Plan [SWPPP] and Water Pollution Control Program [WPCP] Manuals [http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf]) shall be implemented to minimize effects to giant garter snake (e.g., siltation, etc.) during construction.

Implementation of Mitigation Measure BR-5 prevents the conditions outlined in Significance Criteria BR-a through BR-d from occurring and reduces this impact to less than significant.

Impact BR-6: Implementation of the project could impact wetlands.

The drainage system for the study area consists of a levee toe drain and two drainage ditches. Per Corps regulations (Preamble Section 328.3 Definitions) the Corps does not generally consider non-tidal drainage and irrigation ditches excavated on dry land to be waters of the U.S. The Corps does, however, reserve the right to regulate these ditches on a case by case basis.

Approximately 0.86 acre of areas meeting Corps criteria for wetlands was identified in the levee toe drain and irrigation ditches in the study area. However, the wetlands on the project site are not expected to be considered waters of the United States (subject to Corps verification). Implementation of Mitigation Measure BR-6 will reduce wetland impacts to less than significant levels.

Mitigation Measure BR-6: The project shall implement the SJMSCP conservation strategy, which includes payment of appropriate fees to SJCOG for conversion of undeveloped lands. Lands acquired and preserved under the conservation strategy will provide equivalent habitat to mitigate the loss of wetlands associated with the drainage ditches. If the wetland areas are regulated by the ACOE and/or RWQCB, additional wetlands mitigation may be required by those agencies for the loss of 0.86 acre of wetlands. This mitigation may be accomplished through purchase of appropriate wetlands mitigation credits from an approved mitigation bank that services the project area. In lieu of purchasing mitigation credits, the project may implement a wetlands mitigation plan that provides equivalent wetlands replacement in accordance with agency requirements.

Implementation of Mitigation Measure BR-6 prevents the conditions outlined in Significance Criteria BR-a through BR-d from occurring and reduces this impact to less than significant.

4.4.4 Level Of Significance After Mitigation

Potential impacts to biological resources from the proposed project will be mitigated to levels less than significant with implementation of the above mitigation measures.

4.5 NOISE

This section of the EIR describes potential impacts related to noise as a result of the proposed project. The analysis focuses on potential noise impacts to on-site and off-site noise-sensitive land uses in the project area. Potential noise impacts were evaluated against the City's noise standards within the Noise Element of the General Plan and Municipal Code. Significant impacts are identified for each land use, and mitigation measures are identified to address these impacts. This section was prepared by LSA Associates, Inc., (LSA).

4.5.1 Existing Setting

Fundamentals of Noise

Noise Definition. Noise impacts can be described in three categories. The first is audible impact, which refers to increases in noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3.0 decibels (dB) or greater, since this level has been found to be barely perceptible in exterior environments. The second category, potentially audible, refers to a change in the noise level between 1.0 and 3.0 dB. This range of noise levels has been found to be noticeable only in laboratory environments. The last category is changes in noise levels of less than 1.0 dB, which are inaudible to the human ear. The decrease in noise level due to distance divergence was also accounted for in the analysis of the effects of construction noise associated with the proposed project.

Characteristics of Sound. Sound is increasing to such disagreeable levels in our environment that it can threaten our quality of life. Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep. To the human ear, sound has two significant characteristics: pitch and loudness. Pitch is generally an annoyance, while loudness can affect our ability to hear. Pitch is the number of complete vibrations or cycles per second of a wave that result in the tone's range from high to low. Loudness is the strength of a sound that describes a noisy or quiet environment and is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves combined with the reception characteristics of the human ear. Sound intensity refers to how hard the sound wave strikes an object, which in turn produces the sound's effect. This characteristic of sound can be precisely measured with instruments. The analysis of a project defines the noise environment of the project area in terms of sound intensity and its effect on adjacent sensitive land uses.

Measurement of Sound. Sound intensity is measured through the A-weighted scale (i.e., dBA) to correct for the relative frequency response of the human ear. That is, an A-weighted noise level deemphasizes low and very high frequencies of sound similar to the human ear's deemphasis of these frequencies. Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale, representing points on a sharply rising curve. For example, 10 decibels are 10 times more intense than 1 decibel, 20 decibels are 100 times more intense, and 30 decibels are 1,000 times more intense. Thirty decibels represent 1,000 times as much acoustic energy as one decibel. A sound as soft as human breathing is about ten times greater than zero decibel. The decibel system of measuring sound gives a rough connection between the physical intensity of sound and its perceived loudness to

the human ear. A ten decibel increase in sound level is perceived by the human ear as only a doubling of the loudness of the sound. Ambient sounds generally range from 30 dBA (very quiet) to 100 dBA (very loud).

Sound levels are generated from a source, and their decibel level decreases as the distance from that source increases. Sound dissipates exponentially with distance from the noise source. For a single point source, sound levels decrease approximately six decibels for each doubling of distance from the source. This drop-off rate is appropriate for noise generated by stationary equipment. If noise is produced by a line source such as highway traffic or railroad operations, the sound decreases three decibels for each doubling of distance in a hard site environment. Line source noise in a relatively flat environment with absorptive vegetation decreases four and one-half decibels for each doubling of distance.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. However, the predominant rating scales for human communities in the State of California are the Equivalent-Continuous sound level (L_{eq}) and Community Noise Equivalent Level (CNEL) based on A-weighted decibels (dBA). L_{eq} is the total sound energy of time-varying noise over a sample period. CNEL is the time-varying noise over a 24-hour period, with a weighting factor of 5 dBA applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and with a weighting factor of 10 dBA from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). The noise adjustments are added to the noise events occurring during the more sensitive hours. Day-night average noise (L_{dn}) is similar to the CNEL but without the adjustment for nighttime noise events. CNEL and L_{dn} are normally exchangeable and within 1 dB of each other. Other noise-rating scales of importance when assessing annoyance factor include the maximum noise level, or L_{max} , and percentile noise exceedance levels, or L_N . L_{max} is the highest exponential-time-averaged sound level that occurs during a stated time period. It reflects peak operating conditions and addresses the annoying aspects of intermittent noise. L_N is the noise level that is exceeded "N" percent of the time during a specified time period. For example, the L_{10} noise level represents the noise level exceeded 10 percent of the time during a stated period. The L_{50} noise level represents the median noise level. Half the time the noise level exceeds this level and half the time it is less than this level. The L_{90} noise level represents the noise level exceeded 90 percent of the time and is considered the lowest noise level experienced during a monitoring period. It is normally referred to as the background noise level.

Psychological and Physiological Effects of Noise. Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects our entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions and thereby affecting blood pressure, functions of the heart, and the nervous system. In comparison, extended periods of noise exposure above 90 dBA would result in permanent cell damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear even with short-term exposure. This level of noise is called the threshold of feeling. As the sound reaches 140 dBA, the tickling sensation is replaced by the feeling of pain in the ear. This is called the threshold of pain. Dizziness and loss of equilibrium may occur between 160 and 165 dBA. The ambient or background noise problem is widespread and generally more concentrated in urban areas than in outlying less developed areas.

Table 4.5.A provides definitions of acoustical terms used in this document. Table 4.5.B describes common sounds for reference. Table 4.5.C shows land use compatibility for exterior community noise as recommended by the California Department of Health, Office of Noise Control.

Table 4.5.A: Definitions of Acoustical Terms

Term	Definitions
Decibel, dB	A unit of level that denotes the ratio between two quantities that are proportional to power; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
Frequency, Hz	Of a function periodic in time, the number of times that the quantity repeats itself in one second (i.e., number of cycles per second).
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted, unless reported otherwise.
L ₀₁ , L ₁₀ , L ₅₀ , L ₉₀	The fast A-weighted noise levels that are equaled or exceeded by a fluctuating sound level 1 percent, 10 percent, 50 percent, and 90 percent of a stated time period.
Equivalent Continuous Noise Level, L _{eq}	The level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time-varying sound.
Community Noise Equivalent Level, CNEL	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 5 dBA to sound levels occurring in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 dBA to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level, L _{dn}	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 dBA to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
L _{max} , L _{min}	The maximum and minimum A-weighted sound levels measured on a sound level meter, during a designated time interval, using fast time averaging.
Ambient Noise Level	The all encompassing noise associated with a given environment at a specified time, usually a composite of sound from many sources at many directions, near and far; no particular sound is dominant.
Intrusive	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: Handbook of Acoustical Measurements and Noise Control 1991.

Table 4.5.B: Common Sound Levels and Their Sources

Noise Source	A-Weighted Sound Level in Decibels	Noise Environment	Subjective Evaluation
Near Jet Engine	140	Deafening	128 times as loud
Civil Defense Siren	130	Threshold of Pain	64 times as loud
Hard Rock Band	120	Threshold of Feeling	32 times as loud
Accelerating Motorcycle at a Few Feet Away	110	Very Loud	16 times as loud
Pile Driver; Noisy Urban Street/Heavy City Traffic	100	Very Loud	8 times as loud
Ambulance Siren; Food Blender	95	Very Loud	
Garbage Disposal	90	Very Loud	4 times as loud
Freight Cars; Living Room Music	85	Loud	
Pneumatic Drill; Vacuum Cleaner	80	Loud	2 times as loud
Busy Restaurant	75	Moderately Loud	
Near Freeway Auto Traffic	70	Moderately Loud	Baseline
Average Office	60	Quiet	One-half as loud
Suburban Street	55	Quiet	
Light Traffic; Soft Radio Music in Apartment	50	Quiet	One-quarter as loud
Large Transformer	45	Quiet	
Average Residence without Stereo Playing	40	Faint	One-eighth as loud
Soft Whisper	30	Faint	
Rustling Leaves	20	Very Faint	
Human Breathing	10	Very Faint	Threshold of Hearing
	0	Very Faint	

Source: Compiled by LSA Associates, Inc. 1998.

Table 4.5.C: Land Use Compatibility for Exterior Community Noise

Land Use Category	Noise Range (Ldn or CNEL), dB			
	I	II	III	IV
Passively-used open spaces	50	50–55	55–70	70+
Auditoriums, concert halls, amphitheaters	45–50	50–65	65–70	70+
Residential: low-density single-family, duplex, mobile homes	50–55	55–70	70–75	75+
Residential: multifamily	50–60	60–70	70–75	75+
Transient lodging: motels, hotels	50–60	60–70	70–80	80+
Schools, libraries, churches, hospitals, nursing homes	50–60	60–70	70–80	80+
Actively used open spaces: playgrounds, neighborhood parks	50–67	—	67–73	73+
Golf courses, riding stables, water recreation, cemeteries	50–70	—	70–80	80+
Office buildings, business commercial and professional	50–67	67–75	75+	—
Industrial, manufacturing, utilities, agriculture	50–70	70–75	75+	—

Source: Office of Noise Control, California Department of Health 1976.

Noise Range I—Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Noise Range II—Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.

Noise Range III—Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Noise Range IV—Clearly Unacceptable: New construction or development should generally not be undertaken.

Sensitive Land Uses in the Project Vicinity. Certain land uses are considered to be more sensitive to noise than others. Examples of these include residential areas, educational facilities, hospitals, childcare facilities, and senior housing. Residential land uses in Spanos Park West are located approximately one mile to the east of the project boundary although residential uses in the adjacent Westlake Village project are under construction. These sensitive land uses may potentially be affected by the noise generated during project construction and operational noise once the project is completed.

Overview of the Existing Noise Environment. The primary existing noise sources in the project area are transportation facilities. Traffic on Interstate 5 (I-5), Eight Mile Road, Trinity Parkway, and other local streets is the dominant source contributing to the ambient noise levels in the project vicinity. Noise from motor vehicles is generated by engine vibrations, the interaction between the tires and the road, and the exhaust system. Noise levels on and in the vicinity of the project site will change as a result of the proposed project. Potential noise impacts associated with the project include construction noise and road noise due to increases in vehicular traffic.

Existing Traffic Noise. The Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used to evaluate traffic-related noise conditions in the vicinity of the project site. This model requires various parameters, including traffic volumes, vehicle mix, vehicle speed, and roadway geometry to compute typical equivalent noise levels during daytime, evening, and nighttime hours. The existing average daily traffic (ADT) volumes in the area were taken from the *Traffic Impact Analysis* prepared for this project (Fehr & Peers, April 2006). The resultant noise levels are weighted and summed over 24-hour periods to determine the CNEL values. Table 4.5.D provides the existing (2005) traffic noise levels adjacent to roadway segments in the project vicinity. These noise levels represent worst-case scenarios, which assume that no shielding is provided between the traffic and the location where the noise contours are drawn. Note that the portion of Eight Mile Road west of Mokelumne Circle is the only roadway modeled that is near the proposed project. The rest of the roadways are analyzed to determine the affect of the proposed project's traffic on neighboring areas. Traffic-related noise levels in the vicinity of the proposed project are low to moderate.

Table 4.5.E provides the traffic noise levels from existing traffic combined with traffic related to approved nearby projects. Even with these additional projects the traffic-related noise levels in the vicinity of the proposed project are low to moderate.

Table 4.5.D: Existing (2005) Traffic Noise Levels

Roadway Segment	ADT	Center-line to 70 CNEL (feet)	Center-line to 65 CNEL (feet)	Center-line to 60 CNEL (feet)	CNEL (dBA) 50 Feet from Outermost Lane
Eight Mile Road west of Mokelumne Circle	3,200	< 50	< 50	75	61.9
Eight Mile Road between Mokelumne Circle and Trinity Parkway	6,800	< 50	58	124	65.2
Eight Mile Road between Trinity Parkway and Thornton Road	13,500	< 50	91	196	68.2
Eight Mile Road east of Thornton Road	9,900	< 50	105	223	68.0
Scott Creek Drive west of Mokelumne Circle	2,800	< 50	< 50	69	61.4
Scott Creek Drive east of Mokelumne Circle	1,000	< 50	< 50	< 50	56.9
Consumnes Drive west of Trinity Parkway	2,800	< 50	< 50	69	61.4
McAuliffe Road east of Trinity Parkway	4,500	< 50	< 50	94	63.4
Hammer Lane between Trinity Parkway and Mariners Drive	300	< 50	< 50	< 50	52.8
Hammer Lane between Mariners Drive and Thornton Road	21,300	82	173	371	71.3
Hammer Lane east of Thornton Road	28,300	98	209	449	72.5
Mokelumne Circle between Eight Mile Road and Scott Creek Drive	4,000	< 50	< 50	87	62.9
Mokelumne Circle south of Scott Creek Drive	2,400	< 50	< 50	62	60.7
Trinity Parkway south of Eight Mile Road	8,400	< 50	94	200	67.3
Trinity Parkway north of Cosumnes Drive	4,700	< 50	65	137	64.7
Trinity Parkway between Cosumnes Drive and McAuliffe Drive	4,500	< 50	64	133	64.5
Trinity Parkway/Trinity Parkway between McAuliffe Road and Otto Drive	100	< 50	< 50	< 50	48.0
Mariners Drive between Otto Drive and Hammer Lane	4,400	< 50	< 50	93	63.3
Mariners Drive south of Hammer Lane	8,000	< 50	64	138	65.9
Thornton Road north of Eight Mile Road	3,900	< 50	< 50	86	62.8
Thornton Road between Eight Mile Road and AG Spanos Blvd.	8,500	< 50	95	202	67.3
Thornton Road between AG Spanos Blvd. and Wagner Heights Road	16,300	69	145	311	70.1
Thornton Road between Wagner Heights Road and Hammer Lane	19,300	77	162	348	70.9
Thornton Road south of Hammer Lane	18,900	76	160	343	70.8

Source: LSA Associates, Inc., May 2006.

Table 4.5.E: Existing (2005) With Approved Projects Traffic Noise Levels

Roadway Segment	ADT	Center-line to 70 CNEL (feet)	Center-line to 65 CNEL (feet)	Center-line to 60 CNEL (feet)	CNEL (dBA) 50 Feet from Outermost Lane
Eight Mile Road west of Primary Entrance	5,100	< 50	69	144	65.1
Eight Mile Road between Primary Entrance and Secondary Entrance	9,700	< 50	104	220	67.9
Eight Mile Road between Secondary Entrance and Mokelumne Circle	15,600	67	141	302	69.9
Eight Mile Road between Mokelumne Circle and Trinity Parkway	21,400	82	174	373	71.3
Eight Mile Road between Trinity Parkway and Thornton Road	45,100	134	285	612	74.1
Eight Mile Road east of Thornton Road	27,400	96	205	439	72.4
Scott Creek Drive west of Mokelumne Circle	9,300	< 50	71	153	66.6
Scott Creek Drive east of Mokelumne Circle	5,300	< 50	< 50	105	64.1
Consumnes Drive west of Trinity Parkway	10,200	< 50	76	162	67.0
Consumnes Drive east of Trinity Parkway	2,400	< 50	< 50	62	60.7
McAuliffe Road east of Trinity Parkway	14,600	< 50	96	206	68.5
Hammer Lane between Trinity Parkway and Mariners Drive	600	< 50	< 50	< 50	55.8
Hammer Lane between Mariners Drive and Thornton Road	28,000	98	207	446	72.5
Hammer Lane east of Thornton Road	29,000	100	212	456	72.6
Primary Entrance south of Eight Mile Road	5,900	< 50	53	113	64.6
Secondary Entrance south of Eight Mile Road	11,300	< 50	81	174	67.4
Mokelumne Circle between Eight Mile Road and Scott Creek Drive	9,600	< 50	73	156	66.7
Mokelumne Circle south of Scott Creek Drive	5,000	< 50	< 50	101	63.9
Trinity Parkway south of Eight Mile Road	42,900	129	275	592	74.3
Trinity Parkway north of Cosumnes Drive	24,700	90	191	410	71.9
Trinity Parkway between Cosumnes Drive and McAuliffe Drive	25,900	93	197	423	72.1
Trinity Parkway/Trinity Parkway between McAuliffe Road and Otto Drive	13,100	61	126	269	69.2
Mariners Drive between Otto Drive and Hammer Lane	18,700	53	113	243	69.6
Mariners Drive south of Hammer Lane	9,400	< 50	72	154	66.6
Thornton Road north of Eight Mile Road	5,500	< 50	< 50	108	64.3
Thornton Road between Eight Mile Road and AG Spanos Blvd.	11,800	57	118	251	68.7
Thornton Road between AG Spanos Blvd. and Wagner Heights Road	22,600	85	180	386	71.6
Thornton Road between Wagner Heights Road and Hammer Lane	24,600	90	190	409	71.9
Thornton Road south of Hammer Lane	22,500	85	180	385	71.5

Source: LSA Associates, Inc., May 2006.

4.5.2 Impact Significance Criteria

A project will normally have a significant noise-related effect on the environment if it will conflict with the adopted environmental plans and goals of the community in which it is located or increase noise levels by 3 dBA or more on adjacent noise-sensitive land uses. The applicable noise standards governing the project site are the criteria in the City's Noise Element of the General Plan and the Municipal Code.

City of Stockton Noise Standards

Noise Element of the General Plan. Applicable policies and standards governing environmental noise in the City of Stockton are set forth in the Noise Element of the General Plan. The goals of the Noise Element, compiled under the mandate of Section 65302(f) of the California Government Code and guidelines prepared by the California Department of Health Services (DHS), are to ensure that all areas of the City are free from excessive noise and that appropriate maximum levels are adopted for residential, commercial, and industrial areas; to reduce new noise sources to the maximum extent possible; to reduce, to the maximum extent possible, the impact of noise within the City; and to ensure that land uses are compatible with the related noise characteristics of those uses. The following summarizes the City's noise standards.

NOI-a The General Plan of the City of Stockton considers that new residential development shall not be allowed where the ambient noise level due to locally regulated noise sources (i.e., all noise sources other than roadway, railroad, and aircraft noise) will exceed the noise level standards as set forth below in Table 4.5.F.

Each of the noise level standards specified in Table 4.5.F shall be reduced by five dBA for simple tone noises, noises consisting of primarily speech or music, or for recurring impulsive noises.

Table 4.5.F: Exterior Noise Level Standards for Locally Regulated Noise Sources

Noise Level Descriptor	Daytime	Nighttime
	(7:00 a.m.–10:00 p.m.)	(10:00 p.m. –7:00 a.m.)
Hourly L_{eq} , dBA	55	45
Maximum level, L_{max} , dBA	75	65

Source: City of Stockton, November 1998

NOI-b The compatibility of proposed projects with existing and future noise levels due to traffic on public roadways, railroad line operations, and aircraft in flight shall be evaluated by comparison to Table 4.5.G.

Table 4.5.G: Land Use Compatibility for Community Noise Environments

Land Use Category	Normally Acceptable ⁹	Conditionally Acceptable ¹⁰	Normally Unacceptable ¹¹	Clearly Unacceptable ¹²
Residential	50–60	60–70	70–75	75–85
Transient Lodging - Motels, Hotels	50–60	60–70	70–80	80–85
Schools, Libraries, Churches, Hospitals, Nursing Homes	50–60	60–70	70–80	80–85
Auditoriums, Concert Halls, Amphitheatres, Sport Arenas	N/A	50–75	N/A	75–85
Playgrounds, Neighborhood Parks	50–70	N/A	70–75	75–85
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50–75	N/A	75–80	80–85
Office Buildings, Business Commercial and Professional	50–67.5	67.5–75	75–85	N/A
Industrial, Manufacturing Utilities, Agriculture	50–70	70–80	80–85	N/A

Source: City of Stockton, November 1998

NOI-c New development of residential land uses will not be permitted in areas exposed to existing or projected exterior noise levels exceeding 60 dBA L_{dn} /CNEL or the standards of Table 4.5.F unless the project design includes effective mitigation measures to reduce noise to the following levels:

- 1) For noise due to traffic on public roadways, railroad line operations, and aircraft in flight: 60 dBA L_{dn} /CNEL or less in outdoor activity areas, and 45 dBA L_{dn} /CNEL or less in indoor areas. Where it is not possible to reduce exterior noise to 60 dBA L_{dn} /CNEL or less by incorporating a practical application of the best available noise-reduction technology, an exterior noise level of up to 65 dBA L_{dn} /CNEL will be allowed. Under no circumstances will interior noise levels be permitted to exceed 45 dBA L_{dn} /CNEL with the windows and doors closed.
- 2) For noise from sources other than roadways, railroads, and aircraft, comply with the performance standards contained in Table 4.5.F.

⁹ Normally Acceptable - Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

¹⁰ Conditionally Acceptable - New construction of development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems of air conditioning, will normally suffice.

¹¹ Normally Unacceptable - New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and the needed noise insulation features included in the design.

¹² Clearly Unacceptable - New construction or development should generally not be undertaken.

NOI-d Noise produced by commercial uses shall not exceed 75 dBA L_{dn} /CNEL at the nearest property line.

NOI-e Noise produced by industrial uses shall not exceed 80 dBA L_{dn} /CNEL at the nearest property line.

NOI-f The Office of Noise Control under the California Health and Safety Code has promulgated a 45 dBA CNEL standard for interior noise levels of multifamily residential units. The City also enforces building sound transmission and indoor fresh air ventilation requirements specified in Chapter 35 of the Uniform Building Code.

Municipal Code

Section 16-340.030 of the City's Municipal Code limits construction hours and loading and unloading activities across residential property lines.

The following acts are a violation of this Division and are therefore prohibited.

- a. **Construction Noise.** Operating or causing the operation of tools or equipment on private property used in alteration, construction, demolition, drilling, or repair work between the hours of 10:00 p.m. and 7:00 a.m. so that the sound creates a noise disturbance across a residential property line, except for emergency work of public service utilities, is prohibited.
- b. **Loading and Unloading Operations.** Loading, unloading, opening, closing, or other handling of boxes, crates, containers, building materials, garbage cans, or similar objects on private property between the hours of 10:00 p.m. and 7:00 a.m. in a manner to cause a noise disturbance is prohibited.
- c. **Sweepers and Associated Equipment.** Operating or allowing the operation of sweepers or associated sweeping equipment (e.g., blowers) on private property between the hours of 10:00 p.m. and 7:00 a.m. the following day in or adjacent to a residential zoning district is prohibited.

4.5.3 Impacts And Mitigation Measures

Potentially Significant Impacts

Impact NOI-1: The project could create short-term construction related impacts.

Short-term noise impacts would be associated with excavation, grading, and the erection of buildings on site during project construction. Construction-related short-term noise levels would be higher than existing ambient noise levels in the project area at the present time, but would no longer occur once construction of the project is complete.

Two types of short-term noise impacts could occur during construction of the proposed project. First, construction crew commutes and the transport of construction equipment and materials to the project site would incrementally increase noise levels on access roads leading to the site. A relatively high single-event noise exposure potential will exist at a maximum level of 87 dBA L_{max} with trucks passing at 50 feet. However, the projected construction traffic will be minimal when compared to the existing traffic volumes on the I-5 freeway, Eight Mile Road, Trinity Parkway, and other affected streets, and its associated long-term noise level change will not be perceptible. Therefore, short-term construction-related worker commutes and equipment transport noise impacts would not be substantial.

The second type of short-term noise impact is related to noise generated during excavation, grading, and construction on site. Construction is performed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on site. Therefore, the noise levels vary as construction progresses. Despite the variety in the types and sizes of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table 4.5.H lists maximum noise levels recommended for noise impact assessments for typical construction equipment based on a distance of 50 feet between the equipment and a noise receptor. Typical maximum noise levels range up to 91 dBA L_{max} at 50 feet during the noisiest construction phases. The site preparation phase, which includes excavation and grading of the site, tends to generate the highest noise levels because the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery such as backfillers, bulldozers, draglines, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve one or two minutes of full-power operation followed by three or four minutes at lower-power settings.

Construction of the proposed project is expected to require the use of earthmovers, bulldozers, water trucks, and pickup trucks. This equipment would be used on site. Based on Table 4.5.H, the maximum noise level generated by each earthmover on site is assumed to be 88 dBA L_{max} at 50 feet from the earthmover. Each bulldozer would also generate 88 dBA L_{max} at 50 feet. The maximum noise level generated by water and pickup trucks is approximately 86 dBA L_{max} at 50 feet from these vehicles. Each doubling of a sound source with equal strength increases the noise level by 3 dBA. Assuming that each piece of construction equipment operates at some distance from the other equipment, the worst-case combined noise level at each individual residence during this phase of construction would be 91 dBA L_{max} at a distance of 50 feet from the active construction area. The closest residences are located approximately one mile to the east so would be subject to short-term noise reaching 61 dBA L_{max} generated by construction activities on site. Compliance with mitigation listed below will reduce the construction noise impacts to a less than significant level. When combined with the much lower ambient noise level with no construction, the 24-hour averaged noise level would be 60 dBA CNEL or lower at the residences nearest the project site.

Mitigation Measure NOI-1a: Temporary noise impacts resulting from project construction shall be minimized by restricting hours of operation noise-generating equipment to 7:00 a.m. to 7:00 p.m. Monday through Saturday when such equipment is to be used near noise-sensitive land uses. No construction activities shall occur on Sundays or national holidays.

Mitigation Measure NOI-1b: All construction equipment shall be fitted with factory equipped mufflers, and shall be maintained in good working order, at all times.

Table 4.5.H: Typical Maximum Construction Equipment Noise Levels (L_{max})

Type of Equipment	Range of Maximum Sound Level Measured at 50 feet (dBA)	Suggested Maximum Sound Level for Analysis at 50 feet (dBA)
Pile drivers (12,000 to 18,000 ft-lb/blow)	81–96	93
Rock drills	83–99	96
Jackhammers	75–85	82
Pneumatic tools	78–88	85
Pumps	74–84	80
Scrapers	83–91	87
Haul trucks	83–94	88
Cranes	79–86	82
Portable generators	71–87	80
Rollers	75–82	80
Dozers	77–90	85
Tractors	77–82	80
Front-end loaders	77–90	86
Hydraulic backhoes	81–90	86
Hydraulic excavators	81–90	86
Graders	79–89	86
Air compressors	76–89	86
Trucks	81–87	86

Source: Bolt, Beranek, & Newman. Noise Control for Buildings and Manufacturing Plants 1987.

Impact NOI-2: Impacts from vehicular traffic could exceed the City’s noise standards for sensitive receptors (Significance Criterion NOI-d).

Noise-sensitive land uses such as residences and outdoor active use areas may be exposed to traffic noise levels exceeding the City’s noise standards. The projected future traffic volumes (Fehr & Peers, April 2006) for roadway segments in the project vicinity are used in the traffic noise impact analysis.

The FHWA Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used to evaluate future traffic-related noise conditions in the vicinity of the project site. Table 4.5.I shows the noise levels from the combination of the existing (2005) traffic plus the traffic related to nearby approved projects plus the traffic related to the proposed project. Tables 4.5.J and 4.5.K show the 2025 traffic noise levels scenarios without and with the project, respectively. Tables 4.5.L and 4.5.M show the 2035 traffic noise levels scenarios without and with the project, respectively. These noise levels represent the worst-case scenario, which assumes that no shielding is provided between the traffic and the location where the noise contours are drawn.

Based on the typical sound level reductions of buildings identified in Protective Noise Levels, Condensed Version of EPA Levels Document (November 1978, EPA-550/9-79-100), standard building construction in Southern California would provide 24 dBA (the national average is 25 dBA) or more in noise reduction from exterior to interior with windows and doors closed. With windows and doors open, the exterior-to-interior noise reduction drops to 12 dBA (the national average is 15 dBA) or more. Building structures that would be exposed to exterior noise exceeding 69 dBA CNEL would exceed the interior noise standard of 45 dBA CNEL with windows and doors closed and would require building facade upgrades such as double-paned windows. Also, building structures that would be exposed to exterior noise exceeding 57 dBA CNEL would exceed the interior noise standard of 45 dBA CNEL with windows and doors open and would require mechanical ventilation systems such as air-conditioning.

Off-Site Traffic Noise Impacts. Tables 4.5.I through 4.5.M provide the traffic noise levels and their associated distance to the roadway centerline under the 2005, 2025, and 2035 scenarios with traffic from both approved projects and the proposed project. Tables 4.5.I, 4.5.K, and 4.5.M also show a comparison of the traffic noise levels for the Build and No Build conditions. As shown, traffic trips associated with the proposed project would add incrementally to traffic noise along the roadways in the project vicinity. Project-related traffic would have a 3 dBA or higher traffic noise level increase along Scott Creek Drive east of Mokelumne Circle in 2025 only; however, the noise levels are low without the project, and with the project-related increase, would remain moderately low. The 65 dBA CNEL contour only extends 56 feet from the centerline of the roadway, barely past the edge of the roadway right-of-way. No mitigation measures are required along Scott Creek Drive.

Table 4.5.I: 2005 with Approved Projects Plus Project Traffic Noise Levels

Roadway Segment	ADT	Center-line to 70 CNEL (feet)	Center-line to 65 CNEL (feet)	Center-line to 60 CNEL (feet)	CNEL (dBA) 50 feet from Outermost Lane	Change from No Project Level (dBA)
Eight Mile Road west of Primary Entrance	8,600	< 50	96	204	67.4	2.3
Eight Mile Road between Primary Entrance and Secondary Entrance	14,200	64	133	284	69.5	1.6
Eight Mile Road between Secondary Entrance and Mokelumne Circle	23,300	87	184	394	71.7	1.8
Eight Mile Road between Mokelumne Circle and Trinity Parkway	29,500	101	215	461	72.7	1.4
Eight Mile Road between Trinity Parkway and Thornton Road	49,800	143	304	654	74.6	0.5
Eight Mile Road east of Thornton Road	28,900	100	212	455	72.6	0.2
Scott Creek Drive west of Mokelumne Circle	11,800	< 50	83	179	67.6	1.0
Scott Creek Drive east of Mokelumne Circle	7,800	< 50	63	136	65.8	1.7
Consumnes Drive west of Trinity Parkway	10,200	< 50	76	162	67.0	0.0
Consumnes Drive east of Trinity Parkway	2,400	< 50	< 50	62	60.7	0.0
McAuliffe Road east of Trinity Parkway	15,000	< 50	98	210	68.6	0.1
Hammer Lane between Trinity Parkway and Mariners Drive	600	< 50	< 50	< 50	55.8	0.0
Hammer Lane between Mariners Drive and Thornton Road	34,100	111	236	508	73.3	0.8
Hammer Lane east of Thornton Road	39,500	122	261	560	74.0	1.4
Primary Entrance south of Eight Mile Road	5,900	< 50	53	113	64.6	0.0
Secondary Entrance south of Eight Mile Road	9,500	< 50	72	155	66.7	-0.7
Mokelumne Circle between Eight Mile Road and Scott Creek Drive	9,600	< 50	73	156	66.7	0.0
Mokelumne Circle south of Scott Creek Drive	5,000	< 50	< 50	101	63.9	0.0
Trinity Parkway south of Eight Mile Road	43,800	131	279	600	74.4	0.1
Trinity Parkway north of Cosumnes Drive	26,900	95	202	434	72.3	0.4
Trinity Parkway between Cosumnes Drive and McAuliffe Drive	28,200	98	208	448	72.5	0.4
Trinity Parkway between McAuliffe Road and Otto Drive	15,000	66	138	294	69.8	0.6
Mariners Drive between Otto Drive and Hammer Lane	20,600	56	120	259	70.0	0.4
Mariners Drive south of Hammer Lane	9,400	< 50	72	154	66.6	0.0
Thornton Road north of Eight Mile Road	5,500	< 50	< 50	108	64.3	0.0
Thornton Road between Eight Mile Road and AG Spanos Blvd.	12,200	58	120	257	68.9	0.2
Thornton Road between AG Spanos Blvd. and Wagner Heights Road	23,400	87	184	395	71.7	0.1
Thornton Road between Wagner Heights Road and Hammer Lane	25,400	92	195	418	72.1	0.2
Thornton Road south of Hammer Lane	23,100	86	183	392	71.6	0.1

Source: LSA Associates, Inc., May 2006

Table 4.5.J: 2025 Without Project Traffic Noise Levels

Roadway Segment	ADT	Center-line to 70 CNEL (feet)	Center-line to 65 CNEL (feet)	Center-line to 60 CNEL (feet)	CNEL (dBA) 50 feet from Outermost Lane
Eight Mile Road west of Primary Entrance	7,400	< 50	87	184	66.7
Eight Mile Road between Primary Entrance and Secondary Entrance	10,600	56	111	234	67.8
Eight Mile Road between Secondary Entrance and Mokelumne Circle	10,400	< 50	109	231	67.8
Eight Mile Road between Mokelumne Circle and Trinity Parkway	23,700	89	186	399	71.3
Eight Mile Road between Trinity Parkway and Thornton Road	45,600	139	289	616	73.1
Eight Mile Road east of Thornton Road	42,300	133	275	586	72.8
Scott Creek Drive west of Mokelumne Circle	9,200	< 50	71	152	66.5
Scott Creek Drive east of Mokelumne Circle	1,900	< 50	< 50	53	59.7
Consumnes Drive west of Trinity Parkway	10,300	< 50	76	163	67.0
Consumnes Drive east of Trinity Parkway	2,200	< 50	< 50	59	60.3
McAuliffe Road east of Trinity Parkway	13,500	< 50	91	196	68.2
Hammer Lane between Trinity Parkway and Mariners Drive	18,100	74	156	333	70.6
Hammer Lane between Mariners Drive and Thornton Road	34,700	113	240	514	73.0
Hammer Lane east of Thornton Road	41,800	128	271	582	73.8
Primary Entrance south of Eight Mile Road	7,200	< 50	60	129	65.5
Secondary Entrance south of Eight Mile Road	3,700	< 50	< 50	83	62.6
Mokelumne Circle between Eight Mile Road and Scott Creek Drive	14,300	< 50	95	203	68.4
Mokelumne Circle south of Scott Creek Drive	6,200	< 50	54	117	64.8
Trinity Parkway south of Eight Mile Road	33,700	110	235	504	73.3
Trinity Parkway north of Cosumnes Drive	24,000	88	187	402	71.8
Trinity Parkway between Cosumnes Drive and McAuliffe Drive	31,300	105	223	480	73.0
Trinity Parkway/between McAuliffe Road and Otto Drive	23,600	88	185	398	71.7
Trinity Parkway between Otto Drive and Hammer Lane	14,700	65	136	290	69.7
Trinity Parkway south of Hammer Lane	4,400	< 50	63	131	64.4
Mariners Drive between Otto Drive and Hammer Lane	9,000	< 50	70	149	66.4
Mariners Drive south of Hammer Lane	4,200	< 50	< 50	90	63.1
Thornton Road north of Eight Mile Road	6,500	< 50	80	169	66.1
Thornton Road between Eight Mile Road and AG Spanos Blvd.	17,600	73	153	327	70.5
Thornton Road between AG Spanos Blvd. and Wagner Heights Road	28,600	99	210	452	72.6
Thornton Road between Wagner Heights Road and Hammer Lane	25,900	93	197	423	72.1
Thornton Road south of Hammer Lane	24,200	89	188	404	71.8

Source: LSA Associates, Inc., May 2006

Table 4.5.K: 2025 With Project Traffic Noise Levels

Roadway Segment	ADT	Center-line to 70 CNEL (feet)	Center-line to 65 CNEL (feet)	Center-line to 60 CNEL (feet)	CNEL (dBA) 50 Feet from Outermost Lane	Change from No Project Level (dBA)
Eight Mile Road west of Primary Entrance	6,700	< 50	82	173	66.3	-0.4
Eight Mile Road between Primary Entrance and Secondary Entrance	13,400	63	129	273	68.9	1.1
Eight Mile Road between Secondary Entrance and Mokelumne Circle	16,700	72	148	316	69.8	2.0
Eight Mile Road between Mokelumne Circle and Trinity Parkway	30,000	103	218	467	72.4	1.1
Eight Mile Road between Trinity Parkway and Thornton Road	48,700	145	301	644	73.4	0.3
Eight Mile Road east of Thornton Road	40,400	129	267	569	72.6	-0.2
Scott Creek Drive west of Mokelumne Circle	13,600	< 50	91	197	68.2	1.7
Scott Creek Drive east of Mokelumne Circle	6,400	< 50	56	119	64.9	5.2
Consumnes Drive west of Trinity Parkway	10,300	< 50	76	163	67.0	0.0
Consumnes Drive east of Trinity Parkway	2,200	< 50	< 50	59	60.3	0.0
McAuliffe Road east of Trinity Parkway	14,100	< 50	94	201	68.4	0.2
Hammer Lane between Trinity Parkway and Mariners Drive	20,000	79	166	356	71.0	0.4
Hammer Lane between Mariners Drive and Thornton Road	35,900	116	245	526	73.1	0.1
Hammer Lane east of Thornton Road	42,300	129	273	586	73.8	0.0
Primary Entrance south of Eight Mile Road	7,200	< 50	60	129	65.5	0.0
Secondary Entrance south of Eight Mile Road	3,700	< 50	< 50	83	62.6	0.0
Mokelumne Circle between Eight Mile Road and Scott Creek Drive	14,300	< 50	95	203	68.4	0.0
Mokelumne Circle south of Scott Creek Drive	6,200	< 50	54	117	64.8	0.0
Trinity Parkway south of Eight Mile Road	34,900	113	240	516	73.4	0.1
Trinity Parkway north of Cosumnes Drive	18,500	75	158	338	70.7	-1.1
Trinity Parkway between Cosumnes Drive and McAuliffe Drive	30,900	104	221	476	72.9	-0.1
Trinity Parkway between McAuliffe Road and Otto Drive	27,600	97	206	441	72.4	0.7
Trinity Parkway between Otto Drive and Hammer Lane	16,500	70	146	313	70.2	0.5
Trinity Parkway south of Hammer Lane	4,400	< 50	63	131	64.4	0.0
Mariners Drive between Otto Drive and Hammer Lane	9,000	< 50	70	149	66.4	0.0
Mariners Drive south of Hammer Lane	4,200	< 50	< 50	90	63.1	0.0
Thornton Road north of Eight Mile Road	6,500	< 50	80	169	66.1	0.0
Thornton Road between Eight Mile Road and AG Spanos Blvd.	16,100	69	144	308	70.1	-0.4
Thornton Road between AG Spanos Blvd. and Wagner Heights Road	29,400	101	214	460	72.7	0.1
Thornton Road between Wagner Heights Road and Hammer Lane	26,700	95	201	432	72.3	0.2
Thornton Road south of Hammer Lane	24,800	90	191	411	72.0	0.2

Source: LSA Associates, Inc., May 2006

Table 4.5.L: 2035 Without Project Traffic Noise Levels

Roadway Segment	ADT	Center-line to 70 CNEL (feet)	Center-line to 65 CNEL (feet)	Center-line to 60 CNEL (feet)	CNEL (dBA) 50 feet from Outermost Lane
Eight Mile Road west of Primary Entrance	22,300	84	179	383	71.5
Eight Mile Road between Primary Entrance and Secondary Entrance	28,700	100	211	453	72.2
Eight Mile Road between Secondary Entrance and Mokelumne Circle	40,200	124	264	567	73.6
Eight Mile Road between Mokelumne Circle and Trinity Parkway	52,100	147	313	674	74.8
Eight Mile Road between Trinity Parkway and Thornton Road	63,900	171	360	771	74.6
Eight Mile Road east of Thornton Road	67,600	177	374	801	74.9
Scott Creek Drive west of Mokelumne Circle	5,400	< 50	< 50	106	64.2
Scott Creek Drive east of Mokelumne Circle	4,200	< 50	< 50	90	63.1
Consumnes Drive west of Trinity Parkway	13,600	< 50	91	197	68.2
Consumnes Drive east of Trinity Parkway	8,000	< 50	64	138	65.9
McAuliffe Road east of Trinity Parkway	9,200	< 50	71	152	66.5
Hammer Lane west of Trinity Parkway	2,700	< 50	< 50	95	62.3
Hammer Lane between Trinity Parkway and Mariners Drive	39,800	123	262	563	74.0
Hammer Lane between Mariners Drive and Thornton Road	52,000	147	313	673	74.7
Hammer Lane east of Thornton Road	49,500	142	303	651	74.5
Primary Entrance north of Eight Mile Road	2,700	< 50	< 50	67	61.2
Primary Entrance south of Eight Mile Road	6,600	< 50	57	122	65.1
Secondary Entrance south of Eight Mile Road	11,200	< 50	80	173	67.4
Mokelumne Circle north of Eight Mile Road	19,000	53	114	246	69.7
Mokelumne Circle between Eight Mile Road and Scott Creek Drive	8,600	< 50	67	145	66.2
Mokelumne Circle south of Scott Creek Drive	4,000	< 50	< 50	87	62.9
Trinity Parkway south of Eight Mile Road	34,100	111	236	508	73.3
Trinity Parkway north of Cosumnes Drive	30,900	104	221	476	72.9
Trinity Parkway between Cosumnes Drive and McAuliffe Drive	34,900	113	240	516	73.4
Trinity Parkway between McAuliffe Road and Otto Drive	31,200	105	223	479	73.0
Trinity Parkway between Otto Drive and Hammer Lane	26,100	93	198	425	72.2
Trinity Parkway south of Hammer Lane	24,800	90	191	411	72.0
Mariners Drive between Otto Drive and Hammer Lane	10,300	< 50	76	163	67.0
Mariners Drive south of Hammer Lane	4,700	< 50	< 50	97	63.6
Thornton Road north of Eight Mile Road	36,500	116	247	532	73.6
Thornton Road between Eight Mile Road and AG Spanos Blvd.	46,300	135	290	623	74.7
Thornton Road between AG Spanos Blvd. and Wagner Heights Road	48,800	140	300	645	74.9
Thornton Road between Wagner Heights Road and Hammer Lane	35,200	113	241	519	73.5
Thornton Road south of Hammer Lane	29,000	100	212	456	72.6

Source: LSA Associates, Inc., May 2006

Table 4.5.M: 2035 With Project Traffic Noise Levels

Roadway Segment	ADT	Center-line to 70 CNEL (feet)	Center-line to 65 CNEL (feet)	Center-line to 60 CNEL (feet)	CNEL (dBA) 50 Feet from Outermost Lane	Change from No Project Level (dBA)
Eight Mile Road west of Primary Entrance	29,200	100	213	458	72.7	1.2
Eight Mile Road between Primary Entrance and Secondary Entrance	36,100	116	246	528	73.2	1.0
Eight Mile Road between Secondary Entrance and Mokelumne Circle	43,900	132	280	601	74.0	0.4
Eight Mile Road between Mokelumne Circle and Trinity Parkway	55,800	154	328	705	75.0	0.2
Eight Mile Road between Trinity Parkway and Thornton Road	68,300	179	376	806	74.9	0.3
Eight Mile Road east of Thornton Road	69,200	180	379	813	75.0	0.1
Scott Creek Drive west of Mokelumne Circle	6,300	< 50	55	118	64.9	0.7
Scott Creek Drive east of Mokelumne Circle	5,100	< 50	< 50	102	64.0	0.9
Consumnes Drive west of Trinity Parkway	13,700	< 50	92	198	68.3	0.1
Consumnes Drive east of Trinity Parkway	8,000	< 50	64	138	65.9	0.0
McAuliffe Road east of Trinity Parkway	9,300	< 50	71	153	66.6	0.1
Hammer Lane west of Trinity Parkway	2,700	< 50	< 50	95	62.3	0.0
Hammer Lane between Trinity Parkway and Mariners Drive	40,500	124	265	570	74.1	0.1
Hammer Lane between Mariners Drive and Thornton Road	52,500	148	315	677	74.8	0.1
Hammer Lane east of Thornton Road	49,800	143	304	654	74.6	0.1
Primary Entrance north of Eight Mile Road	3,500	< 50	< 50	80	62.3	1.1
Primary Entrance south of Eight Mile Road	8,000	< 50	64	138	65.9	0.8
Secondary Entrance south of Eight Mile Road	11,300	< 50	81	174	67.4	0.0
Mokelumne Circle north of Eight Mile Road	19,000	53	114	246	69.7	0.0
Mokelumne Circle between Eight Mile Road and Scott Creek Drive	8,600	< 50	67	145	66.2	0.0
Mokelumne Circle south of Scott Creek Drive	4,000	< 50	< 50	87	62.9	0.0
Trinity Parkway south of Eight Mile Road	35,000	113	241	517	73.5	0.2
Trinity Parkway north of Cosumnes Drive	31,700	106	225	484	73.0	0.1
Trinity Parkway between Cosumnes Drive and McAuliffe Drive	35,800	114	244	525	73.5	0.1
Trinity Parkway between McAuliffe Road and Otto Drive	32,000	106	227	487	73.1	0.1
Trinity Parkway between Otto Drive and Hammer Lane	27,000	95	203	435	72.3	0.1
Trinity Parkway south of Hammer Lane	25,300	91	194	417	72.0	0.0
Mariners Drive between Otto Drive and Hammer Lane	10,400	< 50	77	164	67.1	0.1
Mariners Drive south of Hammer Lane	4,700	< 50	< 50	97	63.6	0.0
Thornton Road north of Eight Mile Road	36,700	116	248	534	73.7	0.1
Thornton Road between Eight Mile Road and AG Spanos Blvd.	46,900	137	292	628	74.7	0.0
Thornton Road between AG Spanos Blvd. and Wagner Heights Road	49,200	141	302	649	74.9	0.0
Thornton Road between Wagner Heights Road and Hammer Lane	35,400	114	242	521	73.5	0.0
Thornton Road south of Hammer Lane	29,200	100	213	458	72.7	0.1

Source: LSA Associates, Inc., May 2006

On-Site Traffic Noise Impacts. The project site will be exposed to noise events associated with both boat activity from the adjacent Bishop Cut waterway, as well as traffic noise from area roadways. Boat noise from Bishop Cut is expected to be intermittent, with the peak noise occurring on summer weekends when boat activity is the greatest. Generally, boat noise is associated with unmuffled power boats, with the most intense noise generated by ski boats. In the portion of Bishop Cut adjacent to the project, the waterway has some speed controls (5 mph) to the south as a result of the adjacent marina. To the north, the Eight Mile Road Bridge into the delta also regulates power boat speed due to the bridge height and piles. However, the speed restriction does not occur in the area directly across from the project. Nevertheless, the speed restriction/bridge regulation would influence the motor boat driver performance as the unrestricted speed segment. While boat activity does occur in this short segment, the activity is intermittent, and thus boat-related noise is, likewise, intermittent, and only applies to power boats.

Any boat noise generated in Bishop Cut is also partially attenuated by the existing levee, essentially mitigating all first floor exterior noise (single family and multi-family residences). For the proposed multi-family residential product, second and third floor levels will be exposed more directly by unmuffled power boat noise, but at an infrequent and intermittent basis. As a result, the boat noise is not expected to create a significant noise issue.

The five pocket parks proposed for the project will be passive parks with no significant source of noise or activity that would concern adjacent residents. The 8-acre neighborhood park will generate various activity levels that could generate periodic nuisance noise events. Residences located nearest the active park facilities may be exposed. However, it is expected that these events will occur during daytime hours when noise tolerance is highest. It is not expected that these levels will be of a continuous nature nor be excessive and should not have a long-term noise effect on adjacent receptors.

Tables 4.5.I, 4.5.K, and 4.5.M also show that traffic trips associated with the proposed project would add incrementally to traffic noise along the roadways affecting on-site uses. If outdoor active use areas such as backyards, patios, or balconies are proposed within 601 feet of the centerline of Eight Mile Road without intervening structures, they would be exposed to a traffic noise level exceeding 60 dBA CNEL, and mitigation such as a sound barrier with a minimum height of six feet is required along Eight Mile Road to provide noise attenuation within this 60 to 65 dBA CNEL impact zone. If outdoor active use areas are proposed within 280 feet of the centerline of Eight Mile Road without intervening structures, they would be exposed to a traffic noise level exceeding 65 dBA CNEL, and mitigation such as a sound barrier with a minimum height of eight feet is required along Eight Mile Road to provide noise attenuation within the 65 to 70 dBA CNEL impact zone.

If residential structures are proposed within 154 feet of the centerline of Eight Mile Road, and have no intervening structures between them, they would be exposed to a traffic noise level exceeding 69 dBA CNEL. With windows closed, interior noise levels at these residences would potentially exceed the interior noise standard of 45 dBA CNEL (i.e., 69 dBA - 24 dBA = 45 dBA). Therefore, building façade upgrades, such as double paned windows, would be required.

If residential structures are proposed within 953 feet of the centerline of Eight Mile Road, and have no intervening structures between them, they would be exposed to a traffic noise level exceeding 57 dBA CNEL. With windows open, interior noise levels at these residences would potentially exceed

the interior noise standard of 45 dBA CNEL (i.e., 58 dBA - 12 dBA = 46 dBA). Therefore, mechanical ventilation systems such as air-conditioning would be required to ensure that windows can remain closed for a prolonged period of time.

Mitigation Measure NOI-2a: Residential structures located within 953 feet of the centerline of Eight Mile Road shall be equipped with mechanical ventilation, such as air conditioning, to ensure that windows and doors can remain closed for prolonged periods of time.

Mitigation Measure NOI-2b: A sound barrier with shall be required to protect outdoor active use areas such as backyards, patios, and balconies associated with on-site residential land uses along of Eight Mile Road as follows:

- Outdoor active use areas within 280 feet of the centerline of Eight Mile Road that don't have intervening structures shall have a wall with a minimum height of eight feet.
- Outdoor active use areas within 601 feet of the centerline of Eight Mile Road that don't have intervening structures shall have a wall with a minimum height of six feet.

Mitigation Measure NOI-2c: Building façade upgrades, such as double paned windows, shall be required to meet the City's interior noise standard for the residential structures located within 154 feet of the centerline of Eight Mile Road.

Implementation of Mitigation Measures NOI-1a, NOI-1b, and NOI-1c will ensure that noise impacts related to long-term vehicular traffic will not be significant.

4.5.4 Level Of Significance After Mitigation

There would be no significant noise impacts from short-term construction or long-term operation of the project site after implementation of Mitigation Measures NOI-1a, NOI-1b, and NOI-1c.

4.6 LAND USE

4.6.1 Existing Setting

Existing Land Use

The project site consists of seasonal row crop agricultural fields. Drainage and irrigation ditches transect the project site. These ditches provide marginal aquatic habitat and riparian vegetation. The project site is surrounded by a variety of land uses. To the north of Eight Mile Road are row crop agricultural uses. To the west is Bishop Cut, a slough associated with the San Joaquin Delta. To the south and east is the approved Westlake residential development (under construction). Figure 4.6.1 illustrates the existing land uses.

General Plan

The project site is currently within the jurisdiction of unincorporated San Joaquin County. In 2004, the City of Stockton extended its Urban Service Area and Sphere of Influence to include the project site and established a City of Stockton General Plan designation of Low-Medium Residential. Figure 4.6.2 illustrates the existing City General Plan land use designations on the project site. Table 4.6.A presents the acreage for existing City General Plan designations.

Table 4.6.A: Existing City of Stockton General Plan Designations

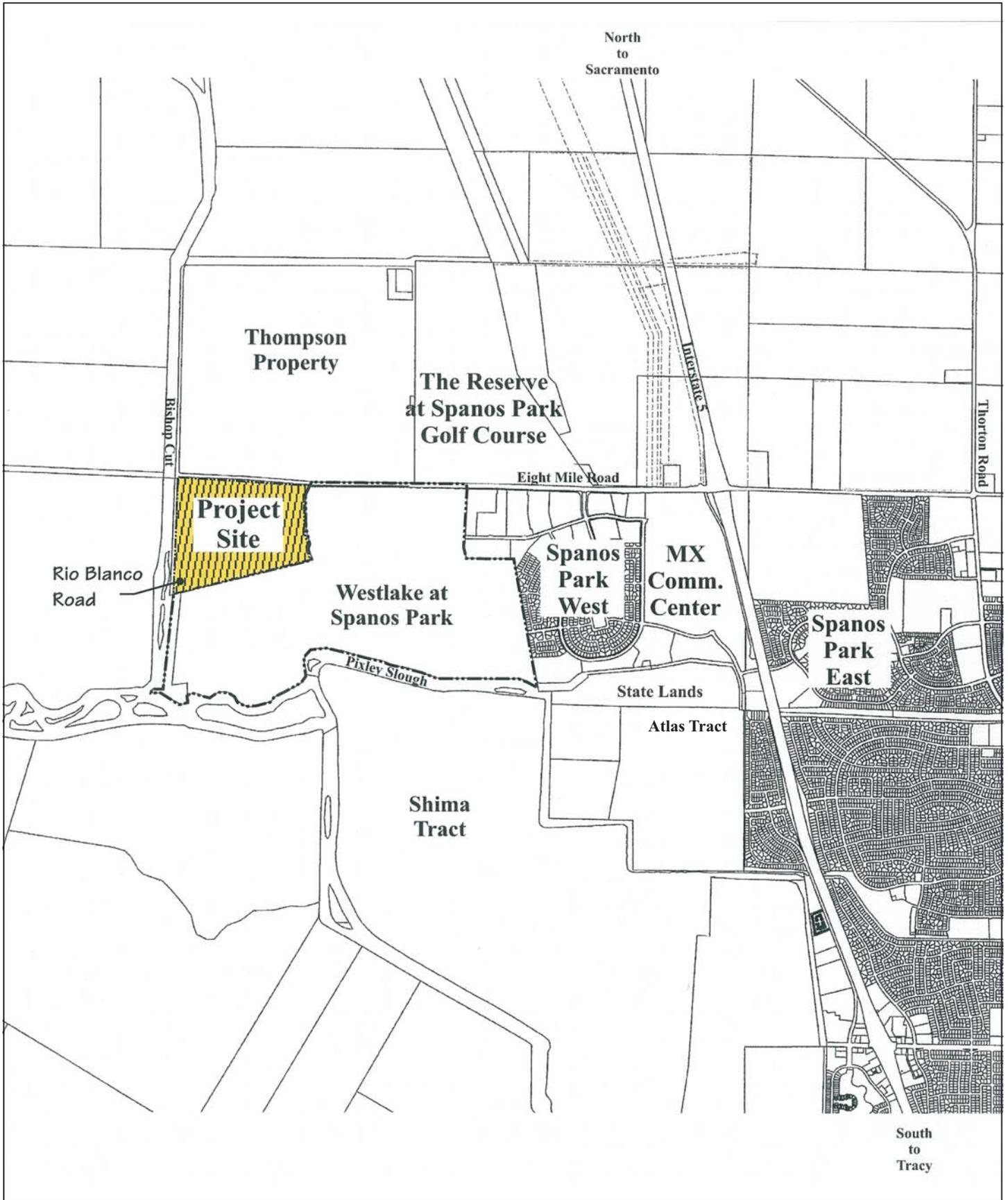
APN	CITY GENERAL PLAN	ACRES
055-310-04, 055-310-05, 055-310-06	Low-Medium Density Residential	173
Total		173

Source: City of Stockton, 2007

The Low-Medium Density Residential General Plan designation permits single-family residential units, duplexes, triplexes, semi-detached patio homes, townhomes, public and quasi-public uses, and other related and compatible uses. A total of up to 17.4 dwelling units per gross acre are allowed in this designation. This designation is very broad and encompasses City of Stockton zoning for both the RL (Single family) and RM (Two-family) zones.

Existing Zoning

The existing zoning districts for the project site are shown on Figure 4.6.3 and listed in Table 4.6.B. All of the land on the project site is zoned by the County of San Joaquin for Commercial-Recreation (C-R) in unincorporated San Joaquin County.



LSA

FIGURE 4.6.1



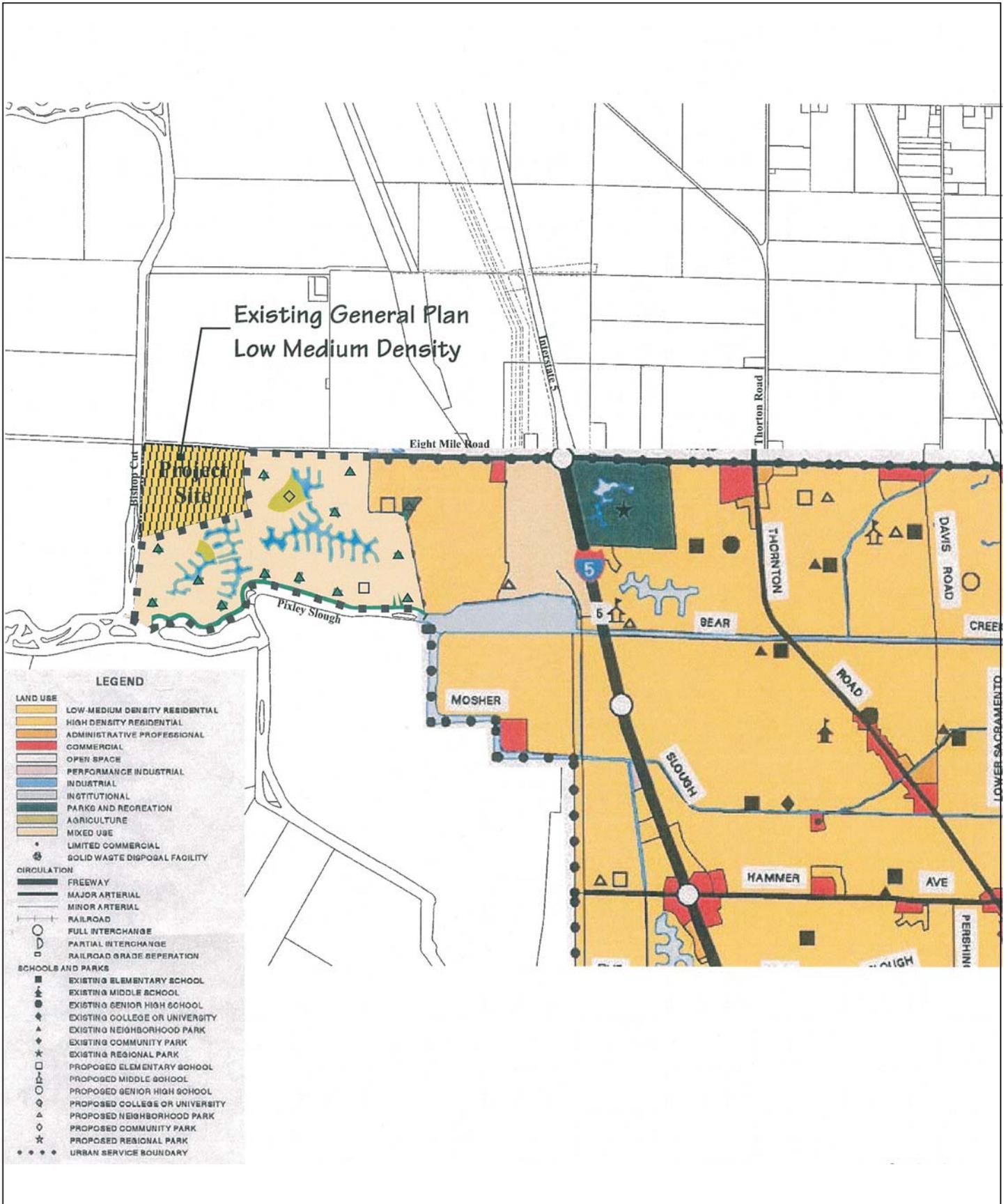


FIGURE 4.6.2



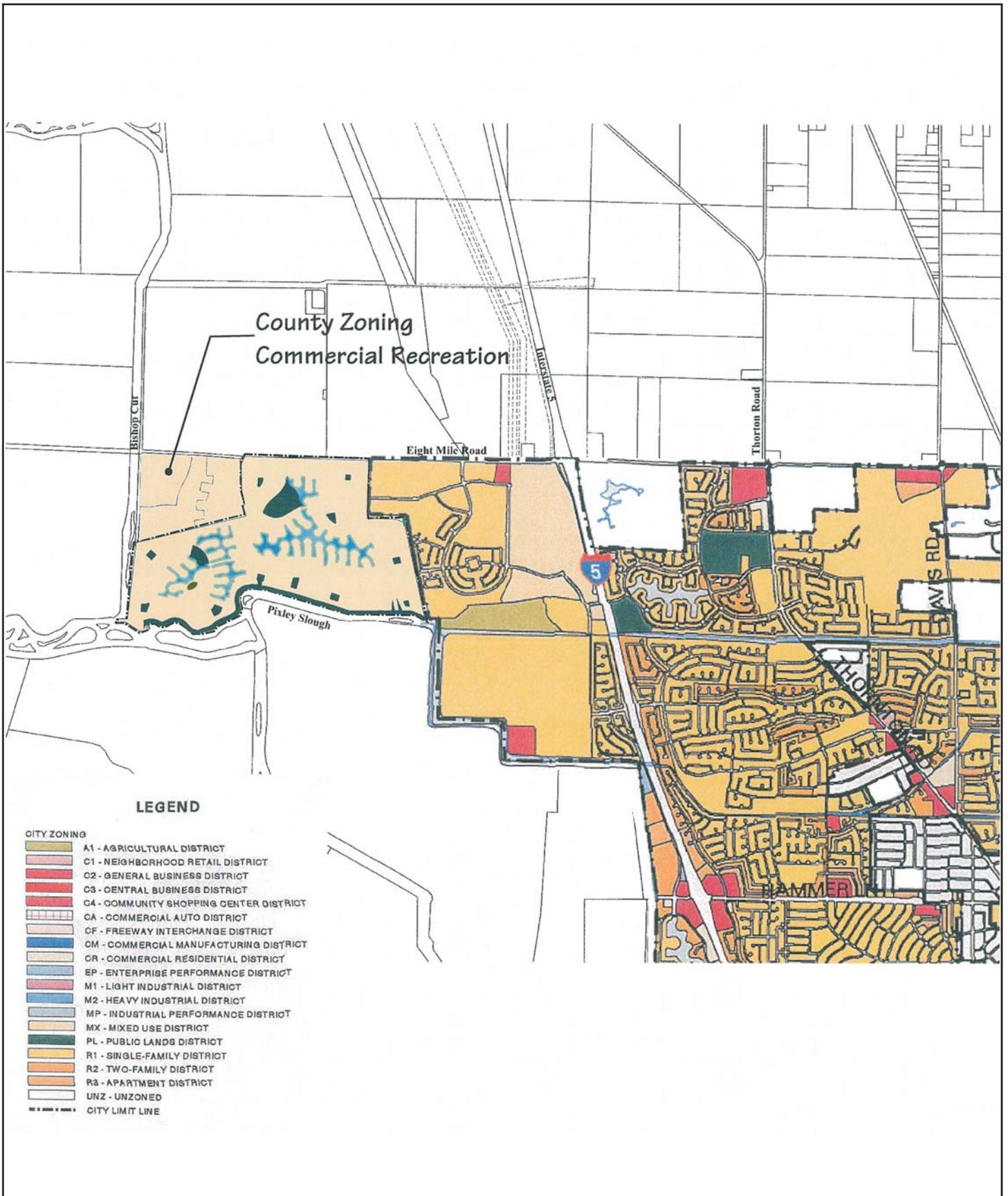


FIGURE 4.6.3



Table 4.6.B: Existing San Joaquin County Zoning Designations

APN	COUNTY ZONING	ACRES
055-310-04, 055-310-05, 055-310-06	C-R	173
Total		173

Source: San Joaquin County, 2007

Surrounding General Plan Land Use

The San Joaquin County General Plan designates the lands to the north of the project site as General Agriculture. These lands are included in the current City of Stockton General Plan Update, and are currently included in the City's Urban Service Area and Sphere of Influence. The project site is also included in the Secondary Area of the San Joaquin Delta, subject to development considerations if converted to urban uses. Lands to the west (across Bishop Cut) are designated as General Agriculture. These lands are outside of the area designated as the Stockton Urban Service Area and are included in the Primary Area of the San Joaquin Delta. The Urban Service Area is applied to areas where future urban development is anticipated, and infrastructure is or will be available. If the City of Stockton intends to provide service outside the City limits, the City must apply to and obtain approval from Local Agency Formation Commission (LAFCO). Lands in the Primary Area of the Delta cannot be converted to urban uses.

The City of Stockton General Plan designates the land bordering to the east of the project site (Westlake) as Mixed Use. This site is approved for residential development and is under construction.

Planning North of Eight Mile Road

The City of Stockton has included the lands north of Eight Mile Road in the City's General Plan Update Study Area. Currently, a major comprehensive General Plan Update is underway in Stockton. A component of the planning program involves an assessment of the development potential of the expanse of land between Stockton (at Eight Mile Road) and the southerly Lodi Sphere of Influence.

Special Planning Study Area

The City of Stockton considered expanding its planning area to encompass some of the predominantly agricultural lands north of Eight Mile Road. The city prepared a Draft and Final EIR on the Special Planning Area Study (SPAS) and received substantial public comments. The proposed SPAS revisions would have allowed development of new urban residential and other land uses north of Eight Mile Road. The Planning Commission considered, but did not certify, the Final EIR and rejected the SPAS General Plan Amendment on June 29, 1993.

4.6.2 Impact Significance Criteria

Potentially significant impacts associated with land use have been evaluated using the following criteria:

- LU-a** Type and extent of conversion from agricultural to suburban uses;
- LU-b** Change in land use represents a substantial adverse deviation from the character of the previous designations;
- LU-c** Compatibility with surrounding land uses (current and planned);
- LU-d** Consistency with City General Plan and regional land use plans and policies; and
- LU-e** Result in a substantial increase in intensity as a result of land use changes.

4.6.3 Impacts And Mitigation Measures

The project will require a General Plan Amendment for the 17.6 acres proposed for cluster condominium and apartment uses. The General Plan Amendment will change the existing Low-Medium Density Residential designation to High Density Residential for the 17.6 acre area. The remaining 155.4 acres will retain a General Plan designation of Low-Medium Density Residential. A requested entitlement of the project is to annex the Master Development Plan Area within the City's boundaries. Subsequent to the annexation, the project site will be under the jurisdiction of the City and guided by the City's General Plan.

Effects Considered Not to Be Significant

Impact LU-1: The project is not expected to be growth inducing nor create inconsistencies with regional land use policies.

The Crystal Bay project is located at the extreme limits of Stockton's boundaries, minimizing the opportunity to extend growth into adjacent San Joaquin County. The County's jurisdictional control, combined with the agricultural designations north of Eight Mile Road, provides emphasis on the limitations of the proposed project's growth-inducing influence on those lands. In addition, lands to the west are included in the Primary Delta Area of the San Joaquin Delta and cannot be converted to urban uses. (**Significance Criteria LU-d**).

Potentially Significant Impacts

Impact LU-2: Implementation of the proposed project will lead to the conversion of agricultural lands.

The Crystal Bay site is considered Prime Farmland. The soils mapped on the site are also prime soils and the site is actively farmed with row crops. Implementation of the project will convert this agricultural land to urban uses. This conversion runs contrary to policies set by the City and County General Plans to protect agricultural lands outside the City's boundary. Although this conversion presents a logical expansion of urban uses due to the proximity of Westlake Villages and SPW, the site is still agriculturally productive. Soils comprising the site are all considered prime agricultural

soils which would be irretrievably lost through project development. Therefore, the conditions outlined in **Significance Criteria LU-a** would occur.

Mitigation Measure LU-1: The applicant, owners, developers, or successors in interest shall comply with the City of Stockton's Agricultural Land mitigation Program. The applicable mitigation fee is \$9,600 per acre of land within the project site designated as Prime Farmland.

The proposed project will result in the conversion of agricultural lands. This represents an adverse effect on land use. The mitigation measure above does not completely offset this impact.

Impact LU-3: Implementation of the proposed project will substantially alter the character of the previous land use.

The applicant is proposing a change in land use from agriculture to residential uses for the Master Development Plan Area. A General Plan Amendment is required for the portion of the site (17.6 acres) proposed for higher density residential development and an eight-acre site for a "Park and Recreation" designation. The proposed project will amend the existing City General Plan and change the zoning designations (pre-zoning) with the following:

General Plan. A majority of the project site (155.4 acres) will remain as Low-Medium Density Residential. A total of 17.6 acres of the project site will be redesignated to High Density Residential to accommodate the cluster condominium and apartment components. Allowable uses within the Low-Medium Density Residential include: single-family residential units, duplexes, triplexes, semi-detached patio homes, town homes, public and quasi-public uses, second units, and other similar and compatible uses. The maximum dwelling units per net acre for Low/Medium Density Residential is 17.4 dwelling units per acre. Allowable uses within the High Density Residential designation include: single family and multifamily residential units, apartments, dormitories, group homes, guest homes, public and quasi-public uses, and other similar and compatible uses. The maximum dwelling units per net acre is 29 dwelling units per acre outside the downtown area.

Zoning. The proposed project site is currently not within the City of Stockton, and therefore does not have a City zoning designation. San Joaquin County has zoned the project site as C-R (Commercial – Recreation) as illustrated in Figure 4.6.3. Implementation of the Crystal Bay project will require annexation into the City of Stockton, and rezoning of the site to RL, RM, RH and PF district zoning, as illustrated in Figure 3.5.2. The RL zone, or Low Density Residential zone, is applied to single-family residential neighborhoods, low-density residential planned developments, and/or other low-density residential development, and is intended to maintain densities and protect existing neighborhood character. Allowable density may be up to 8.7 dwelling units per net acre. The RM zone, or Medium Density Residential zone, is applied to more intensely developed residential neighborhoods and/or other medium-density residential Planned Developments. Allowable housing types may include single-family independent dwelling units, duplexes, triplexes, townhouses, and multi-family units. Allowable density may be up to 17.4 dwelling units per net acre; minimum density is 8.8 dwelling units per net acre. The RH zone, or High Density Residential zone, is applied to high-density residential neighborhoods. Allowable housing types may include multi-family and various types of group housing, as well as high density single-family residential development. Allowable density may be up to 29 dwelling units per net acre; minimum density is 17.5 dwelling units per net acre.

These residential uses represent a significant change from the existing agricultural character of the site. (**Significance Criterion LU-b**).

The proposed project will result in an adverse effect on land use character and intensity when compared with previous designations and land uses.

Impact LU-4: Implementation of the proposed project could potentially result in incompatibility with surrounding land uses.

Table 4.6.C presents a summary of the land use compatibility for parcels surrounding the project site.

Table 4.6.C: Primary Land Use Compatibility

PROPOSED PROJECT LAND USE	ADJACENT LAND USE		COMPATIBILITY
	DIRECTION	LAND USE	
Residential	East	Residential (Westlake)	Compatible
Residential	North	Agriculture (north of Eight Mile Road)	Compatible
Residential	West	Agriculture (across Bishop Cut)	Compatible
Residential	West	Open Space (Bishop Cut)	Compatible
Residential	South	Residential (Westlake)	Compatible

Land use compatibility within the project’s proposed land uses and existing surrounding land uses are reviewed in the following sections:

Residential Land Uses

Figure 3.4.1 presents the overall Master Development Plan for the project. All areas within the Master Development Plan Area will be developed with residential or associated uses.

There are three land uses surrounding the project site: single family residential (east and south existing and under construction, respectively), open space and sloughs (south and west), and agriculture (north and west). The Paradise Point Marina is present to the west and south of the site within the Bishop Cut Slough area.

The agricultural land uses to the west are separated from the project by Bishop Cut. Due to these physical barriers, there will be no conflict between the proposed project and agricultural uses. Agricultural land uses located north of Eight Mile Road will also be buffered by the existing roadway.

There are no apparent land use conflicts between the project and the Westlake residential development (under construction) located south and east of the proposed project site. The adjacent Paradise Point Marina and waterway (Bishop Cut) and levees provide open space and recreational

opportunities. These uses are not incompatible with the proposed project as long as these natural resources are protected from degradation or destruction. Mitigation measures provided within Section 4.2, Water Resources and Section 4.4, Biological Resources will minimize negative impacts to water resources, therefore, the proposed project land use is not inconsistent with these residential, open space, and recreational uses.

Implementation of the proposed project will not result in land use incompatibilities with adjacent uses.

Impact LU-5: Elements of the proposed project may not be consistent with the City's General Plan.

The City's General Plan contains goals and policies that can be examined for project consistency. A number of the land use policies address urban growth and development, residential land uses, housing, transportation, natural and cultural resources, noise, and public services. The relationship of the proposed project to the City's goals and policies is addressed in Table 4.6.D, and compares the project with both the existing 1990 General Plan and proposed 2035 General Plan Update policies.

Table 4.6.D: Goals and Policies General Plan 1990

GOALS AND POLICIES	PAGE NUMBER	GOAL AND POLICY NUMBER	CONSISTENCY STATEMENT
General Objectives	I-13	Objective 1: Develop a balanced and complete community in terms of land use distribution and densities, housing types, and economic development opportunities.	Consistent. The proposed project provides a well developed community that integrates low to high density single family residential, apartments, and condominiums with open space, recreation area and park lands. The proximity of the SPW commercial development provides a nearby job base.
General Objectives	I-13	Objective 4: Promote the development of a sufficient quantity and variety of decent, safe, and sanitary housing units to meet the needs of all residents.	Consistent. The proposed project will provide a maximum of 1,363 low to high density residential units. These will include single family residential, small lot, cluster or courtyard, and high density residential developments.
General Objectives	I-13	Objective 5: Establish a balanced transportation and circulation system which provides for the efficient movement of people and goods while minimizing the impacts on adjacent land uses.	Consistent. A fundamental objective of the Crystal Bay project is to provide an orderly hierarchy of roadways to meet the transportation demands generated by the project. In addition, the proximity of SPW's commercial business center provides employment opportunities and the efficient movement of people and goods between developments will be facilitated.
General Objectives	I-13	Objective 11: Promote development which by its location and design reduces the need for nonrenewable energy resources and the associated release of air pollutants.	Consistent. The proximity of SPW's commercial business center increases the efficiency and movement of people and goods within the development.
Land Use - Urban Growth and Overall Development	III-1	Goal 1, Policy 2: The Urban Service Area shall be expanded only when applicable General Plan policies can be met and appropriate services and efficient infrastructure can be provided.	Consistent. Based on City policies, the project site will not be annexed unless adequate services, utilities, and infrastructure are available. The project applicant will extend all infrastructure from Westlake Villages and SPW and pay appropriate fees to mitigate related impacts. Additionally, the project applicant will provide amendments to the City's Sewer, Water, and Drainage Master Plans.
Land Use - Urban Growth and Overall Development	III-1	Goal 1, Policy 3: Future urban development adjacent to the City should occur within the City. This requires that vacant unincorporated properties shall annex to the City prior to provision of any City services.	Consistent. The project applicant has submitted an annexation application to the City of Stockton.
Land Use - Urban Growth	III-1	Goal 1, Policy 4: Considering the large amount of undeveloped land beyond the existing City Limits yet within the Urban Service Area, it	Consistent. A majority of the area within the Urban Service Area has been developed. The project is located adjacent to an area that

GOALS AND POLICIES	PAGE NUMBER	GOAL AND POLICY NUMBER	CONSISTENCY STATEMENT
and Overall Development		is the City's intention not to accept or process applications for General Plan Amendments for land outside the Urban Service Area boundaries until completion of the authorized Special Planning Area Study.	is currently being developed with residential uses.
Land Use - Urban Growth and Overall Development	III-3	Goal 4, Policy 1: The wasteful and inefficient sprawl of urban uses into agricultural lands surrounding the urban area should be avoided by regulating the location of urban uses through the Urban Growth and Overall Development policies to minimize the consumption of agricultural land and other open areas containing valuable natural resources or scenic beauty.	Inconsistent. The project will convert ± 173 acres of productive agricultural lands and prime agricultural soils to urban uses.
Land Use - Urban Growth and Overall Development	III-4	Goal 4, Policy 2: Urban growth shall be geographically limited by such environmental hazards as flood vulnerability and unstable soil characteristics.	Consistent. Extensive improvements have occurred to levee structures surrounding the project area. As a result of these improvements, the project site is provided with 100-year flood protection. As indicated in section 4.1, Geophysical Resources, soil characteristics associated with the project site are considered capable of supporting the proposed development provided appropriate engineering techniques are incorporated.
Land Use - Urban Growth and Overall Development	III-4	Goal 4, Policy 3: Urban growth, particularly sensitive developments (i.e., homes, schools, hospitals) should avoid locating in areas which are subject to adverse environmental or noise impacts.	Consistent. The proposed project is not located in an area that is subject to adverse environmental or noise impacts.
Land Use - Urban Growth and Overall Development	III-4	Goal 4, Policy 4: Environmentally sensitive areas, such as the Delta, oak groves, and areas of archaeological/historic value, should be preserved for the benefit of present and future generations.	Consistent. There are no areas of archaeological/historic values within the project site. The area is currently used for agricultural uses and no oak groves or other environmentally sensitive areas will be affected.
Land Use - Urban Growth and Overall Development	III-4	Goal 4, Policy 5: Storm water quality measures shall be undertaken to enhance to the maximum extent practicable the quality of the water in the sloughs, creeks, and rivers in this area.	Consistent. The applicant will be required to comply with conditions set forth in all applicable permits which may include: NPDES General Construction Permit, Waste Discharge Permit, Streambed Alteration Agreement, and/or Section 404 permit. The proposed storm drainage system must also be approved by the City's Municipal Utilities Department.
Land Use - Urban Growth and Overall	III-4	Goal 4, Policy 6: Encourage the use of energy efficient transportation systems and building designs along with other measures to reduce air pollution and to conserve energy resources in the process of urban	Consistent. Building designs proposed in the project will be required to conform to State energy conservation standards and Title 24 regulations. Mitigation proposed in Section 4.2, Air

GOALS AND POLICIES	PAGE NUMBER	GOAL AND POLICY NUMBER	CONSISTENCY STATEMENT
Development		development.	Quality, will help reduce air emissions.
Land Use - City Concept and Design	III-4	Goal 1, Policy 1: Encourage the development of identifiable boundaries for the City to maintain a sense of community identity. The City should also consider the development of some type of "gateway" treatment at major entrances into the City.	Consistent. The proposed project will extend the City's boundary west of the existing Westlake Villages residential development. The Master Development Plan for the proposed project provides landscaping and entry treatments into the residential development from Eight Mile Road that are aesthetically pleasing and will promote a positive image for the City.
Land Use - City Concept and Design	III-5	Goal 1, Policy 3: Residential subdivisions shall be designed to provide for internal circulation within neighborhoods and to prevent through traffic from traversing neighborhoods.	Consistent. Connector roadway facilities are proposed for the Crystal Bay project. Likewise, additional connections are being provided to Westlake Villages at the eastern and southern ends of the project site. These roadway connections are designed to convey traffic on major collector roads (Eight Mile Road), thus avoiding residential neighborhood impacts.
Land Use - City Concept and Design	III-5	Goal 1, Policy 4: Promote aesthetically pleasing and environmentally sound urban development by providing for design flexibility through the use of development controls such as planned unit developments.	Consistent. An objective of the project is to provide sound urban development while also providing maximum flexibility in the design concepts. Standards and design concepts proposed in the Master Development Plan have been designed to maintain considerable flexibility in the approach to development. All of the design concepts and guidelines are intended to promote aesthetically pleasing and environmentally sound planning development concepts.
Land Use - City Concept and Design	III-5	Goal 2, Policy 1: Varied residential densities, housing types, and styles should be equitably and appropriately distributed throughout the community and integrated with public facilities and commercial services.	Consistent. The project proposes a range of densities that provide low to high density residential units. The proposed project will include single family residential, small lot, cluster or courtyard, and high density residential developments.
Land Use - Residential Land Use	III-6	Goal 2, Policy 1: The neighborhood shall be utilized as the basic planning unit for maintaining and preserving existing residential areas and in the planning of new ones. Key features of the neighborhood unit include a centrally located meeting place (i.e., school, park), access to arterials only through collector streets with an internally directed local street system, and services located at the periphery of the neighborhood (i.e., commercial, offices, institutional).	Consistent. The neighborhood design incorporates the concept for a basic planning unit by looping the primary collector roadway around the neighborhood, without providing through vehicle travel. This design enhances neighborhood unity and minimizes the vehicular activity. The community as a whole will be centered around public parks, natural open space areas, and recreation areas. A hierarchical system of local roadways promotes access to the

GOALS AND POLICIES	PAGE NUMBER	GOAL AND POLICY NUMBER	CONSISTENCY STATEMENT
			primary collector roadway through smaller collector and local streets with internally directed local street system (courts, cul-de-sacs, etc.).
Land Use - Residential Land Use	III-6	Goal 2, Policy 3: Residential development shall provide open space in either private yards or common areas to partially meet the residents' recreational needs.	Consistent. A variety of open space types will be included within the development. Several public parks and open space/recreational areas are proposed for the project for around 8 acres of parks and 29.7 acres of open space.
Land Use - Residential Land Use	III-6	Goal 2, Policy 6: Residential neighborhoods shall be protected from the excessive encroachment of incompatible activities and land uses (i.e., traffic, noise) and environmental hazards (i.e., flood, soil instability) which may have negative impacts on the living environment.	Consistent. The proposed residential uses will be protected from traffic and noise on I-5 by the intervening SPW and Westlake Villages development. Onsite soils are assumed to be adequate for development and the project site is protected from regional flooding hazards.
Land Use - Commercial Land Use	III-7	Goal 1, Policy 3: The compatible integration of commercial and new residential uses shall be encouraged. Existing residential areas shall be buffered from new commercial uses through the provisions of the zoning code.	Consistent. While the proximity of SPW's commercial business center provides employment and commercial opportunities, the residential component of SPW as well as the Westlake Villages Development will buffer Crystal Bay from these commercial uses.
Land Use - Mixed Land Use	III-10	Goal 4, Policy 1: Project developments proposed in the Mixed Use designation shall be implemented by developing and processing a Master Development Plan for the project area, and rezoning the area to an M-X District.	Consistent. A General Plan Amendment and rezoning are being requested by the project applicant. A Master Development Plan has been prepared and submitted concurrently with those applications for consideration by the City to ensure internal and external land use compatibility (Appendix B).
Land Use - Mixed Land Use	III-10	Goal 4, Policy 2: Land uses proposed for a Mixed Use development in the Mixed Use designation shall support each other by providing an integrated master plan that may include one or more of the following: industries, services, offices, retail, and residential opportunities for the common needs of the occupants and users of the Mixed Use development.	Consistent. The Master Development Plan includes a variety of densities and uses that have been designed to complement each other. The mixture of uses are internally compatible and are meant to function as a complementary land use program.
Housing - Adequate Sites	III-13	Goal 1, Policy 1: The General Plan shall designate sufficient vacant land for residential purposes to accommodate anticipated population growth.	Consistent. The project is proposed to fulfill the future demand for housing with a variety of densities. As such, the proposed project is consistent with the intent of this policy.
Housing -	III-13	Goal 1, Policy 2: New residential uses shall be located close to main	Consistent. Residential uses will be proximate to the commercial

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Adequate Sites		transportation routes to ensure convenient access to employment centers, schools, shopping, and recreational facilities.	uses on the nearby Spanos Park West. The project site will also have convenient access to I-5 via Eight Mile Road. Consequently, residents in Crystal Bay will have convenient access to local commercial uses close to the project, as well as regional commercial uses, employment centers, etc.
Housing - Adequate Sites	III-13	Goal 1, Policy 3: Sites designated for new residential development on the General Plan shall be adequately served by public utilities, minimally impacted by noise and blighting conditions, and be compatible with surrounding land uses.	Consistent. The proposed project residential uses within the Crystal Bay project will be adequately served by public utilities. Utility planning has already been initiated. The Master Development Plan describes how those utilities will be provided to the project site. Residential uses will not be exposed to significant sources of noise or blighted conditions. While traffic noise from Eight Mile Road may affect residential uses, those uses will be adequately mitigated with noise attenuation in order to meet City exterior and interior noise standards.
Housing - Adequate Sites	III-13	Goal 1, Policy 5: Encourage the construction of new homes on vacant lots in the existing developed areas of the City where most public improvements have already been installed.	Consistent. The proposed project site is located directly adjacent to the Westlake Villages development. All infrastructure and utilities will be extended from the adjacent development. In addition, previous improvements to levee structures and channels in the Bishop Tract area have resolved local flooding issues from 100-year flood plain constraints.
Housing - Affordability	III-13	Goal 1, Policy 1: Designate adequate high-density areas on the General Plan to provide for the development of apartments, planned unit residential developments, and other forms of high-density housing.	Consistent. The Crystal Bay development will provide approximately 17.6 acres of high-density housing units consisting of apartments and/or condominiums.
Housing - Governmental Constraints	III-14	Goal 1, Policy 2: Continue to plan for the timely and adequate expansion and/or improvement of public facilities and infrastructure to coincide with housing development and improvements.	Consistent. The proposed project intends to extend water and sewer infrastructure from the adjacent Westlake Villages development. The Master Development Plan describes the phasing of infrastructure to ensure that the development and infrastructure coincide in the appropriate time frame. The City's Master Sewer, Water, and Storm Water Drainage Plans are being amended to include the proposed project.
Housing - Preserving	III-14	Goal 1, Policy 4: Provide and maintain community facilities in all community areas.	Consistent. The project will provide several acres of parks, public parks, recreational areas, and open space. The onsite lakes will be

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Housing and Neighborhoods			available for non-motorized boating recreation.
Housing - Adequate Sites	III-16	Implementation Program 1: Continue to monitor the supply of land in various zoning categories (RL, RM, R-H and CO) to prevent shortages from developing which may increase housing costs.	Consistent. The Crystal Bay development includes single family residential units as well as small lot, cluster or courtyard, and high density residential developments.
Housing - Affordability	III-16	Implementation Program 3: Maintain at least 900 acres of undeveloped land designated for Low/Medium Density Residential uses on the General Plan to assure an adequate supply of such land.	Consistent. By developing 156.1 acres of low/medium density residential units, the applicant will be providing residential uses thus assisting in providing an adequate supply of low/medium density residential land.
Housing Affordability	III-16	Implementation Program 4: Maintain at least 300 acres of undeveloped land designated for High-Density Residential Uses on the General Plan to assure an adequate supply of such land.	Consistent. The project includes approximately 17.6 acres of high-density units.
Transportation - Streets and Highways	III-20	Goal 1, Policy 2: The street system shall provide at least two (2) independent access routes for all major developed areas.	Consistent. The project will provide 2 access routes via Eight Mile Road and Scott Creek Road. Additional emergency access will be provided along Rio Blanco Road at Eight Mile Road.
Transportation - Streets and Highways	III-20	Goal 1, Policy 3: Significant trip generating land uses should be served by roadways adequate to provide vehicular access with a minimum of delay.	Consistent. The project roadways are designed to accommodate expected vehicular trips.
Transportation - Streets and Highways	III-21	Goal 1, Policy 8: Seek to improve freeway interchanges along both Route 99 and Interstate 5 to current design standards as required by the traffic demands of new development.	Consistent. Feasible mitigation is available to offset all project-related traffic impacts, however, feasible mitigation does not exist to offset all cumulative impacts.
Transportation - Streets and Highways	III-21	Goal 1, Policy 9: For traffic operating conditions use "Level-of-Service" (LOS) of "D" or better on a p.m. peak hour basis as the planning objective for the evaluation of new development, mitigation measures, impact fees, and public works capital improvement programs.	Consistent. Feasible mitigation is available to offset all project-related traffic impacts, however, feasible mitigation does not exist to offset all cumulative impacts.
Transportation - Streets and Highways	III-21	Goal 2, Policy 1: Inter-neighborhood traffic movement should occur on arterial and collector streets and is discouraged on neighborhood streets.	Consistent. One of the objectives included in the overall Crystal Bay planned community is to create a system of street hierarchy that discourages traffic through neighborhood streets.
Transportation - Streets and Highways	III-21	Goal 2, Policy 2: Neighborhood streets shall be designed to discourage through traffic and excessive speeds.	Consistent. One of the objectives included in the overall Crystal Bay planned community is to create a system of street hierarchy that discourages traffic and speeding through neighborhood streets.

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Transportation - Streets and Highways	III-21	Goal 2, Policy 3: Off-street parking shall be required for all land uses in order to reduce congestion, improve overall operation and land use compatibility.	Consistent. Off-street parking will be included in all non-residential uses (i.e., recreational uses). The Master Development Plan includes standards, design guidelines, and concepts to ensure that off-street parking will adequately accommodate the parking demand generated by the proposed nonresidential land uses.
Transportation - Streets and Highways	III-22	Goal 3, Policy 1: Streets and highways shall be constructed to accommodate the expected traffic flow from existing and planned development, both local and regional.	Consistent. Feasible mitigation is available to offset all project-related traffic impacts, however, feasible mitigation does not exist to offset all cumulative impacts.
Transportation - Public Transportation	III-23	Goal 1, Policy 2: Large new developments along arterial and major collector streets shall provide transit-related public improvements (i.e., bus pullouts, bus shelters) to encourage bus use.	Consistent. The Master Development Plan include provisions for bus parking areas, turnouts, and shelters. The design and location of these facilities will be approved by the Community Development Director and Transit Authority.
Public Services and Facilities - Public Facilities	III-29	Goal 1, Policy 2: Capital improvements and facility needs generated by new development shall be financed by new development. The existing community should not be burdened by increased taxes and fees or by lowered service levels to accommodate the needs created by new development. Exceptions to this policy may be considered in an effort to encourage affordable housing.	Consistent. The project applicant will pay all required City fees as a condition of the Tentative Map and as outlined in the Annexation Memorandum of Understanding. A Homeowner's Association will also provide fees for maintenance of some parks, landscaping, etc.
Public Services and Facilities - Public Facilities	III-29	Goal 1, Policy 3: The Urban Service Area shall not be expanded without taking into consideration the funding necessary to adequately provide services and facilities to the development anticipated in any area proposed for expansion.	Consistent. The project applicant will pay all required City fees as a condition of the Tentative Map. A Homeowner's Association will also provide fees for maintenance of some parks, landscaping, etc.
Public Services and Facilities - Public Facilities	III-30	Goal 2, Policy 1: Elementary schools should be located within residential neighborhoods with an ideal service radius of approximately ½ mile. Elementary schools should be located where students need not cross major arterial or collector streets.	Consistent. The proposed Crystal Bay development will utilize the elementary school that is part of the adjacent Westlake Villages development.
Public Services and Facilities - Public Facilities	III-31	Goal 2, Policy 7: Residential developers should coordinate with the school district to insure the adequate provision of schools.	Consistent. The LUSD has indicated that the elementary school planned as part of the Westlake Villages project will adequately serve the Crystal Bay project. Existing middle and high schools will adequately serve the proposed project.
Public Services and Facilities - Public Facilities	III-31	Goal 3, Policy 2: Schools and other public facilities shall be encouraged to provide sufficient off-street parking on-site for both normal use and for special events.	Consistent. Off-street parking will be included in all non-residential uses (i.e., recreation uses). The Master Development Plan includes standards, design guidelines, and concepts to ensure

GOALS AND POLICIES	PAGE NUMBER	GOAL AND POLICY NUMBER	CONSISTENCY STATEMENT																				
			that off-street parking will adequately accommodate the parking demand generated by the proposed land uses.																				
Public Services and Facilities - Water Facilities	III-32	Goal 1, Policy 4: The use of Best Management Practices for the reduction of pollutants in urban runoff shall be encouraged within the storm drainage system in order to reduce the amount of pollutants entering the surface waters.	Consistent. The applicant will be required to comply with all conditions set forth in the NPDES General Construction Permit and Waste Discharge Permit, and any City regulations regarding treatment of storm water runoff. Prior to the commencement of construction activities, the contractor will provide proof of a SWPPP.																				
Public Services and Facilities - Water Facilities	III-32	Goal 1, Policy 7: Encourage and support water conservation measures by all City water users.	Consistent. Landscaping irrigation will be designed with the most current water conservation policies and available equipment. The onsite lake may provide a source of water for landscape irrigation.																				
Public Services and Facilities - Water Facilities	III-32	Goal 1, Policy 8: Non-potable water should be used to fill any lake or water features within development projects.	Consistent. The on-site lake will be filled with storm water and/or ground water.																				
Public Facilities and Services - Parks and Rec.	III-33	<p>Goal 1, Policy 1: The City shall ensure that park and recreation facilities are provided at a level that meets the City's park and recreation standards, as shown in the following table.</p> <table border="1"> <thead> <tr> <th>Type of Park</th> <th>Acres/1,000 pop.</th> <th>Acres/Park</th> <th>Service Radius</th> </tr> </thead> <tbody> <tr> <td>Neighborhood Park</td> <td>1.00</td> <td>5 - 10</td> <td>½ mile</td> </tr> <tr> <td>Community Park</td> <td>2.00</td> <td>10 - 30</td> <td>1 mile to city wide</td> </tr> <tr> <td>Regional Park</td> <td>7.00</td> <td>30+</td> <td>region wide</td> </tr> <tr> <td>Golf Courses</td> <td>1 course/40,000</td> <td>130 - 180</td> <td>region wide</td> </tr> </tbody> </table>	Type of Park	Acres/1,000 pop.	Acres/Park	Service Radius	Neighborhood Park	1.00	5 - 10	½ mile	Community Park	2.00	10 - 30	1 mile to city wide	Regional Park	7.00	30+	region wide	Golf Courses	1 course/40,000	130 - 180	region wide	Consistent. The proposed project includes a total of 13.1 acres of parkland. This includes an 8 acre neighborhood park and 5.1 acres of mini parks. The project will also include a 7.2 acre lake and 8.7 acres of open space/greenbelt. Development of a community park within adjacent Westlake Villages as well as payment of parkland fees will mitigate any shortages of parkland associated with the project.
Type of Park	Acres/1,000 pop.	Acres/Park	Service Radius																				
Neighborhood Park	1.00	5 - 10	½ mile																				
Community Park	2.00	10 - 30	1 mile to city wide																				
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Golf Courses	1 course/40,000	130 - 180	region wide																				
Public Facilities and Services - Parks and Rec.	III-33	<p>Goal 1, Policy 2: The City shall ensure that community centers are provided at a level that meets the following standards.</p> <p>Community Center Standards</p> <table border="1"> <tbody> <tr> <td>City-owned community centers population</td> <td>1 center / 50,000</td> </tr> <tr> <td>Combined City-owned, school district, population and housing authority</td> <td>1 center / 30,000</td> </tr> </tbody> </table>	City-owned community centers population	1 center / 50,000	Combined City-owned, school district, population and housing authority	1 center / 30,000	Consistent. Private and public recreational areas are included in the proposed project. In light of the fact that some of these facility will be privately owned/operated, the recreation areas will not meet all of the community center needs of the residents, when compared to a facility that would be publicly owned and operated. However, the adjacent Westlake Villages elementary school could serve as a community center as this facility will be open to the general public. The City's General Plan include provisions to include all schools as meeting the requirement for community																
City-owned community centers population	1 center / 50,000																						
Combined City-owned, school district, population and housing authority	1 center / 30,000																						

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		Combined City-owned, school district, ½ square foot per resident and housing authority Minimum to preferred size per center 10,000 to 15,000 square feet for multipurpose centers Service radius 1-1/2 miles	centers.
Public Facilities and Services - Parks and Rec.	III-33	Goal 1, Policy 3: The City shall require that new parks be located and designed in such a way as to facilitate their security and policing.	Consistent. The public park sites proposed in Crystal Bay have been sited along the interior collector roadways to facilitate visibility and security. All park sites will be reviewed by the City Parks and Recreation Director for compliance with security and policing concerns.
Public Facilities and Services - Parks and Rec.	III-33	Goal 1, Policy 4: Whenever possible, the City shall develop neighborhood parks in conjunction with elementary schools that are centrally located within the neighborhood and where park patrons need not cross major arterial or collector streets.	Consistent. The Crystal Bay development includes an 8 acre neighborhood park which is located along an arterial. Some park patrons may need to cross this arterial to enter the park. However, 5.1 acres of mini parks are located throughout Crystal Bay, giving residents alternative parks to visit away from major arterials.
Public Facilities and Services - Parks and Rec.	III-33	Goal 1, Policy 5: Community and City-wide parks shall be located with access to arterial or collector streets and shall have public streets around the balance of the park except where it is adjacent to another public facility.	Consistent. A community park will be developed in the adjacent Westlake Villages residential development. The community park will be located off an arterial street.
Public Facilities and Services - Parks and Rec.	III-33	Goal 1, Policy 6: Continue to provide for the development of linear parkways and recreational bikeways where the opportunity exists (i.e., Calaveras River path, EBMUD right-of-way).	Consistent. The project applicant has provided bike lanes on major streets within the proposed development. Existing levees along Bishop Cut will also be maintained as recreational bicycle facilities.
Public Facilities and Services - Parks and Rec.	III-33	Goal 1, Policy 7: Continue to cooperate with the County and the various school districts to provide a wide variety of recreational opportunities for Stockton residents and visitors.	Consistent. The project applicant has integrated park and recreational facilities into the Crystal Bay Master Development Plan. These facilities will be available to residents and visitors to the community.
Public Facilities and Services - Parks and Rec.	III-33	Goal 1, Policy 8: The City shall encourage the development of private open space and recreational facilities in larger residential developments in order to meet a portion of the open space and recreation needs generated by the residents of those developments.	Consistent. The project applicant has integrated approximately 50.1 acres of parklands, recreational areas, lakes and opens space into the Crystal Bay Master Development Plan. An additional 11.4 acres of landscape areas will be provided throughout project site.
Public Facilities	III-36	Goal 1, Policy 4: New development shall provide adequate access for	Consistent. Mitigation is proposed in Section 4.7, Traffic and

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and Services - Fire Safety		emergency vehicles, particularly firefighting equipment, as well as provide evacuation routes.	Circulation, to ensure that the entire development has adequate emergency access. Additionally, the City of Stockton's Fire Department should review and approve the project plan.
Public Facilities and Services - Police Protection	III-36a	Goal 1, Policy 1: Seek to promote the inclusion of security features in all structures.	Consistent. The City of Stockton's Fire Department should review and approve the project plan. The applicant will implement all applicable city, State, and Uniform Building and Fire Codes relating to security features in structures.
Public Facilities and Services - Police Protection	III-36a	Goal 1, Policy 2: Defensible space design techniques shall be considered in the review of new developments in order to enhance crime prevention.	Consistent. The Master Development Plan includes features to facilitate the concept of defensible space (e.g. lighting, and landscaping requirements). The applicant will consult with the City of Stockton's Police Department regarding any additional measures that are feasible for the proposed project.
Natural and Cultural - Conservation	III-37	Goal 1, Policy 1: Existing agricultural soils capable of producing a wide variety of valuable crops shall be retained in agricultural use until the time that such soils are needed for logical urban expansion.	Inconsistent. The project will convert 173 acres of productive agricultural lands and prime agricultural soils to urban uses.
Natural and Cultural - Conservation	III-37	Goal 1, Policy 2: Support firm policies and ordinance by San Joaquin County to protect productive agricultural land.	Inconsistent. The project will convert 173 acres of productive agricultural lands and prime agricultural soils to urban uses.
Natural and Cultural - Conservation	III-38	Goal 3, Policy 1: Consider the cumulative air quality impacts from development and use land use regulations to reduce air pollution.	Inconsistent. Generation of fugitive dust and pollutant emissions during construction may result in substantial short-term increases in air pollutants. This would be a contribution to short-term cumulative air quality impacts and is unavoidable.
Natural and Cultural - Conservation	III-38	Goal 4, Policy 2: Land use decisions shall consider the proximity of industrial and commercial uses to major residential areas in order to reduce commuting.	Consistent. Residential uses will be proximate to the commercial uses on the nearby Spanos Park West. The project site will also have convenient access to I-5 via Eight Mile Road. Consequently, residents in future residential uses will have convenient access to local commercial uses adjacent to the project, as well as regional commercial uses, employment centers, etc., as a result of the I-5 facility.
Natural and Cultural - Conservation	III-39	Goal 5, Policy 2: Review proposed development for both local and regional air quality impacts.	Consistent. Section 4.3, Air Quality, assesses the local and regional air quality impacts of the proposed project.
Natural and Cultural - Conservation	III-39	Goal 5, Policy 3: Assist project applicants in understanding and	Consistent. Measures are proposed in Section 4.3, Air Quality, to

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Cultural - Conservation		meeting the air quality mitigation requirements established by the San Joaquin County Air Pollution Control District.	mitigate impacts of the proposed project. The General Plan will be amended as part of the proposed project. If approved, the amendment will be included in the next revision of the regional AQAP.
Natural and Cultural - Open Space	III-39	Goal 1, Policy 1: The Delta and related waterways shall be used only for activities which are consistent with the sensitive environmental characteristics of this area. Any disturbance of levee vegetation should be minimized and replaced consistent with flood control and reclamation district constraints.	Consistent. The rerouting of the storm/irrigation ditch may require the removal of riparian vegetation. Removal of this vegetation may be subject to numerous regulations including, Section 1602 of the Fish and Game Code, Streambed Alteration Agreement. The applicant will comply with all applicable laws, regulations and permits relating to the potential removal of riparian vegetation along Bishop Cut.
Natural and Cultural - Open Space	III-39	Goal 1, Policy 2: Urban development adjacent to the Delta and related waterways should give special consideration to the natural hazards in this area (i.e., flooding, soil subsidence, peat fires) and shall be required to provide access to and along this resource consistent with public safety and the preservation of sensitive biological areas.	Consistent. The project site is protected from a 100-year flood event. The applicant will ensure that the design of the proposed project meets all city, State, and federal regulations regarding minimization of flooding hazards. Measure recommended in Section 4.1, Geophysical Resources, should be implemented.
Natural and Cultural - Open Space	III-40	Goal 1, Policy 6: Continue to recognize and preserve Stockton's historical and cultural resources.	Consistent. Mitigation has been provided to avoid potential cultural resource impacts.
Natural and Cultural - Open Space	III-40	Goal 2, Policy 1: Residential developments shall be encouraged to provide private open space areas.	Consistent. The project applicant has integrated 50.1 acres of parklands, recreational areas, lakes and opens space into the Crystal Bay Master Development Plan.
Natural and Cultural - Open Space	III-40	Goal 2, Policy 1: Major arterials shall be provided with landscaped median strips in order to enhance these street systems as aesthetic open space corridors.	Consistent. The project applicant has designed the main collector street to include a landscaped center median. No major arterials run through the project site.
Natural and Cultural	III-41	Implementation Programs 2: Prepare and adopt a City right-to-farm ordinance to protect the viable farm area immediately adjacent to the City from complaints due to normal agricultural operations.	Consistent. The City has adopted a right to farm ordinance that protects adjacent farm lands from existing and planned residential land use conflicts.
Natural and Cultural	III-41	Implementation Programs 3: Encourage San Joaquin County to maintain large lot zoning (minimum parcel size - 40 acres) within the agricultural lands adjacent to Stockton's Urban Service Area.	Consistent. The lands to the north adjacent to the proposed project site are zoned with a minimum parcel size of 40 acres.
Noise	III-48	Goal 2, Policy 2: The compatibility of proposed projects with existing and future noise levels due to traffic on public roadways, railroad line	Consistent. Section 4.5, Noise, assesses the noise impacts of the

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		operations, and aircraft in flight shall be evaluated by comparison to Figure 1 of the Stockton General Plan Policy Document (May 20, 1996).	proposed project.
Noise	III-49	<p>Goal 2, Policy 3: New development of residential land uses will not be permitted in areas exposed to existing or projected exterior noise levels exceeding 60 dB L_{dn}/CNEL or the standards in Policy 1 above unless the project design includes effective mitigation measures to reduce noise to the following levels:</p> <p>a. For noise due to traffic on public roadways, railroad line operations, and aircraft in flight: 60 dB L_{dn}/CNEL or less in outdoor activity areas, and 45 dB L_{dn}/CNEL or less in indoor areas. Where it is not possible to reduce exterior noise to 60 dB L_{dn}/CNEL or less by incorporating a practical application of the best available noise-reduction technology, an exterior noise level of up to 65 dB L_{dn}/CNEL will be allowed. Under no circumstances will interior noise levels be permitted to exceed 45 dB L_{dn}/CNEL with the windows and doors closed.</p>	<p>Consistent. Section 4.5, Noise, assesses the noise impacts of the proposed project. Mitigation measures are provided to comply with this policy.</p>

Table 4.6.E: Goals and Policies (General Plan Update) 2035

Goals And Policies	Goal And Policy Number	Consistency Statement
Community Development	<p>Concept 2: Neighborhood Planning And Design System The Stockton general plan 2035 policies encourage infill development and orderly expansion of the city. The community discussed the desire to approach planning of the city in district (existing developed areas) or village (new development areas) increments. Many of the planning concepts and policies in the general plan will use these geographic areas to provide focused solutions for the specific planning needs of these areas.</p>	<p>Consistent. The proposed project reflects an infill of lands remaining south of Eight Mile Road. All infrastructure will be extended from the adjacent Westlake Villages.</p>
Community Development	<p>Concept 3: Designing For Transit All development in Stockton’s future will be designed to support transit and pedestrian modes of travel. Density and design will dictate the success of a mixed-mode solution.</p>	<p>Consistent. A fundamental objective of the Crystal Bay project is to provide an orderly hierarchy of roadways to meet the different transportation demands generated by the project. In addition, the proximity of SPW’s commercial business center provides employment opportunities and the efficient movement of people and goods between developments will be facilitated.</p>
Community Development	<p>Concept 5: Community Design The design and livability of public and common spaces and places are an important part of the overall approach to city building. The Stockton general plan 2035 promotes integration of new investment in the community, not unconnected suburban subdivisions. Public places are to become social and economic centers of community life.</p>	<p>Consistent. The proposed project provides a well developed community that integrates low to high density single family residential, with open space, recreation area and park lands. The proximity of the SPW commercial development provides a nearby job base.</p>
Housing	<p>Housing - Guiding Principles Principle 1: Ensure the adequate provision of housing for all economic segments of the community with special attention to encouraging affordable housing.</p>	<p>Consistent. The proposed project will provide a maximum of 1,363 low to high density residential units. These will include single family residential, small lot, cluster or courtyard, and high density residential developments.</p>
Housing	<p>Principle 2: Promote the development of a range of housing types.</p>	<p>Consistent. The proposed project will provide a maximum of 1,363 low to high density residential units. These will include single family residential, small lot, cluster or courtyard, and high density residential developments.</p>
Economic Development	<p>Economic Development - Guiding Principles Much of Stockton’s economy is tied to population growth and has not yet evolved to attract and maintain a cluster of industries utilizing a highly skilled employee pool. A general plan goal is to attract and grow higher-paying jobs that demand these skills. Planning of large industrial areas needs to be balanced with mixed-use business districts conducive to attracting and retaining emerging industries.</p>	<p>Consistent. The Master Development Plan includes a variety of densities and uses that have been designed to complement each other. The mixture of uses are internally compatible and are meant to function as a complementary land use program.</p>

Goals And Policies	Goal And Policy Number	Consistency Statement
Economic Development	Principle 5: Designate sufficient quantities of land to accommodate the needs of projected job growth.	Consistent. The project is proposed to fulfill the future demand for housing. As such, the proposed project is consistent with the intent of this policy.
Community Design	Principle 5: Establish high standards for quality design.	Consistent. An objective of the project is to provide quality urban development while also providing maximum flexibility in the design concepts. Standards and design concepts proposed in the Master Development Plan have been designed to maintain considerable flexibility in the approach to development. All of the design concepts and guidelines are intended to promote aesthetically pleasing and environmentally sound planning development and design concepts.
Villages And Districts	Concept 2: A mix of housing and supporting uses will be found in every district and village. Denser housing would be located along transit routes and adjacent to commercial areas. Uses would be mixed and organized around public streets and spaces. Housing, employment, civic facilities, and commercial services would become part of mixed use districts and village centers. Institutional uses, such as churches and schools, would be located in residential areas providing an opportunity for joint use for park spaces and provide neighborhood social and physical focal points.	Consistent. The proposed project provides a well developed community that integrates low to high density single family residential, apartments, and condominiums with open space, recreation area and park lands. The proximity of the SPW commercial development provides a nearby job base. The Crystal Bay development includes a 8 acre neighborhood park, 3 pocket parks, as well as 29.7 acres of levee/open space that will include pedestrian trails. Park patrons will not need to cross major arterials or collector streets to access the parks, recreation areas, or trails. Crystal Bay development will utilize the elementary school that is part of the adjacent Westlake Villages development.
Villages And Districts	Concept 3: An underlying organization feature of the villages and districts is a scale and pattern that is conducive to walking and using transit. This includes block patterns, walking routes and edges, social orientation of buildings, and streetscapes that provide for pedestrian comfort and interest.	Consistent. The proposed project will provide a system of paths for pedestrians and bicyclists for access to and between important destinations within the project area, such as neighborhoods, parks and other open space amenities.
Villages And Districts	Concept 4: Stockton has a variety of parks and waterways that transverse the city. Future parkways and civic corridors would add other citywide organizational features that will connect villages and districts and their neighborhoods together. Each village would contribute to making these connections.	Consistent. Neighborhood streets within Crystal Bay will connect the individual neighborhoods to the main access roads. The pedestrian and bicycle circulation system will also provide links to areas outside Crystal Bay, including commercial centers in Spanos Park West, the community centers in Westlake, and the Delta system including Bishop Cut and the Paradise Point Marina.

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Villages And Districts	Concept 5: Each district and village would provide commercial and institutional services that support the local population. This would include a grocery store, shops, restaurants, elementary schools, post office, and neighborhood parks. Some villages may also include uses that support larger areas of the city such as shopping centers, high schools, libraries, and regional or community parks.	Consistent. The key objective of the Project Master Development Plan is to create a high quality mixed density residential community by expanding and joining the residential development to the east (Westlake and Spanos Park West) with the commercial and retail facilities to the south (Paradise Point Marina).
Villages - Guiding Principles	Principle 1: Make Stockton a more diverse, connected, and pedestrian/bicycle-friendly community by using the village as the basic planning element for expansion areas.	Consistent. The proposed project would build upon the quality of development created within Westlake and Spanos Park West and provide an inter-connected circulation and pedestrian system that will provide for and integrated and orderly expansion of the commercial and residential communities south of Eight Mile Road.
Villages	Principle 2: Pursue more land-efficient forms of development by investing in transit solutions that support compact and walkable villages.	Consistent. The proposed project will provide a system of paths for pedestrians and bicyclists for access to and between important destinations within the project area, such as neighborhoods, parks and other open space amenities.
Villages	Principle 4: Provide services to maximize sustainability and thereby reduce external trips and reliance on the automobile.	Consistent. The proposed project would build upon the quality of development created within Westlake and Spanos Park West and provide an inter-connected circulation and pedestrian system that will provide for and integrated and orderly expansion of the commercial and residential communities south of Eight Mile Road.
Interconnected Infrastructure	Concept 5: Water The long-term picture for water includes three features. First, securing a reliable supply coupled with an urban conservation program (maximizing the use of reclaimed water) is key to sustaining economic and housing objectives. Second, the distribution system will impact the development phasing and sequencing. Third, water quality as it pertains to run-off and drainage will have a long-term impact on groundwater.	Consistent. The primary water distribution system will provide the Crystal Bay Project Area with a “looped” water system, and will be fully constructed as part of the initial development phase. The secondary system is of smaller diameter water lines that would serve all of the individual project neighborhoods. This project has been designed to comply with the City of Stockton’s Stormwater Quality Control Criteria Plan.
Interconnected Infrastructure	Concept 6: Drainage San Joaquin County and the City of Stockton are located at the confluence of creeks and rivers at the edge of the delta. Expansion of the community will require “best practices” engineering solutions at a village and project level for drainage designs that protect water quality.	Consistent. The proposed lake feature includes engineering state-of-the-art bio filters for improving water quality in storm runoff.
Interconnected Infrastructure	Concept 7: Recreation and Waterways	Consistent. The Crystal Bay development includes a 8 acre

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	Parks are an integral part of the community-wide and local design framework. Parks provide a social and recreational focus for villages and districts. These open spaces are connected via streets and waterways. Waterways are intended to be an integral part of the open space system. They overlay the neighborhoods, villages, and districts with a natural system that includes walking and biking trails.	neighborhood park, 3 pocket parks, as well as 29.7 acres of levee/open space that will include pedestrian trails. Park patrons will not need to cross major arterials or collector streets to access the parks, recreation areas, or trails.
Transportation And Circulation - Guiding Principles	Principle 1: Provide a land use and transit plan that promotes choices in travel modes.	Consistent. Public transportation will be encouraged within the project site by incorporating bus turnouts and shelters along major arterial streets.
Transportation And Circulation	Principle 2: Emphasize pedestrian and bicyclist accessibility and comfort in the planning of all villages and districts.	Consistent. The proposed project will provide a system of paths for pedestrians and bicyclists for access to and between important destinations within the project area, such as neighborhoods, parks and other open space amenities.
Transportation And Circulation	Principle 6: Emphasize neighborhood traffic management concepts in the planning of all district and villages.	Consistent. The project will provide 2 access routes via Eight Mile Road and Scott Creek Drive. One of the objectives included in the overall Crystal Bay planned community is to create a system of street hierarchy that discourages traffic through neighborhood streets.
Public Facilities - Guiding Principles	Principle 1: Distribute new facilities and services to serve Stockton residents, and institutional and private sector partners.	Consistent. The key objective of the Project Master Development Plan is to create a high quality mixed density residential community by expanding and joining the residential development to the east (Westlake and Spanos Park West) with the commercial and retail facilities to the south (Paradise Point Marina).
Public Facilities	Principle 3: Plan schools as joint use “centers of the community” that include community and neighborhood parks, recreational facilities and libraries.	Consistent. The LUSD has indicated that the elementary school planned as part of the Westlake Villages project will adequately serve the Crystal Bay project. Existing middle and high schools will adequately serve the proposed project.
Public Facilities	Principle 4: Have high expectations for the design and quality of community facilities as visible and accessible places.	Consistent. The proposed project would build upon the quality of development created within Westlake and Spanos Park West and provide an inter-connected circulation and pedestrian system that will provide for and integrated and orderly expansion of the commercial and residential communities south of Eight Mile Road.

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Recreation And Waterways - Guiding Principles	Principle 3: Use waterways as recreational and visual amenities for villages and districts.	Consistent. The key objective of the Project Master Development Plan is to create a high quality mixed density residential community by expanding and joining the residential development to the east (Westlake and Spanos Park West) with the commercial, retail, and recreational facilities to the south (Paradise Point Marina).
Recreation And Waterways	Principle 7: Encourage the provision of landscaped arterials.	Consistent. The proposed streets and streetscapes for Crystal Bay serve various functions. These include movement of traffic and transit, pedestrians and bicycles, and providing street trees and other landscaping to screen and provide buffer to the built environment.
Community Services/Resources	Concept 1: Noise As Stockton develops its villages and districts, the city will need to ensure that sensitive land uses (e.g. Residential) are properly sited in order to avoid major noise generators, such as railroads, roadways, the Stockton municipal airport, and industrialized portions of the City. Furthermore, proposed noise-generating land uses will be properly sited in industrially-designated areas and shielded from other surrounding land uses.	Consistent. Section 4.5, Noise, assesses the noise impacts of the proposed project. Mitigation measures are provided to comply with this policy.
Community Services/Resources	Concept 2: Air Quality The air quality in Stockton and its surrounding region will continue to be directly affected by the balance between jobs and housing and the implementation of a transit-oriented design standard. Transit service will need to be readily available to serve the existing community and developing areas. The transit will also need to connect these areas to each other and to the employment centers in the community.	Consistent. Public transportation will be encouraged within the project site by incorporating bus turnouts and shelters along major arterial streets and by expanding and joining the residential development to the east (Westlake and Spanos Park West) with the commercial and retail facilities to the south (Paradise Point Marina).
Community Services/Resources	Concept 3: Health and Safety As part of the City's future, the provision of a responsive public health and safety system is critical. Police and fire services in the community will be expanded to serve the growing community. These services will be planned to cover all areas of the community with an equal level of service.	Consistent. To ensure that the development has adequate emergency access, provisions are made along Rio Blanco Road to provide a second access to Eight Mile Road. Additionally, the City of Stockton's Fire Department should review and approve the project plan.
Community Services/Resources	Concept 5: Natural And Cultural Resources As Stockton develops its villages and districts, the city will need to ensure that development occurs in a manner in which impacts to natural and cultural resources are avoided or minimized through proper site planning and design techniques. Development will be avoided in naturally and cultural sensitive areas wherever possible.	Consistent. Mitigation has been provided to avoid potential cultural resource impacts.

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Natural And Cultural Resources - Guiding Principles	Principle 1: Design and plan new development to reduce impacts to natural and cultural resources.	Consistent. Mitigation has been provided to avoid potential cultural resource impacts.
Natural And Cultural Resources	Principle 2: Continually identify significant cultural resources to ensure their preservation and maintain the heritage of Stockton.	Consistent. Mitigation has been provided to avoid potential cultural resource impacts.
Natural And Cultural Resources	Principle 3: Promote compact development to reduce land requirements.	Consistent. The proposed project provides a well developed community that integrates low to high density single family residential, apartments, and condominiums with open space, recreation area and park lands.
Natural And Cultural Resources	Principle 4: Support the continued preservation of productive agricultural land.	Consistent. The City has adopted a right to farm ordinance that protects adjacent farm lands from existing and planned residential land use conflicts.
Land Use – Goals & Policies	Goal 1: To ensure Stockton’s future growth will proceed in an orderly planned manner, thereby preventing urban sprawl and the wasteful use of land and promoting the efficient and equitable provision of public services.	Consistent. The proposed project provides a well developed community that integrates low to high density single family residential, apartments, and condominiums with open space, recreation area and park lands. The proximity of the SPW commercial development provides a nearby job base.
Land Use	Goal 1, Policy 5: Future Urban Development. Future urban development within the planning area should occur under the jurisdiction of the city. To this end, the city shall require that the vacant unincorporated properties be annexed to the city prior to the provision of any City services or that a conditional service agreement be executed agreeing to annex when deemed appropriate by the city.	Consistent. Based on City policies, the project site will not be annexed unless adequate services, utilities, and infrastructure are available. The project applicant will extend all infrastructure from Westlake Villages and SPW and pay appropriate fees to mitigate related impacts. Additionally, the project applicant will provide amendments to the City’s Sewer, Water, and Drainage Master Plans.
Land Use	Goal 1, Policy 6: Building Intensity And Population Density. The City shall regulate the levels of building intensity and population density according to the standards and general plan land use designations set out in Section 3.1 of the land use element and the city’s development code.	Consistent. Implementation of the Master Development Plan will ensure the appropriate building intensity/population density for the site.
Land Use	Goal 1, Policy 7: Land Use Conflicts. The City shall continue to apply the regulations and procedures of the development code and shall use the environmental process to prevent or mitigate land use conflicts.	Consistent. A Master Development Plan will be approved, and an EIR will be certified for the project.
Land Use	Goal 1, Policy 11: Safe Development.	Consistent. No hazardous nuisance conditions are present.

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	The City shall limit urban growth in areas with hazardous nuisance conditions such as noise, flooding or unstable soils.	
Land Use	Goal 1, Policy 12: Commuting Distances. The City shall strive to minimize the commuting distances between residential concentrations and employment centers.	Consistent. The project site is proximate to the Spanos Business park.
Land Use	Goal 2: To promote the permanent protection of agricultural lands outside the urban service area on the north and east and to discourage the premature conversion of agricultural lands within the urban service area.	Inconsistent. Conversion of agricultural lands within the project area could result in the premature conversion of agricultural lands to the north across eight Mile road.
Land Use	Goal 2, Policy 1: Agriculture Land Preservation. The City shall limit the wasteful and inefficient sprawl of urban uses into agriculture land.	Inconsistent. The project will convert ± 173 acres of productive agricultural lands and prime agricultural soils to urban uses.
Land Use	Goal 2, Policy 3: Land Conversion Within The Urban Service Area. The City shall discourage the premature conversion of agricultural land to urban uses within the urban service area.	Inconsistent. Conversion of agricultural lands within the project area could result in the premature conversion of agricultural lands to the north across Eight Mile road.
Land Use	Goal 3: To promote a variety of housing types and densities throughout the City to satisfy the housing needs of various age and socio-economic groups.	Consistent. The project proposes a range of densities that provide low to high density units. The proposed project will include single family residential, small lot, cluster or courtyard, and high density residential developments.
Land Use	Goal 3, Policy 1: Single Family/Multifamily Balance The City shall strive to maintain a ratio of 70 percent single family and 30 percent multifamily residential uses.	Consistent. The project proposes a range of densities that provide low to high density units. The proposed project will include 1,363 units with 971 single family residential (71%), and 392 (29%) high density residential developments.
Land Use	Goal 3, Policy 4: Residential Open Space. The City shall provide for open space in residential development in either private yards or common areas to partially meet the residents' recreational needs.	Consistent. The proposed project provides a well developed community that integrates low to high density single family residential, apartments, and condominiums with open space, recreation area and park lands. The proximity of the SPW commercial development provides a nearby job base. The Crystal Bay development includes a 8 acre neighborhood park, 3 pocket parks, as well as 29.7 acres of levee/open space that will include pedestrian trails. Park patrons will not need to cross major arterials or collector streets to access the parks, recreation areas, or trails.

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Land Use	Goal 3, Policy 9: Conflicting Uses. The City shall locate new residential developments in areas that do not conflict with existing and planned industrial or commercial big box land uses.	Consistent. The project will convert ± 173 acres of agricultural lands to urban uses.
Land Use	Goal 4: To encourage commercial facilities, at locations that provide convenient service, where their economic viability can be sustained.	Consistent. The key objective of the Master Development Plan is to create a high quality mixed density residential community by expanding and joining the residential development to the east (Westlake and Spanos Park West) with the commercial and retail facilities to the south (Paradise Point Marina).
Land Use	Goal 4, Policy 3: Commercial-Residential Integration/Compatibility. The City shall encourage the compatible integration of commercial and new residential uses. Existing residential areas shall be integrated with new commercial uses through the provisions of the development code as applicable.	Consistent. The key objective of the Project Master Development Plan is to create a high quality mixed density residential community by expanding and joining the residential development to the east (Westlake and Spanos Park West) with the commercial and retail facilities to the south (Paradise Point Marina).
Land Use	Goal 5, Policy 5: Compatible Land Use. The City shall ensure an adequate separation between sensitive land uses (residential, educational, healthcare) and industrial land uses to minimize land use incompatibility associated with noise, odors, and air pollutant emissions from industrial uses.	Consistent. The project does not propose industrial uses.
Housing Element – Goals & Policies	Goal 1: Ensure the adequate provision of sites for housing of all types, recognizing the importance of a jobs-to-housing ratio that encourages living and working in our community.	Consistent. Residential uses will be proximate to the commercial uses on the nearby Spanos Park West. The project site will also have convenient access to I-5 via Eight Mile Road. Consequently, residents in future residential uses will have convenient access to local commercial uses adjacent to the project, as well as regional commercial uses, employment centers, etc., as a result of the I-5 facility.
Housing Element	Goal 1, Policy 3: Transit Oriented Development. The City shall encourage new residential uses near main transportation routes to encourage convenient access to employment centers, schools, shopping, and recreational facilities.	Consistent. The proposed project would build upon the quality of development created within Westlake and Spanos Park West and provide an inter-connected circulation and pedestrian system that will provide for and integrated and orderly expansion of the commercial and residential communities south of Eight Mile Road.
Housing Element	Goal 1, Policy 4: Public Services Availability. The City shall insure that sites designated for new residential development are adequately served by public utilities, are minimally impacted by noise and	Consistent. The project is designed to be an extension of the adjacent Westlake Villages and Spanos Park West.

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	blighting conditions, and are compatible with surrounding land uses.	
Housing Element	Goal 2: Ensure the adequate provision of housing for all economic segments of the community with special attention to encouraging affordable housing.	Consistent. The proposed project will provide a maximum of 1,363 low to high density residential units. These will include single family residential, small lot, cluster or courtyard, and high density residential developments.
Housing Element	Goal 3: Address, and where feasible, remove governmental constraints to the development, improvement, and maintenance of the housing stock, and encourage higher density development.	Consistent. High density residential uses are proposed.
Housing Element	Goal 5: Promote housing opportunities for all residents and support the elimination of discrimination in housing.	Consistent. A variety of housing types and densities are proposed.
Housing Element	Goal 5, Policy 3: Housing Size And Affordability. The City shall encourage the provision of housing units to meet the needs of families of all sizes affordable to all income levels.	Consistent. The proposed project will provide a maximum of 1,363 low to high density residential units. These will include single family residential, small lot, cluster or courtyard, and high density residential developments.
Housing Element	Goal 6: Promote energy conservation in Stockton's housing developments.	Consistent. Building designs proposed in the project will be required to conform to State energy conservation standards and Title 24 regulations. Mitigation proposed in Section 4.2, Air Quality, will help reduce air emissions.
Community Design – Goals & Policies	Goal 1, Policy 4: Transition To Rural Landscapes. Development at the edges of the community shall make a distinctive transition between rural, natural, and developed areas. Transitions shall not diminish the visual quality of open space. Sound walls and utilitarian edges of developments shall not be allowed as an interface between development and rural landscapes.	Consistent. An objective of the project is to provide sound urban development while also providing maximum flexibility in the design concepts. Standards and design concepts proposed in the Master Development Plan have been designed to maintain considerable flexibility in the approach to development. All of the design concepts and guidelines are intended to promote aesthetically pleasing and environmentally sound planning development concepts.
Community Design	Goal 4: To create new districts and neighborhoods with a sense of place.	Consistent. The proposed project provides a well developed community that integrates low to high density single family residential, apartments, and condominiums with open space, recreation area and park lands.
Community Design	Goal 4, Policy 3: District Gateways. The City shall require that districts and villages include a deliberate gateway and	Consistent. The proposed project will extend the City's boundary west of the existing Westlake Villages residential

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	entrance design that is inviting, attracting and complementary to the overall design of the district or village.	development. The Master Development Plan for the proposed project provides landscaping and entry treatments into the residential development from Eight Mile Road that are aesthetically pleasing and will promote a positive image for the City.
Consistent. Consistent. Community Design	Goal 6, Policy 2: Streetscape. The City shall require every roadway project include sidewalks and planting strips sized for canopy trees.	Consistent. The proposed project includes an extensive pedestrian network and landscape/tree layout.
Transportation And Circulation – Goals & Policies	Goal 2, Policy 3: Dual Access. The City shall require at least two (2) independent access routes for all major development areas.	Consistent. The project will provide 2 access routes via Eight Mile Road and Scott Creek Road. One of the objectives included in the overall Crystal Bay planned community is to create a system of street hierarchy that discourages traffic through neighborhood streets.
Transportation And Circulation	Goal 2, Policy 4: Multiple Transportation Modes. The City shall require that significant trip-generating land uses be served by roadways adequate to provide efficient access by multiple transportation modes with a minimum of delay.	Consistent. Neighborhood streets within Crystal Bay will connect the individual neighborhoods to the main access roads. The pedestrian and bicycle circulation system will also provide links to areas outside Crystal Bay, including commercial centers in Spanos Park West, the community centers in Westlake, and the Delta system including Bishop Cut and the Paradise Point Marina.
Transportation And Circulation	Goal 2, Policy 6: Efficient Traffic Flow The City shall ensure that highways and arterial streets within its jurisdiction provide for the flow of traffic with a minimum of delay. Therefore, the following should be undertaken: A. Minimize the number of intersections along arterials. B. Reduce curb cuts along arterials through the use of common access easements, backup lots, and other design measures. C. Provide grade separation at all major railroad crossing with arterials. D. Extend arterials over waterways, railroads, and through undeveloped areas to provide for the continuous flow of through traffic and appropriate area access. E. Consider alternative designs for high capacity multi-modal corridors.	Consistent. One of the objectives included in the overall Crystal Bay planned community is to create a system of street hierarchy that discourages traffic through neighborhood streets. Feasible mitigation is available to offset all project-related traffic impacts, however, feasible mitigation does not exist to offset all cumulative impacts.
Transportation And Circulation	Goal 2, Policy 10: Inter-Neighborhood Traffic Consistent with the goals of the city of Stockton neighborhood traffic management programs, the city shall encourage inter-neighborhood traffic movement on arterial and collector streets and discourage such traffic from using neighborhood streets.	Consistent. One of the objectives included in the overall Crystal Bay planned community is to create a system of street hierarchy that discourages traffic and speeding through neighborhood streets.
Transportation And	Goal 2, Policy 11: Neighborhood Street Design	Consistent. One of the objectives included in the overall

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Circulation	The City shall ensure that neighborhood streets are designed to discourage through traffic and excessive speeds.	Crystal Bay planned community is to create a system of street hierarchy that discourages traffic and speeding through neighborhood streets.
Transportation And Circulation	Goal 2, Policy 13: Roadway Dedications The City shall require major public street and highway right-of-way dedications, highway interchanges and improvements (i.e., arterial and collector streets and related bridges or railroad crossings) at the initial stage of development.	Consistent. The Master Development Plan includes standards, design guidelines, and concepts to ensure that traffic circulation will adequately accommodate the demands generated by the proposed project.
Transportation And Circulation	Goal 2, Policy 21: Parking Supply The City shall require a sufficient supply of off-street parking for all land uses in order to reduce congestion, improve overall operation and ensure land use compatibility.	Consistent. Off-street parking will be included in all non-residential uses. The Master Development Plan includes standards, design guidelines, and concepts to ensure that off-street parking will adequately accommodate the parking demand generated by the proposed nonresidential land uses.
Transportation And Circulation	Goal 3, Policy 2: Transit-Related Public Improvements The City shall ensure that larger new developments along arterial and major collector streets provide transit-related public improvements (e.g., bus pullouts, bus shelters) to encourage transit use.	Consistent. The Master Development Plan include provisions for bus parking areas, turnouts, and shelters. The design and location of these facilities will be approved by the Community Development Director and Transit Authority.
Transportation And Circulation	Goal 4, Policy 1: Pedestrian Facilities The City shall encourage pedestrian travel as a viable mode of movement throughout the city by providing safe and convenient pedestrian facilities, particularly in commercial areas and residential neighborhoods. Installation of crosswalks and other pedestrian safety measures shall be governed by the city of Stockton pedestrian safety and crosswalk installation guide.	Consistent. The proposed project will provide a system of paths for pedestrians and bicyclists for access to and between important destinations within the project area, such as neighborhoods, parks and other open space amenities.
Transportation And Circulation	Goal 4, Policy 13: Street Projects At the time of new street construction, pavement overlays, or seal coat projects, the city shall, where feasible, implement all bikeways within the project limits as detailed in the adopted master plan.	Consistent. The proposed project will provide a system of paths for pedestrians and bicyclists for access to and between important destinations within the project area, such as neighborhoods, parks and other open space amenities as detailed in the Master Development Plan.
Public Facilities And Services - Goals & Policies	Goal 1, Policy 4: Development Impacts To Existing Infrastructure The City shall ensure proposed developments do not create substantial adverse impacts on existing infrastructure and that the necessary infrastructure will be in place to support the development.	Consistent. All infrastructure, public facilities, and services required by the City of Stockton will be provided to serve each phase of development and will extend from Westlake Villages.
Public Facilities And Services	Goal 1, Policy 5: Funding For Public Facilities The City shall continue to utilize developer fees, the city's public facilities fees, and other various methods (i.e., grant funding and assessment districts) to finance	Consistent. Public services (fire, police, schools, etc.) would be funded and provided for by development impact fees. These fees would be levied at the time of building

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	public facilities (e.g. sewer, streets, water parks and recreation, police and fire, library, general government).	permits, which would provide for the provision of public services as demand increases.
Public Facilities And Services	Goal 2: To ensure adequate, reliable, and safe water supplies to all existing and future city of Stockton development, even through drought periods.	Consistent. The water distribution system will provide the project area with a “looped” system and will be fully constructed as a part of the initial development phase as detailed in the Master Development Plan.
Public Facilities And Services	Goal 2, Policy 1: Water Conservation The City shall continue to implement water conservation programs that show promise of saving significant amounts of water at reasonable cost.	Consistent. Landscaping irrigation will be designed with the most current water conservation policies and available equipment. The onsite lake may provide a source of water for landscape irrigation.
Public Facilities And Services	Goal 2, Policy 7: Water Supply For New Development The city shall ensure that water supply capacity and infrastructure are in place prior to approval of new development.	Inconsistent. The water distribution system will provide the project area with a “looped” system and will be fully constructed as a part of the initial development phase.
Public Facilities And Services	Goal 3: To ensure adequate wastewater collection and treatment, and safe disposal of waste.	Consistent. Crystal Bay will be served by the Stockton sanitary sewer system. The wastewater will be conveyed from the project site to the City’s Regional Wastewater Control Facility (RWCR).
Public Facilities And Services	Goal 3, Policy 1: Sanitary Sewer Service Area All urban development shall be served by a collection system to avoid possible contamination of groundwater by septic systems.	Consistent. Crystal Bay will be served by the Stockton sanitary sewer system. A network of gravity flow sewer mains will serve the individual neighborhoods. The wastewater will be collected and conveyed from the project site to the City’s Regional Wastewater Control Facility (RWCR).
Public Facilities And Services	Goal 4: To manage stormwater in a manner that is safe and environmentally sensitive to protect people and property and to maintain the quality of receiving waters.	Consistent. The applicant will be required to comply with all conditions set forth in the NPDES General Construction Permit and Waste Discharge Permit, and any City regulations regarding treatment of storm water runoff. Prior to the commencement of construction activities, the contractor will provide proof of a SWPPP.

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Public Facilities And Services	<p>Goal 4, Policy 1: Creek And Slough Capacity</p> <p>The city shall require detention storage with measured release to ensure that the capacity of downstream creeks and sloughs will not be exceeded. To this end;</p> <ul style="list-style-type: none"> -outflow to creeks and sloughs shall be monitored and controlled to avoid exceeding downstream channel capacities; -storage facilities shall be coordinated and managed to prevent problems caused by timing of storage outflows. 	<p>Consistent. The applicant will be required to comply with all conditions set forth in the NPDES General Construction Permit and Wastewater Discharge Permit, and any City regulations regarding treatment of storm water runoff. Prior to the commencement of construction activities, the contractor will provide proof of a SWPPP.</p>
Public Facilities And Services	<p>Goal 4, Policy 2: Watershed Drainage Plan</p> <p>The city shall require the preparation of watershed drainage plans for proposed development within the urban service boundary. These plans shall define needed drainage improvements and estimate construction costs for these improvements.</p>	<p>Consistent. The applicant will be required to comply with all conditions set forth in the NPDES General Construction Permit and Wastewater Discharge Permit, and any City regulations regarding treatment of storm water runoff. Prior to the commencement of construction activities, the contractor will provide proof of a SWPPP.</p>
Public Facilities And Services	<p>Goal 4, Policy 5: Public Facilities Fees</p> <p>The city shall develop a stormwater management utility fee that will financially support the stormwater system operation, the stormwater management plan and maintenance and management program activities.</p>	<p>Consistent. Maintenance of the lakes and lake systems used as stormwater drainage/runoff storage would be through fees collected as a part of the Home Owners Association dues.</p>
Public Facilities And Services	<p>Goal 5:</p> <p>To ensure the safe and efficient disposal or recycling of solid waste.</p>	<p>Consistent. Solid waste from Crystal Bay will be collected by the City's franchisee, Sunrise Sanitation and transported to facilities owned and operated by Forward Landfill. The project is required to comply with all City and State mandated programs for the reduction of solid waste.</p>
Public Facilities And Services	<p>Goal 5, Policy 1: Solid Waste Reduction</p> <p>The city shall promote the maximum use of solid waste reduction, recycling, and composting of wastes and strive to reduce commercial and industrial waste on an annual basis.</p>	<p>Consistent. Solid waste from Crystal Bay will be collected by the City's franchisee, Sunrise Sanitation and transported to facilities owned and operated by Forward Landfill. The project is required to comply with all City and State mandated programs for the reduction of solid waste.</p>
Public Facilities And Services	<p>Goal 5, Policy 7: Development Requirements</p> <p>The city shall ensure that all new development has appropriate provisions for solid waste storage, handling and collection pickup.</p>	<p>Consistent. Solid waste from Crystal Bay will be collected by the City's franchisee, Sunrise Sanitation and transported to facilities owned and operated by Forward Landfill. The project is required to comply with all City and State mandated programs for the reduction of solid waste.</p>

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Public Facilities And Services	<p>Goal 7: To provide protection to the public through effective law enforcement and the incorporation of crime prevention features into new development.</p>	<p>Consistent. Through contribution of development fees, the project will provide additional police staffing to maintain the City's ratio of one sworn officer for every 600 people.</p>
Public Facilities And Services	<p>Goal 7, Policy 5: Design Features For Crime Prevention And Reduction The city shall continue to promote the use of building and site design features as a means for crime prevention and reduction.</p>	<p>Consistent. The Master Development Plan includes features to facilitate the concept of defensible space (e.g. lighting, and landscaping requirements). The applicant will consult with the City of Stockton's Police Department regarding any additional measures that are feasible for the proposed project.</p>
Public Facilities And Services	<p>Goal 8: To provide protection to the public through effective fire protection services and the incorporation of fire safety features in new development.</p>	<p>Consistent. All plans for future development in Crystal Bay shall be reviewed by the City of Stockton Fire Department for conformance with the Uniform Building Code, Uniform Fire Code and City Standards as part of the City's standard review process.</p>
Public Facilities And Services	<p>Goal 8, Policy 6: Adequate Emergency Access and Routes The city shall require that new development provide adequate access for emergency vehicles, particularly firefighting equipment, as well as provide evacuation routes.</p>	<p>Consistent. All plans for future development in Crystal Bay shall be reviewed by the City of Stockton Fire Department for conformance with the Uniform Building Code, Uniform Fire Code and City Standards as part of the City's standard review process.</p>
Public Facilities And Services	<p>Goal 9: To ensure adequate school facilities are available to meet the needs of city residents.</p>	<p>Consistent. The project will generate additional school aged children; however in discussions with the Lodi School District, the existing school facilities within the District can accommodate the additional demand without the need for additional facilities.</p>
Public Facilities And Services	<p>Goal 10, Policy 1: The city shall require that all new residential areas, industrial areas, and business parks be wired for new information technologies.</p>	<p>Consistent. Crystal Bay will be serviced with telephone/fiber-optics, cable, gas, electrical, and wireless communication from Westlake Villages.</p>

Goals And Policies	Goal And Policy Number	Consistency Statement
Public Facilities And Services	<p>Goal 11, Policy 1: Library Standards.</p> <p>The city shall continue to expand library services to meet the educational and informational needs of all city residents. The city shall strive to maintain the following standards:</p> <p>A. 0.75 square feet of library space per person (750sf per 1,000 persons) with 5 reader's seats per 1,000 persons.</p> <p>B. 4.15 books per 1,000 persons.</p> <p>C. A minimum of 2,000 audio and video recordings per branch library.</p> <p>D. A minimum of 10 titles of magazine and newspaper subscriptions per 1,000 persons.</p>	<p>Consistent. Additional demand for library services will be created with the development of Crystal Bay. Additional library services would be funded and provided for by development impact fees.</p>
Recreation And Waterways – Goals & Policies	<p>Goal 1:</p> <p>Provide a full range of recreational facilities and services where they are accessible to the public and are compatible with the area in which they are located.</p>	<p>Consistent. The proposed project includes a total of 13.1 acres of parkland. This includes an 8 acre neighborhood park and a 7.2 acre lake. The project will also include three pocket parks with a total of 4.4 acres. In addition to the park dedication, the proposed project also includes 29.7 acres of levee/open space.</p>
Recreation And Waterways	<p>Goal 2, Policy 5: Stormwater Detention Basins For Recreational Uses</p> <p>The city shall require, wherever feasible, that stormwater detention basins be designed for recreational uses.</p>	<p>Consistent. The on-site lake will be filled with storm water and/or ground water.</p>
Recreation And Waterways	<p>Goal 2, Policy 7: Design Of Community Parks</p> <p>The city shall design community parks to meet the recreational needs of large sections of the community, such as a village area. These parks should allow for larger group activities and recreational activities not suited for neighborhood parks. Park land directly adjacent to private property shall be separated from such property by a 6 foot high (minimum) masonry wall located on the private property.</p>	<p>Consistent. A 12 acre community park will be provided within the Westlake Villages development, within ½ miles east of the Crystal Bay project. Improvements within the park facility include: a group picnic area, soccer and softball fields, an interactive spray fountain, play grounds, a restroom, and shared parking. The 8 acre neighborhood park in the Crystal Bay development will provide an 8' tall masonry wall between adjoining residential development unless otherwise approved by the City Department of Parks</p>

Goals And Policies	Goal And Policy Number	Consistency Statement
		and Recreation.
Recreation And Waterways	<p>Goal 3, Policy 1: Community Center Standards</p> <p>The city shall ensure that community centers are provided at a level that meets the following standards;</p> <ul style="list-style-type: none"> -city-owned community centers - 1 center/50,000 population. -combined city-owned, school districts - 1 center/30,000 population -combined city-owned, school districts - ½ square foot per resident -minimum to preferred size per center - 15,000 to 35,000 square feet for multi-purpose centers. -service radius - 1 ½ miles. 	<p>Consistent. Private and public recreational areas are included in the proposed project. In light of the fact that some of these facility will be privately owned/operated, the recreation areas will not meet all of the community center needs of the residents, when compared to a facility that would be publicly owned and operated. However, the adjacent Westlake Villages elementary school could serve as a community center as this facility will be open to the general public. The City's General Plan include provisions to include all schools as meeting the requirement for community centers.</p>
Recreation And Waterways	<p>Goal 3, Policy 3: Development Of Bikeways And Trails</p> <p>The city shall develop linear parkways, recreational bikeways, and trails within villages that connect with community and neighborhood parks located inside the villages as well as outside the villages into other existing neighborhoods (i.e., Calaveras River path, EBMUD right-of-way).</p>	<p>Consistent. The proposed project will provide a system of paths for pedestrians and bicyclists for access to and between important destinations within the project area, such as neighborhoods, parks and other open space amenities.</p>
Recreation And Waterways	<p>Goal 3, Policy 5: Acquisition Of Open Space</p> <p>The city should encourage developers to allocate privately developable and publicly accessible open space.</p>	<p>Consistent. The proposed project will include 5.1 acres of mini parks throughout the development, as well as 8.7 acres of open space/greenbelt which will include bicycle and pedestrian trails. In addition, a 7.2 acre lake will be developed near the 8 acre neighborhood park.</p>
Recreation And Waterways	<p>Goal 3, Policy 6: Development Of Utility Easements For Open Space</p> <p>The city shall encourage developers to develop utility easement property into usable public open space areas. Such land within utility easements shall not be credited toward parkland acreage requirements nor are eligible for parkland fee reimbursement.</p>	<p>Consistent. No utility easements will be used for open space areas within the proposed project.</p>
Health And Safety	<p>Goal 2, Policy 3: Protect Residential Areas</p> <p>The City shall ensure exterior noise levels for existing and future dwellings in</p>	<p>Consistent. Section 4.5, Noise, assesses the noise impacts of the proposed project. Mitigation measures are provided</p>

Goals And Policies	Goal And Policy Number	Consistency Statement
	residential areas do not exceed exterior noise levels of 60 dBA CNEL and interior noise levels of 45 dBA CNEL.	to comply with this policy.
Health And Safety	<p>Goal 2, Policy 6: Mitigating Highway Noise</p> <p>The City will work with Caltrans to mitigate noise impacts on sensitive receptors near Interstate 5, State Route 99, and other key state roadways.</p>	<p>Consistent. Section 4.5, Noise, assesses the noise impacts of the proposed project. Mitigation measures are provided to comply with this policy.</p>
Health And Safety	<p>Goal 2, Policy 12: Limiting Construction Activities</p> <p>The city shall limit construction activities to the hours of 7am to 7pm, Monday through Saturday. No construction shall occur on Sundays or national holidays without a written permit from the city.</p>	<p>Consistent. Section 4.5, Noise, assesses the noise impacts of the proposed project. Mitigation measures are provided to comply with this policy.</p>
Health And Safety	<p>Goal 2, Policy 13: Sound Attenuation Features</p> <p>The city shall require sound attenuation features such as walls, berming, heavy landscaping, and between commercial, industrial, and residential uses to reduce noise and vibration impacts.</p>	<p>Consistent. Section 4.5, Noise, assesses the noise impacts of the proposed project. Mitigation measures are provided to comply with this policy.</p>
Health And Safety	<p>Goal 2, Policy 19: Commercial Uses</p> <p>The City shall ensure that noise produced by commercial uses shall not exceed 75 dB L_{dn}/CNEL at the nearest property line.</p>	<p>Consistent. Section 4.5, Noise, assesses the noise impacts of the proposed project. Mitigation measures are provided to comply with this policy.</p>
Health And Safety	<p>Goal 3, Policy 1: Seismic Safety Of Structures And Public Facilities</p> <p>The city shall require that new structures intended for human occupancy, public facilities (i.e. Treatment plants and pumping stations, major communication lines, evacuation routes, etc.) And emergency/disaster facilities (i.e., police and fire stations, etc.) Are designed and constructed to minimize risk to the safety of people due to ground shaking.</p>	<p>Consistent. All plans for future development in Crystal Bay shall be reviewed by the City of Stockton Fire Department for conformance with the Uniform Building Code, Uniform Fire Code and City Standards as part of the City's standard review process.</p>
Health And Safety	<p>Goal 3, Policy 2: Development In Areas Subject To Geologic Hazards.</p> <p>The city shall discourage incompatible land uses from being located in areas subject to geologic or seismic hazards (e.g., expansive, liquefaction, etc.).</p>	<p>Consistent. All plans for future development in Crystal Bay shall be reviewed by the City of Stockton Fire Department for conformance with the Uniform Building Code, Uniform Fire Code and City Standards as part of the City's standard review process.</p>

Goals And Policies	Goal And Policy Number	Consistency Statement
Health And Safety	<p>Goal 3, Policy 3: Uniform Building Code</p> <p>The city shall continue to require that alterations to existing buildings and all new buildings be built according to the seismic requirements of the uniform building code.</p>	<p>Consistent. All plans for future development in Crystal Bay shall be reviewed by the City of Stockton Fire Department for conformance with the Uniform Building Code, Uniform Fire Code and City Standards as part of the City's standard review process.</p>
Health And Safety	<p>Goal 4:</p> <p>To improve air quality and to minimize the adverse effects of air pollution on human health and the economy.</p>	<p>Inconsistent. Generation of fugitive dust and pollutant emissions during construction may result in substantial short-term increases in air pollutants. This would be a contribution to short-term cumulative air quality impacts and is unavoidable.</p>
Health And Safety	<p>Goal 4, Policy 7: Air Quality Mitigation</p> <p>The city shall require projects to comply with the city's adopted air quality impact assessment and mitigation process.</p>	<p>Consistent. Measures are proposed in Section 4.3, Air Quality, to mitigate impacts of the proposed project. The General Plan will be amended as part of the proposed project. If approved, the amendment will be included in the next revision of the regional AQAP.</p>
Health And Safety	<p>Goal 4, Policy 9: Dust Suppression Measures</p> <p>The city shall require contractors to implement dust suppression measures during excavation, grading, and site preparation activities. Techniques may include, but are not limited to the following:</p> <ul style="list-style-type: none"> A. Site watering or application of dust suppressants, B. Phasing or extension of grading operations, C. Covering of stockpiles, D. Suspension of grading activities during high wind periods (typically winds greater than 25 miles per hours), and E. Revegetation of graded areas. 	<p>Consistent. Generation of fugitive dust and pollutant emissions during construction may result in substantial short-term increases in air pollutants despite suppression measures. Compliance with SJAQMD rules and mitigation measures from Section 4.3, Air Quality, will minimize dust generation during construction.</p>

Goals And Policies	Goal And Policy Number	Consistency Statement
Health And Safety	<p>Goal 5: To protect city residents and property from the risks involved in the transport, distribution, use, and storage of hazardous materials.</p>	<p>Consistent. The project does not include land uses that are associated with the routine transport of hazardous materials/wastes.</p>
Health And Safety	<p>Goal 5, Policy 2: Transporting Hazardous Materials The city shall strive to ensure that hazardous materials are used, transported, and disposed within the city in a safe manner and in compliance with local, state, and federal safety standards.</p>	<p>Consistent. Extensive improvements have occurred to levee structures surrounding the project area. As a result of these improvements, the project site is not subject to 100-year flood plain constraints. As indicated in section 4.1, Geophysical Resources, soil characteristics associated with the project site are considered capable of supporting the proposed development provided appropriate engineering techniques are incorporated.</p>
Health And Safety	<p>Goal 6, Policy 1: New Urban Development The city shall approve new urban development only when the developer shows it to be protected from a 100-year flood.</p>	<p>Consistent. Extensive improvements have occurred to levee structures surrounding the project area. As a result of these improvements, the project site is not subject to 100-year flood plain constraints. As indicated in section 4.1, Geophysical Resources, soil characteristics associated with the project site are considered capable of supporting the proposed development provided appropriate engineering techniques are incorporated.</p>
Health And Safety	<p>Goal 6, Policy 7: Roadway System Roadway systems for areas protected from flooding by levees shall be designed to provide multiple escape routes for residents in the event of a levee failure.</p>	<p>Consistent. Mitigation is proposed in Section 4.7, Traffic and Circulation, to ensure that the entire development has adequate emergency access. Additionally, the City of Stockton's Fire Department should review and approve the project plan.</p>
Health And Safety	<p>Goal 7, Policy 5: Enforce Minimum Road Widths And Clearances The city shall continue to enforce minimum road widths and clearances around structures to promote fire and safety protection and access.</p>	<p>Consistent. Crystal Bay includes a hierarchy of roadways, a pedestrian and bikeway network, and public transit. Emphasis is placed on ensuring connectivity between uses, creating a safe and efficient circulation system, complying with the City of Stockton transportation policies and improvement programs.</p>
Youth And Education –	<p>Goal 3, Policy 5: Educational And Child Care Facilities</p>	<p>Consistent. The proposed Crystal Bay development will</p>

Goals And Policies	Goal And Policy Number	Consistency Statement
Goals & Policies	The city shall consider the need for educational facilities and childcare created by new residential and commercial development projects.	utilize the elementary school that is part of the adjacent Westlake Villages development. The LUSD has indicated that the elementary school planned as part of the Westlake Villages project will adequately serve the Crystal Bay project. Existing middle and high schools will adequately serve the proposed project.
Natural And Cultural Resources – Goals & Policies	<p>Goal 1, Policy 1: Protect Natural Resources</p> <p>The city shall strive to protect natural resource areas, fish and wildlife habitat, scenic areas, open space areas, agricultural lands, parks, and other cultural/historic resources (including oak trees) from encroachment or destruction by incompatible development.</p>	<p>Consistent. The project shall implement the SJMSCP conservation strategy, which can include mitigation fees, conservation easements, mitigation bank credits or an alternative approved mitigation plan. Mitigation for specific species will be implemented according to the SJMSCP.</p>
Natural And Cultural Resources	<p>Goal 1, Policy 2: Establish Buffer Areas</p> <p>The city shall encourage the use of open space or recreational buffers between incompatible land uses.</p>	<p>Consistent. The proposed project includes a total of 13.1 acres of parkland. This includes an 8 acre neighborhood park and a 7.2 acre lake. The project will also include three pocket parks with a total of 4.4 acres. In addition to the park dedication, the proposed project also includes 29.7 acres of levee/open space.</p>
Natural And Cultural Resources	<p>Goal 1, Policy 3: Preserve Open Space</p> <p>The city shall promote contiguous and compact development to preserve open space land.</p>	<p>Consistent. The project proposes infill development with three residential density types including multi-family density. This arrangement of uses is considered compact.</p>
Natural And Cultural Resources	<p>Goal 1, Policy 5: Recreational Areas</p> <p>The city will reserve, preserve, and promote areas particularly suited for open space/recreational uses. Appropriate public access to these resources shall also be preserved, enhanced, and restored.</p>	<p>Consistent. The project is utilizing the City’s park space provision of three acres per 1,000 residences. Based on the projected population for this project site approximately 12.1 acres of parks will be required by the development, in which Crystal Bay is providing 13.1 acres of park space.</p>
Natural And Cultural Resources	<p>Goal 2:</p> <p>To preserve and protect sensitive habitats and species in the planning area and the Sacramento-San Joaquin Delta.</p>	<p>Consistent. The project shall implement the SJMSCP conservation strategy, which can include mitigation fees, conservation easements, mitigation bank credits or an alternative approved mitigation plan. Mitigation for specific species will be implemented according to the SJMSCP.</p>
Natural And Cultural Resources	<p>Goal 2, Policy 6: New Development In Sensitive Areas</p>	<p>Consistent. The project shall implement the SJMSCP conservation strategy, which can include mitigation fees,</p>

Goals And Policies	Goal And Policy Number	Consistency Statement
	The city shall require careful planning of new development in areas that are known to have particular value for biological resources to maintain sensitive vegetation and wildlife habitat.	conservation easements, mitigation bank credits or an alternative approved mitigation plan. Mitigation for specific species will be implemented according to the SJMSCP.
Natural And Cultural Resources	<p>Goal 2, Policy 12: Requirements For Biological Studies</p> <p>On sites that have potential to contain critical or sensitive habitats or special-species or are within 100 feet of such areas, the city shall require the project applicant to have the site surveyed by a qualified biologist. A report on the findings of this survey shall be submitted to the city as part of the application process.</p>	<p>Consistent. The project shall implement the SJMSCP conservation strategy, which can include mitigation fees, conservation easements, mitigation bank credits or an alternative approved mitigation plan. Mitigation for specific species will be implemented according to the SJMSCP.</p>
Natural And Cultural Resources	<p>Goal 3:</p> <p>To encourage the identification, protection, and enhancement of the city's archaeological, historical, and paleontological resources for their cultural values.</p>	<p>Consistent. There are no areas of archaeological/historic values within the project site. The area is currently used for agricultural uses and no oak groves or other environmentally sensitive areas will be affected.</p>

Goals And Policies	Goal And Policy Number	Consistency Statement
Natural And Cultural Resources	<p>Goal 3, Policy 5: Archaeological Resources</p> <p>The City shall support efforts to protect and preserve archaeological resources. Prior to project approval, the city shall require the project applicant to have a qualified archeologist conduct the following activities: (1) conduct a record search at the Central California information center located at California State University Stanislaus and other appropriate historical repositories, (2) conduct field surveys where appropriate, and (3) prepare technical reports, where appropriate, meeting California office of historic preservation standards (archeological resource management reports).</p>	<p>Consistent. There are no areas of archaeological/historic values within the project site. The area is currently used for agricultural uses and no oak groves or other environmentally sensitive areas will be affected.</p>
Natural And Cultural Resources	<p>Goal 3, Policy 6: Discovery Of Archaeological Resources</p> <p>In the event archaeological resources are discovered during site excavation, grading, or construction, work on the project site will be suspended until the significance of the features can be determined by a qualified archaeologist. The city will require that a qualified archeologist make recommendations for measures necessary to protect a site or to undertake data recovery, excavation, analysis, and curation of archaeological materials.</p>	<p>Consistent. Although no Cultural Resource impacts have been identified, discovery of unknown resources can occur. To prevent significant impacts, if deposits of prehistoric, historic archaeological materials or paleontology resources are encountered during the project activities, all work within 50 feet of the discovery should be redirected and a qualified archaeologist or paleontologist shall be contracted to evaluate the finds and make recommendations. During grading or other invasive site construction activities, the contractor shall also comply with Section 7050.5 of the California Health and Safety Code identified in the EIR.</p>
Natural And Cultural Resources	<p>Goal 5, Policy 1: Soil Conservation For Agriculture</p> <p>The city shall encourage the conservation of agricultural soils to provide a base for agricultural productivity and the City's economy.</p>	<p>Inconsistent. The project will convert ± 173 acres of productive agricultural lands and prime agricultural soils to urban uses.</p>
Natural And Cultural Resources	<p>Goal 5, Policy 3: Soil Erosion</p> <p>The City shall encourage the implementation of measures to minimize soil erosion from wind and water related to the construction of new development.</p>	<p>Consistent. An erosion control plan shall be submitted to the City of Stockton and all applicable State and city codes and regulations and adopted standards shall be implemented.</p>

Policy Consistency Conclusion

The above consistency analysis concludes that the proposed Crystal Bay project is consistent with a majority of the General Plan policies that have applicability to the project. Inconsistencies with agricultural land uses are discussed at the beginning of this section (**Impact LU-2**).

4.6.4 Level of Significance after Mitigation

Implementation of the proposed Crystal Bay project is consistent with a majority of the City's policies that are relevant to the project. The conversion to urban uses will represent an irretrievable loss of prime agricultural lands and soils. This impact is significant and unavoidable.

4.7 TRAFFIC AND CIRCULATION

This section of the EIR describes the transportation and circulation conditions in the area surrounding the project site, and identifies transportation impacts associated with development of the proposed project. The analysis focuses on potential impacts to intersections, roadway and freeway segments, and evaluates the project's consistency with the City of Stockton *General Plan Policy Document* (adopted January 22, 1990). It also considers the transportation policies (including new service level thresholds) as well as new land use and roadway facilities included in the *2035 General Plan Update*. Significant impacts are identified for each facility type and mitigation measures are identified to address these impacts. This section was prepared by Fehr & Peers and related technical analyses are included in the Appendix.

4.7.1 Existing Setting

This section describes the existing transportation infrastructure including the road system, bicycle facilities, and pedestrian facilities. No transit service is provided in the study area so it is not included. The study intersections are identified, as are the analysis scenarios. The methods used to evaluate intersection, roadway and freeway segment operations are discussed, followed by their existing operational characteristics. Existing plus Approved Projects, *1990 General Plan* build-out (2025), and *2035 General Plan Update* build-out without project conditions are also discussed.

Roadway System

The Spanos Parcel (heretofore referred to as Crystal Bay) is located east of Rio Blanco Road and west of Interstate 5 (I-5) (adjacent to the Westlake at Spanos Park West development), and south of Eight Mile Road in the City of Stockton. The roadways in the study area are described below and their locations in relation to the site are shown on Figure 4.7.1. The locations of the study intersections are also shown on Figure 4.7.1.

I-5 is a major north-south freeway that traverses the western United States, originating in southern California and continuing north towards Sacramento and beyond. *I-5* runs through the western portion of the City of Stockton, east of the project site. Access to the site from *I-5* is provided via an interchange at Eight Mile Road. Three mixed-flow lanes are provided in each direction on *I-5* in the vicinity of the project site.

Eight Mile Road is generally a two-lane, east-west rural roadway that extends from west of *I-5* to east of State Route (SR) 99. The Eight Mile Road Precise Plan call for eight lanes from *I-5* to west of Regatta Lane, and two to six-lanes west of Regatta Lane. As this roadway is being improved, sidewalks and bicycle facilities are being constructed. The Eight Mile Road Precise Plan would need to be amended to provide project access on Eight Mile Road.

Trinity Parkway is a four to six-lane, north-south roadway that connects McAuliffe Drive to Eight Mile Road on the west side of *I-5*. This roadway provides primary access to the commercial portion of the Park West Place project. Bicycle lanes and sidewalks are provided along the entire length of the roadway. Trinity Parkway is planned as a four-lane arterial from McAuliffe Drive to Hammer Lane and as a two-lane arterial from Hammer Lane to March Lane. The extension of this roadway

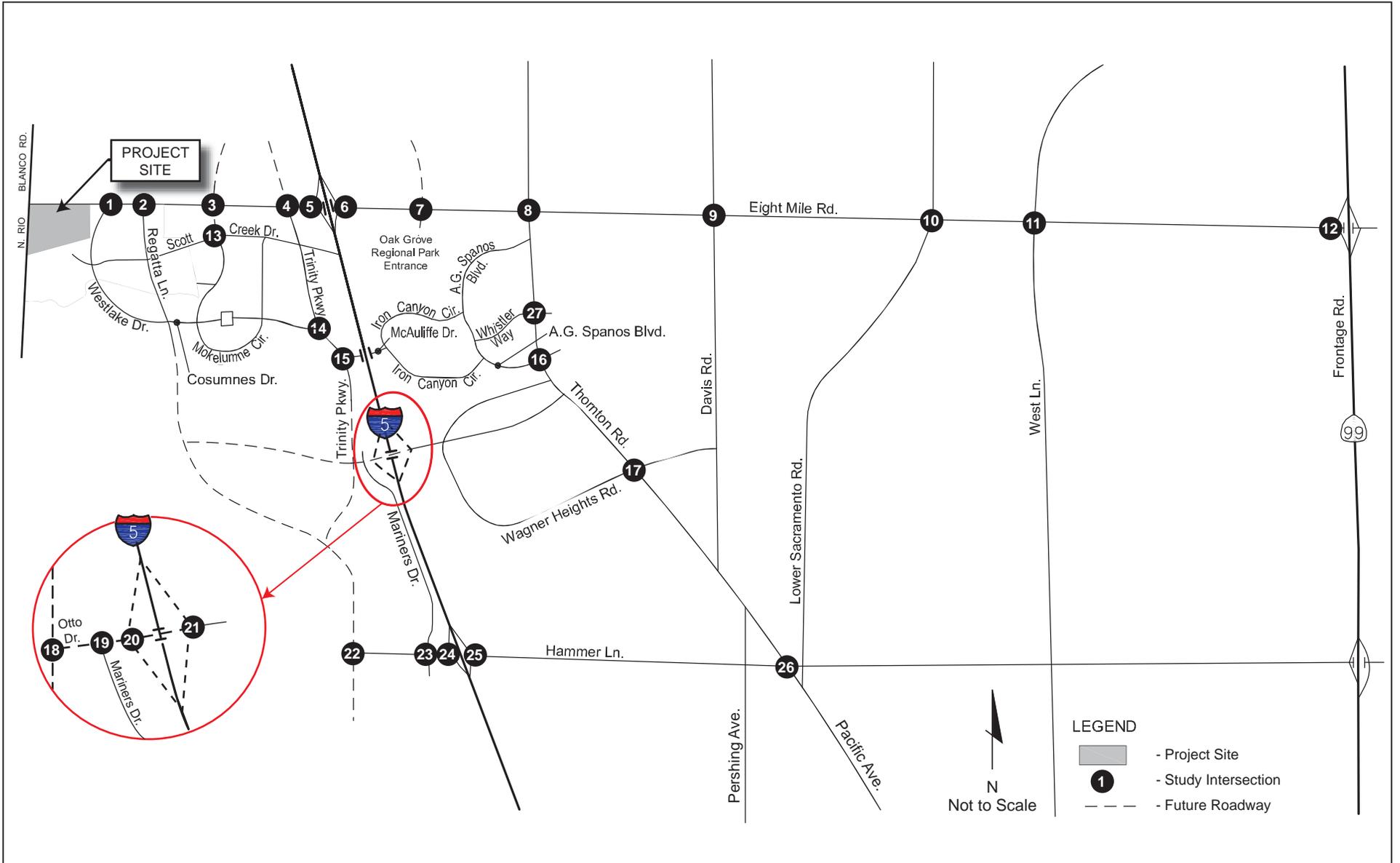
over Bear Creek is currently funded and is included under near-term conditions. As part of the future conditions under the *1990 General Plan* and the *2035 General Plan Update*, this roadway would be extended to March Lane.

Thornton Road is a two to four-lane, north-south major arterial that extends from north of Eight Mile Road to south of Hammer Lane, where it continues south as Pacific Avenue. Speed limits range from 35 to 45 miles per hour (mph) along the roadway. Sidewalks are provided along improved sections of Thornton Road throughout the study area.

Davis Road is a two-lane, north-south rural road throughout the study area. This roadway extends from Thornton Road through Eight Mile Road within the study area. Intermittent bicycle (Class III) and sidewalks are provided on this roadway in the study area. The speed limit is 45 mph.

Lower Sacramento Road is a two to four-lane, north-south rural road that extends from Eight Mile Road to Hammer Lane. No bicycle or pedestrian facilities are provided on this roadway in the study area. Speed limits range from 40 to 50 mph.

Additionally, *Scott Creek Drive*, *Cosumnes Drive*, *Mokelumne Circle*, *McAuliffe Drive*, *Whistler Way*, and *A.G. Spanos Boulevard* are all two-lane local roadways that provide residential access within the study area.



LSA

Figure 4.7.1

Bicycle And Pedestrian Facilities

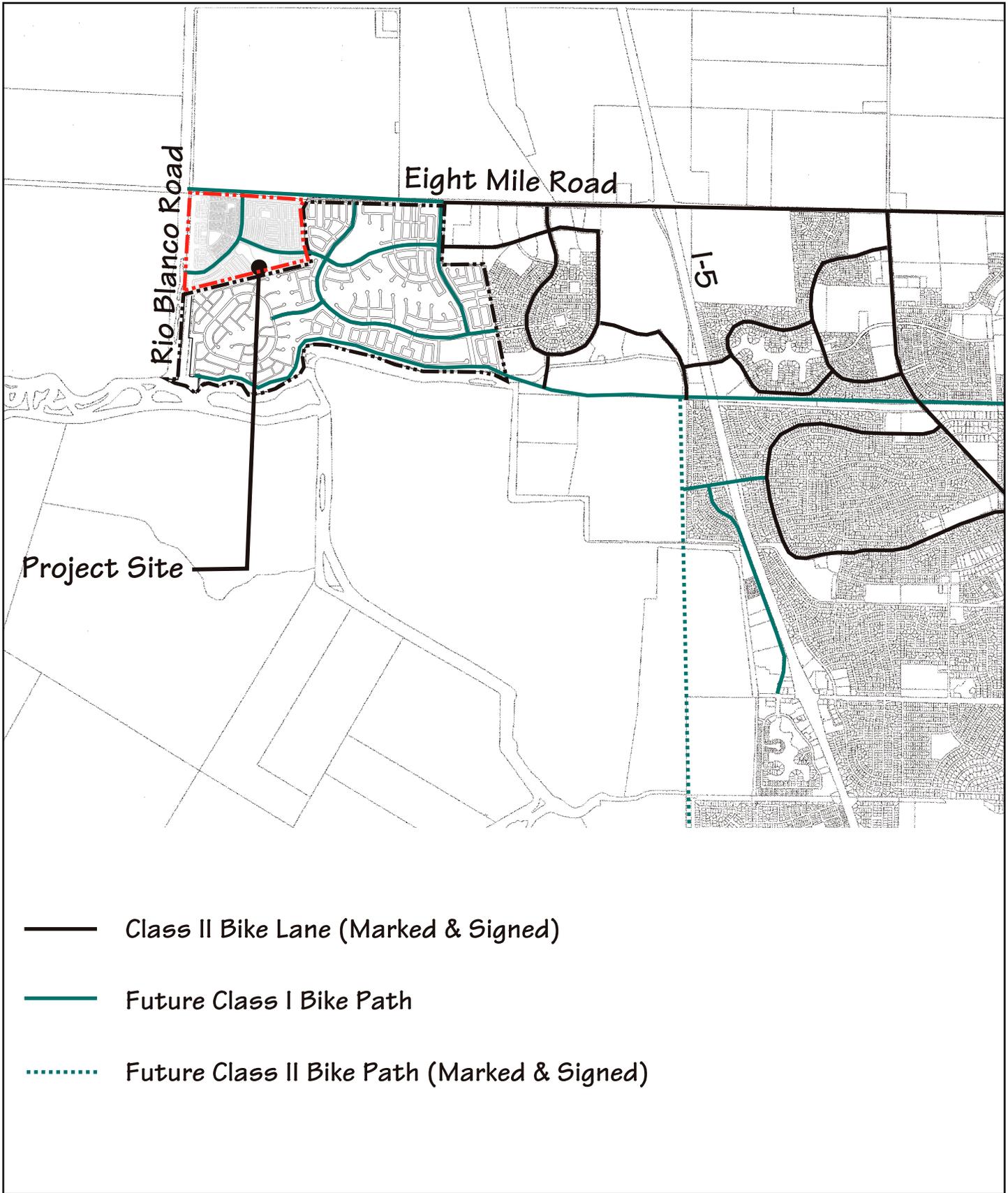
Within the study area, pedestrian facilities, i.e. sidewalks, are provided along improved portions of roadways including: Thornton Road, Trinity Parkway, Scott Creek Drive, Cosumnes Drive, Mokelumne Circle, McAuliffe Drive, Whistler Way, and A.G. Spanos Boulevard. Pedestrian crosswalks are provided at signalized intersections. Bicycle facilities are also provided on Thornton Road and Trinity Parkway, and are planned for most of the major roadways in the future. Figure 4.7.2 illustrates existing and future bicycle facilities within the study area. In addition, as part of the Westlake at Spanos Park West development, a Class I bicycle/pedestrian path is planned along the north side of Pixley/Disappointment Slough (*Westlake at Spanos Park West Conditions of Approval Letter to the Spanos Family Partnership c/o Jim Panagopoulos from James E. Glaser, Secretary, City of Stockton Planning Commission, November 2, 2004*).

Key Intersections, Roadway Segments, And Freeway Segments

Project impacts on the study area roadway facilities were determined by measuring the effect project traffic would have on operations of key intersections and roadway and freeway segments during the morning (7:00 to 9:00 a.m.) and evening (4:00 to 6:00 p.m.) peak traffic volume periods. The following locations were selected for evaluation:

Study Intersections

- Eight Mile Road/Westlake Drive
- Eight Mile Road/Regatta Lane
- Eight Mile Road/Mokelumne Circle
- Eight Mile Road/Trinity Parkway
- Eight Mile Road/I-5 Southbound Ramps
- Eight Mile Road/I-5 Northbound Ramps
- Eight Mile Road/Oak Grove Regional Park Entrance
- Eight Mile Road/Thornton Road
- Eight Mile Road/Davis Road
- Eight Mile Road/Lower Sacramento Road
- Eight Mile Road/West Lane
- Eight Mile Road/State Route (SR) 99 Frontage Road
- Mokelumne Circle/Scott Creek Drive
- Trinity Parkway/Cosumnes Drive
- Trinity Parkway/McAuliffe Drive



- Class II Bike Lane (Marked & Signed)
- Future Class I Bike Path
- Future Class II Bike Path (Marked & Signed)

LSA

Figure 4.7.2

Crystal Bay EIR

- Thornton Road/A.G. Spanos Boulevard (south intersection)
- Thornton Road/Wagner Heights Road
- Otto Drive/Trinity Parkway (future analysis only)
- Otto Drive/Mariners Drive (future analysis only)
- Otto Drive/I-5 Southbound Ramps (future analysis only)
- Otto Drive/I-5 Northbound Ramps (future analysis only)
- Hammer Lane/Trinity Parkway (future analysis only)
- Hammer Lane/Mariners Drive
- Hammer Lane/I-5 Southbound Ramps
- Hammer Lane/I-5 Northbound Ramps
- Hammer Lane/Thornton Road
- Whistler Way/Thornton Road

Roadway Segments

1. Eight Mile Road, I-5 Northbound Ramps to Oak Grove Park
2. Eight Mile Road, I-5 Southbound Ramps to Trinity Parkway
3. Eight Mile Road, Trinity Parkway to Mokelumne Circle

Freeway Segments

1. Northbound I-5, North of Eight Mile Road (Between Eight Mile Road and future Gateway Interchange)
2. Southbound I-5, North of Eight Mile Road (Between Future Gateway Interchange and Eight Mile Road)
3. Northbound I-5, Eight Mile Road to Hammer Lane (Between Hammer Lane and Eight Mile Road in Existing and Near-term, and between Otto Drive and Eight Mile Road in 2025 and 2035)
4. Southbound I-5, Eight Mile Road to Hammer Lane (Between Eight Mile Road and Hammer Lane in Existing and Near-term, and between Eight Mile Road and Otto Drive in 2025 and 2035)
5. Northbound I-5, between Hammer Lane and Otto Drive (2025 and 2035 scenarios only)
6. Southbound I-5, between Otto Drive and Hammer Lane (2025 and 2035 scenarios only)
7. Northbound I-5, South of Hammer Lane (Between Ben Holt Drive and Hammer Lane)
8. Southbound I-5, South of Hammer Lane (Between Hammer Lane and Ben Holt Drive)

Analysis Scenarios

The following scenarios were evaluated for this study:

- Existing - Represents existing (2005) conditions with volumes obtained from recent traffic counts.
- Existing plus Approved Projects - Near-term forecasted conditions considering trips from approved developments including the Park West Place development and near-term roadway improvements.
- Existing plus Approved Projects plus Project – Existing plus Approved Projects conditions plus project-related traffic.
- 1990 General Plan Buildout (Future 2025) Without Project – Future 2025 forecasted conditions taking into account the 1990 General Plan build-out of the City of Stockton and the surrounding jurisdictions.
- 1990 General Plan Buildout (Future 2025) With Project – Future 2025 forecasted conditions, as determined in the Future 2025 Without Project scenario, plus project-related traffic.
- 2035 General Plan Update Buildout (Future 2035) Without Project – Future 2035 forecasted conditions, taking into account the 2035 General Plan Update build-out of the City of Stockton and surrounding jurisdictions (Note: Year 2035 forecasts are based on the proposed General Plan land use and roadway network as of October 2005).
- 2035 General Plan Update Buildout (Future 2035) With Project – Future 2035 forecasted conditions, as determined in the Future 2035 Without Project scenario, plus project-related traffic.

Analysis Methods

Transportation engineers and planners use the term “level of service” (LOS) to qualitatively describe the operational status of intersections and the roadway network. LOS ranges from LOS A (indicating free-flow traffic conditions with little or no delay) to LOS F (representing oversaturated conditions in which traffic flows exceed design capacity, resulting in long queues and delays). The LOS calculation methods used in this study follow the City of Stockton Transportation Impact Analysis Guidelines (July 30, 2003). The methods presented in the Transportation Research Board’s 2000 Highway Capacity Manual (HCM) were used for service level calculations for signalized and unsignalized intersections and for evaluation of freeway segments.

Signalized Intersections: The operations of signalized intersections were calculated using the method described in the 2000 HCM. This method correlates LOS to the average control delay experienced at the intersection. Control delay includes initial deceleration, queue move-up time, time stopped, and final acceleration. The control delay is correlated to a service level as summarized in Table 4.7.A.

Operations of the closely-spaced Eight Mile Road/Trinity Parkway and Eight Mile Road/I-5 southbound and northbound ramp intersections, Hammer Lane/Trinity Parkway (future analysis only), Hammer Lane/ Mariners Drive and Hammer Lane/I-5 southbound and northbound ramp

intersections, and the future Otto Drive/Trinity Parkway, Otto Drive/Mariners Drive, and Otto Drive/I-5 southbound and northbound ramp intersections were evaluated using the Synchro 6.0 software program; all other intersection operations were analyzed using the Traffix software program as required by the City of Stockton Transportation Analysis Guidelines. Traffix software evaluates isolated intersection operations and does not account for the interaction between closely-spaced intersections; therefore, the freeway ramp terminal intersections were evaluated using Synchro 6.0 to better account for their interrelationship such as potential queue spillback (i.e., when the traffic from one intersection backs up into another).

Table 4.7.A: Signalized Intersection LOS Definitions Using Control Delay

LOS	DESCRIPTION	AVERAGE CONTROL DELAY (SECONDS PER VEHICLE)
A	Operations with very low delay occurring with favorable progression and/or short cycle length.	≤ 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	> 10.0 to 20.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	> 20.0 to 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, and/or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	> 35.0 to 55.0
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	> 55.0 to 80.0
F	Operations with delays unacceptable to most drivers occurring due to oversaturation, poor progression, and/or very long cycle lengths.	> 80.0

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

Unsignalized Intersections: For unsignalized (all-way stop-controlled and side-street stop-controlled) intersections, the 2000 HCM method for unsignalized intersections was used. With this method, operations are defined by the average control delay per vehicle (measured in seconds). The control delay incorporates delay associated with deceleration, acceleration, stopping, and moving up in the queue. Table 4.7.B summarizes the relationship between delay and LOS for unsignalized intersections. At all-way stop-controlled intersections, an intersection average delay is calculated. At side-street stop-controlled intersections, the delay is calculated for each stop-controlled movement, for the left-turn movement from the major street, and for the intersection as a whole. Both the average intersection delay and the highest movement/approach delay are reported for side-street stop-controlled intersections.

Table 4.7.B: Unsignalized Intersection LOS Definitions

LOS	DESCRIPTION	AVERAGE CONTROL DELAY (SECONDS PER VEHICLE)
A	Little or no delays.	< 10.0
B	Short traffic delays.	10.1 to 15.0
C	Average traffic delays.	15.1 to 25.0
D	Long traffic delays.	25.1 to 35.0
E	Very long traffic delays.	35.1 to 50.0
F	Extreme traffic delays with intersection capacity exceeded.	> 50.0

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

Traffic Signal Warrant Analysis: The peak hour volume and peak hour delay signal warrants from the Federal Highway Administration’s Manual of Uniform Traffic Control Devices (MUTCD, 2003) was investigated for the unsignalized intersections to assess whether traffic signals should be considered.¹³

Roadway Segments: Roadway segment service levels were calculated by comparing the daily roadway volumes, facility type, and number of lanes to the LOS thresholds developed as part of the Background Report for the City of Stockton 2035 General Plan Update (Fehr & Peers, 2004), as provided in Table 4.7.C.

Table 4.7.C: Daily Roadway Segment LOS Thresholds

FACILITY TYPE	NUMBER OF LANES	LOS A	LOS B	LOS C	LOS D	LOS E
Arterial	2	8,400	9,300	11,800	14,700	17,300
Arterial	3	13,500	14,950	18,900	23,600	27,750
Arterial	4	18,600	20,600	26,000	32,500	38,200
Arterial	6	28,800	32,000	40,300	50,400	59,300
Arterial	8	38,100	42,300	53,300	66,600	78,400
Collector	2	6,400	7,100	9,000	11,300	13,200
Collector	4	17,600	19,600	24,700	30,900	36,300

¹³ This analysis examines a sub-set of the standard traffic signal warrants recommended in Federal Highway Administration’s MUTCD and associated State guidelines. This analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated based on field-measured traffic data and thorough study of traffic and roadway conditions by an experienced engineer. Furthermore, the decision to install a signal should not be based solely upon warrants, since the installation of signals can lead to certain types of collisions. The City of Stockton should undertake regular monitoring of actual traffic conditions and accident data and perform a timely re-evaluation of the full set of warrants in order to prioritize and program intersections for signalization.

Source: Background Report for the City of Stockton General Plan Update, Fehr & Peers, 2004.

Freeway Mainline Segments: For the freeway mainline segments, LOS was calculated using the 2000 HCM method. This method considers peak hour traffic volumes, free-flow speeds, percentage of heavy vehicles and the number of travel lanes. These factors are used to determine vehicle density, measured in passenger cars per mile per lane. Table 4.7.D summarizes the relationship between vehicle density and LOS for mainline freeway segments.

Table 4.7.D: Freeway Mainline LOS Definitions Using Density Ranges

LOS	DESCRIPTION	DENSITY RANGE (PASSENGER CARS PER MILE PER LANE)
A	Free-flow operations where vehicles are relatively unimpeded in their ability to maneuver within the traffic stream. Effects of incidents are easily absorbed.	0 to 11
B	Relative free-flow operations where vehicles maneuvers within the traffic stream are slightly restricted. Effects of minor incidents are easily absorbed.	> 11 to 18
C	Travel is still at relative free-flow speeds, although freedom to maneuver within the traffic stream is noticeably restricted. Minor incidents may be absorbed, but local deterioration in service will be substantial. Queues begin to form behind significant blockages.	> 18 to 26
D	Speeds begin to decline slightly with increasing flows and densities begin to increase more quickly. Freedom to maneuver is noticeably limited. Minor incidents can be expected to create queuing as the traffic stream has little space to absorb disruptions.	> 26 to 35
E	Operation at capacity. Vehicles are closely spaced with little room to maneuver. Any disruption in the traffic stream can establish a disruption wave that propagates throughout the upstream traffic flow. Any incident can be expected to produce a serious disruption in traffic flow and extensive queuing.	> 35 to 45
F	Breakdown in vehicle flow.	> 45

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

Existing Traffic Volumes

Intersection turning movement counts were conducted in Spring 2005 at the study intersections during the AM (7:00 to 9:00 a.m.) and PM (4:00 to 6:00 p.m.) peak traffic periods. The counts were conducted on clear days with area schools in normal session (see Appendix). For each count period, the single hour with the highest traffic volume was identified as the peak hour. The peak-hour volumes are represented on Figure 4.7.3. The peak hour data is used for the intersection service level calculations. The existing lane configurations and traffic control devices (traffic signals or stop signs) at each study intersection are shown on Figure 4.7.4.

Existing traffic volumes on I-5, both north and south of the Eight Mile Road interchange and south of the Hammer Lane interchange, were determined from several months of hourly traffic data provided by Caltrans for the Interstate 5 North Interchange Improvement Program Final Traffic Forecast and Traffic Operations Study (Rajappan & Meyer Consulting Engineers 2006). The traffic counts indicated that the predominant travel direction is southbound I-5 during the AM peak hour and northbound I-5 during the PM peak hour.

Existing Intersection Operations

Existing intersection operations are described in terms of LOS and the results of the peak-hour traffic signal warrant analysis for unsignalized intersections.

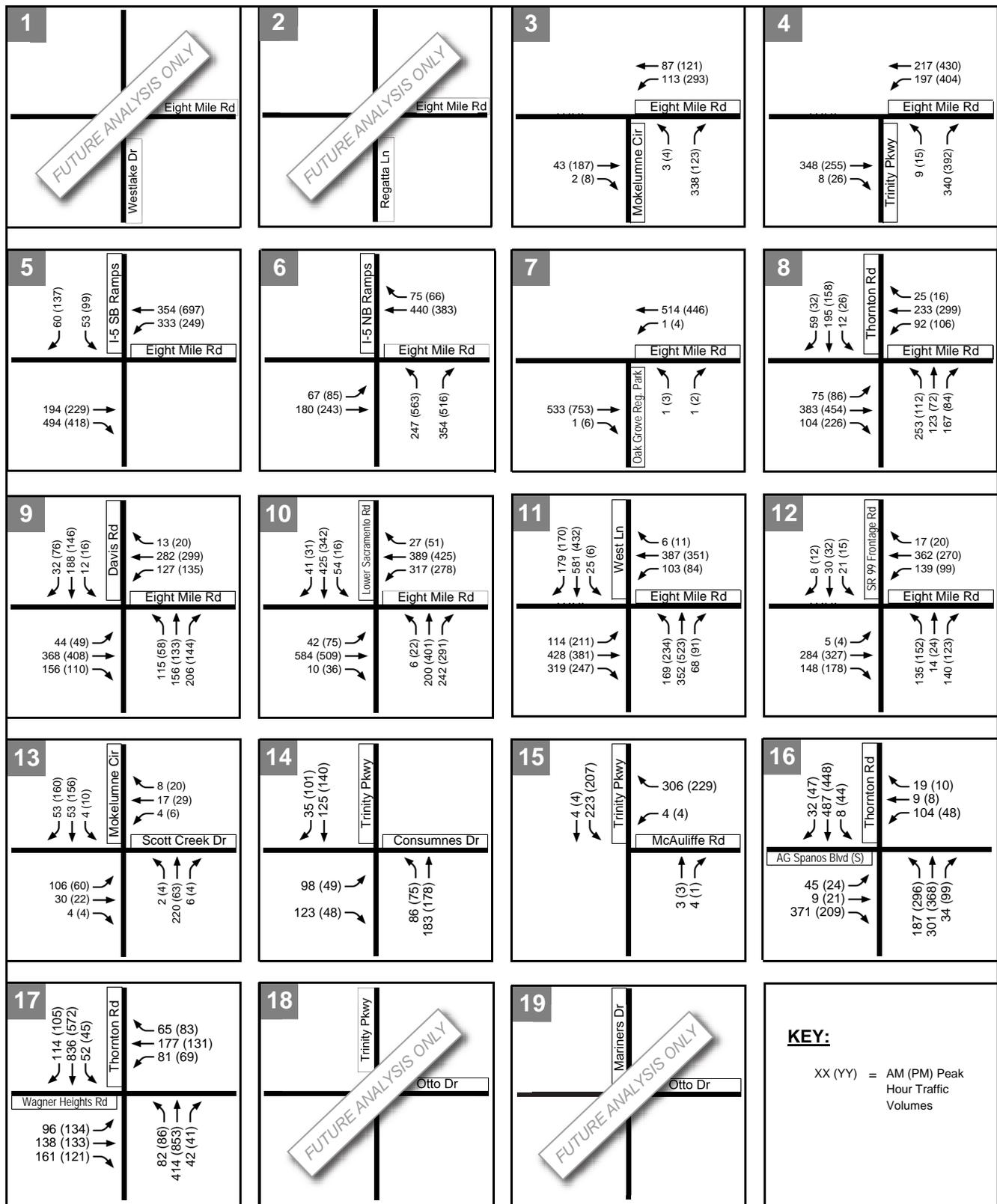
Intersection Levels of Service: Existing operations were evaluated for the weekday AM and PM peak hours at the study intersections, as summarized in Table 4.7.E. Detailed LOS worksheets are provided in the Appendix. All intersections currently operate at acceptable service levels (LOS D or better) during both the AM and PM peak hours except:

- Eight Mile Road/Lower Sacramento Road – LOS E (AM peak hour)

Vehicle queue spillback was also evaluated for the study intersections. Vehicle queues are contained within the provided storage space at most intersections. However, vehicle queue spillback does occur at some intersections, typically at locations operating at LOS D or worse:

- Eight Mile Road/Lower Sacramento Road – westbound left-turn (AM and PM peak hours)
- Eight Mile Road/West Lane – northbound and eastbound left-turns (PM peak hour)
- Hammer Lane/Thornton Road – northbound left-turn (PM peak hour) and southbound left-turn (AM and PM peak hour)

Vehicle queue worksheets are also provided in the Appendix.



L S A

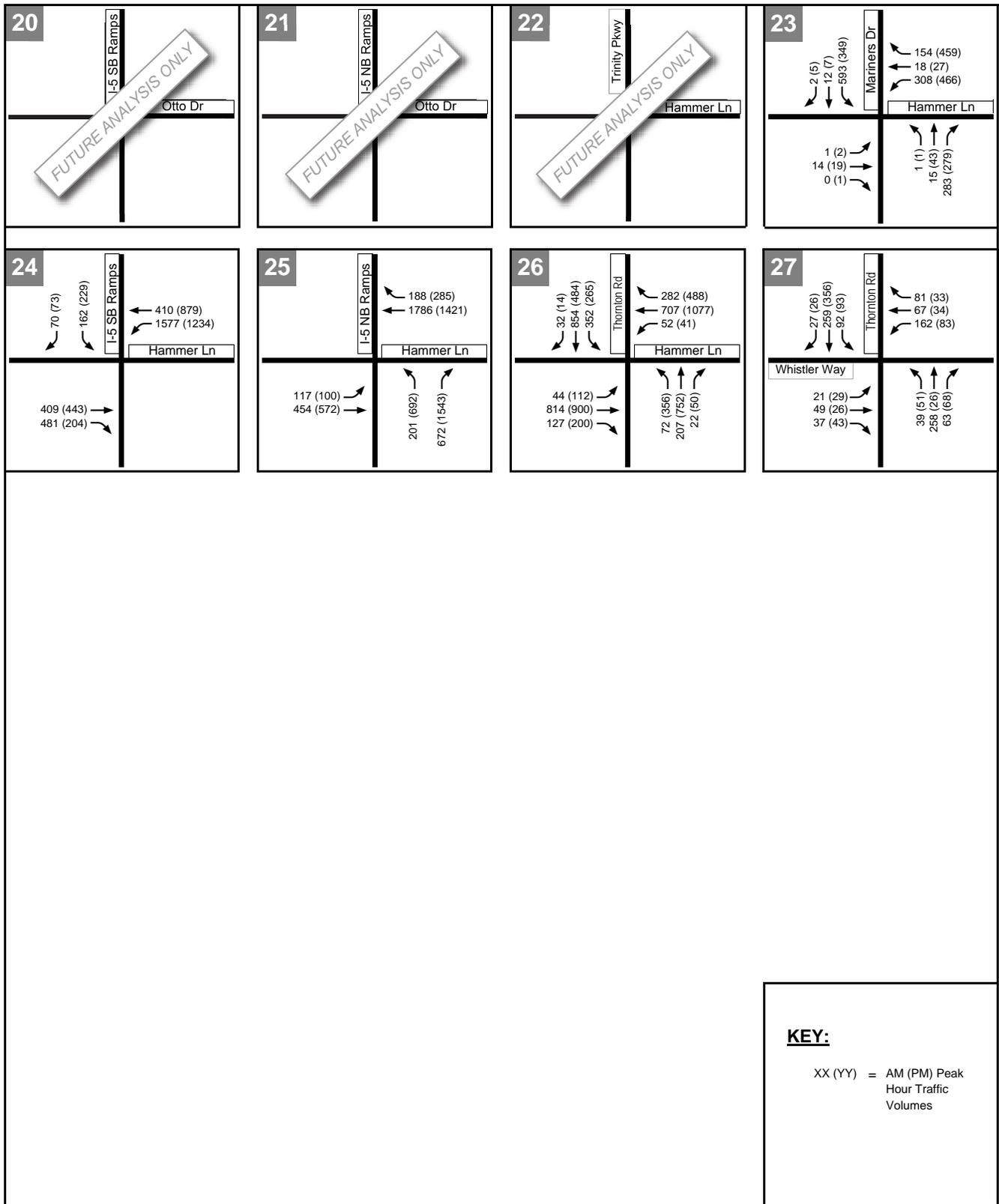
Figure 4.7.3.A

Crystal Bay EIR

Existing 2005 Peak Hour Traffic Volumes

SOURCE: FEHR & PEERS TRANSPORTATION CONSULTANTS

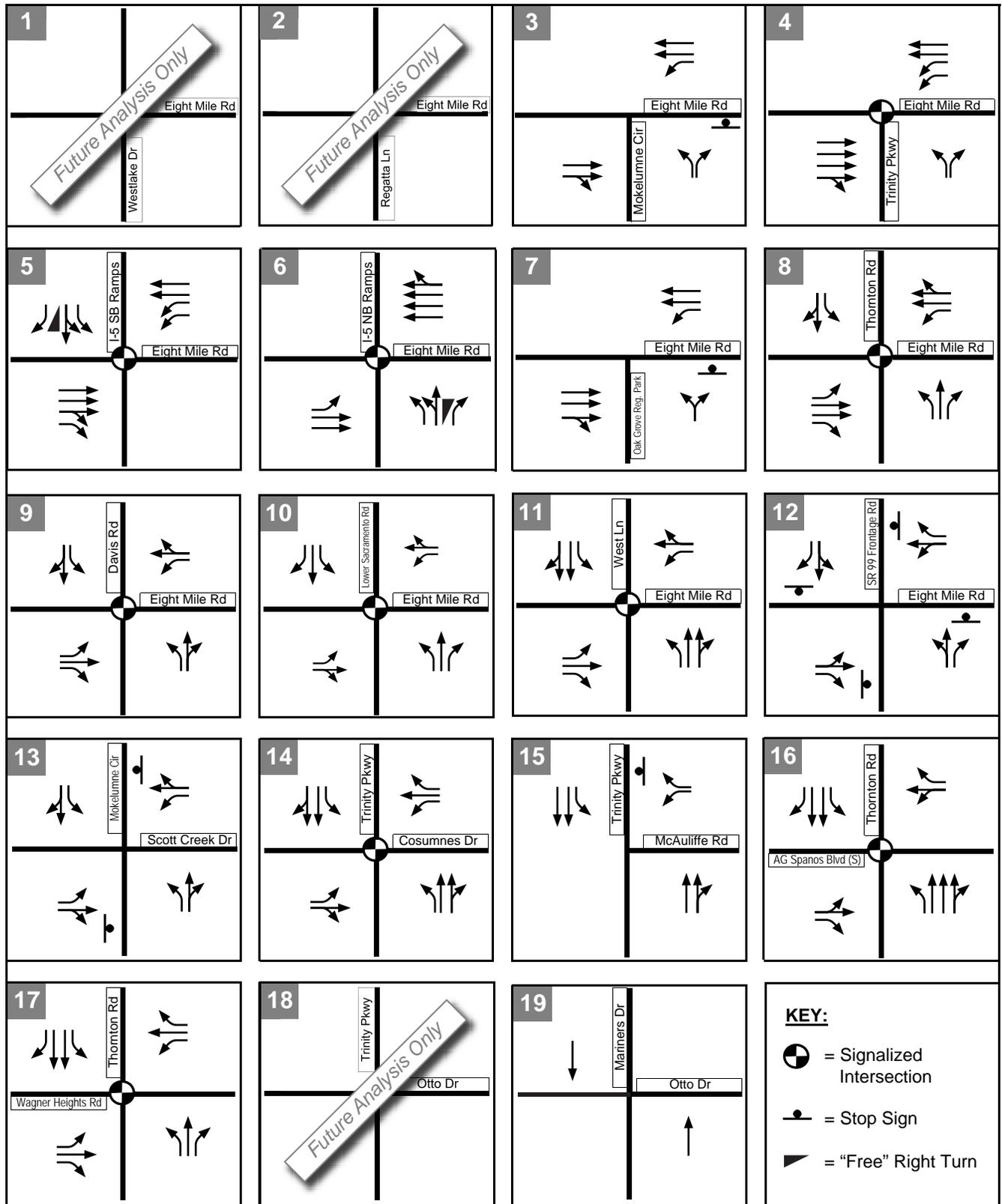
October 2007



L S A

Figure 4.7.3.B

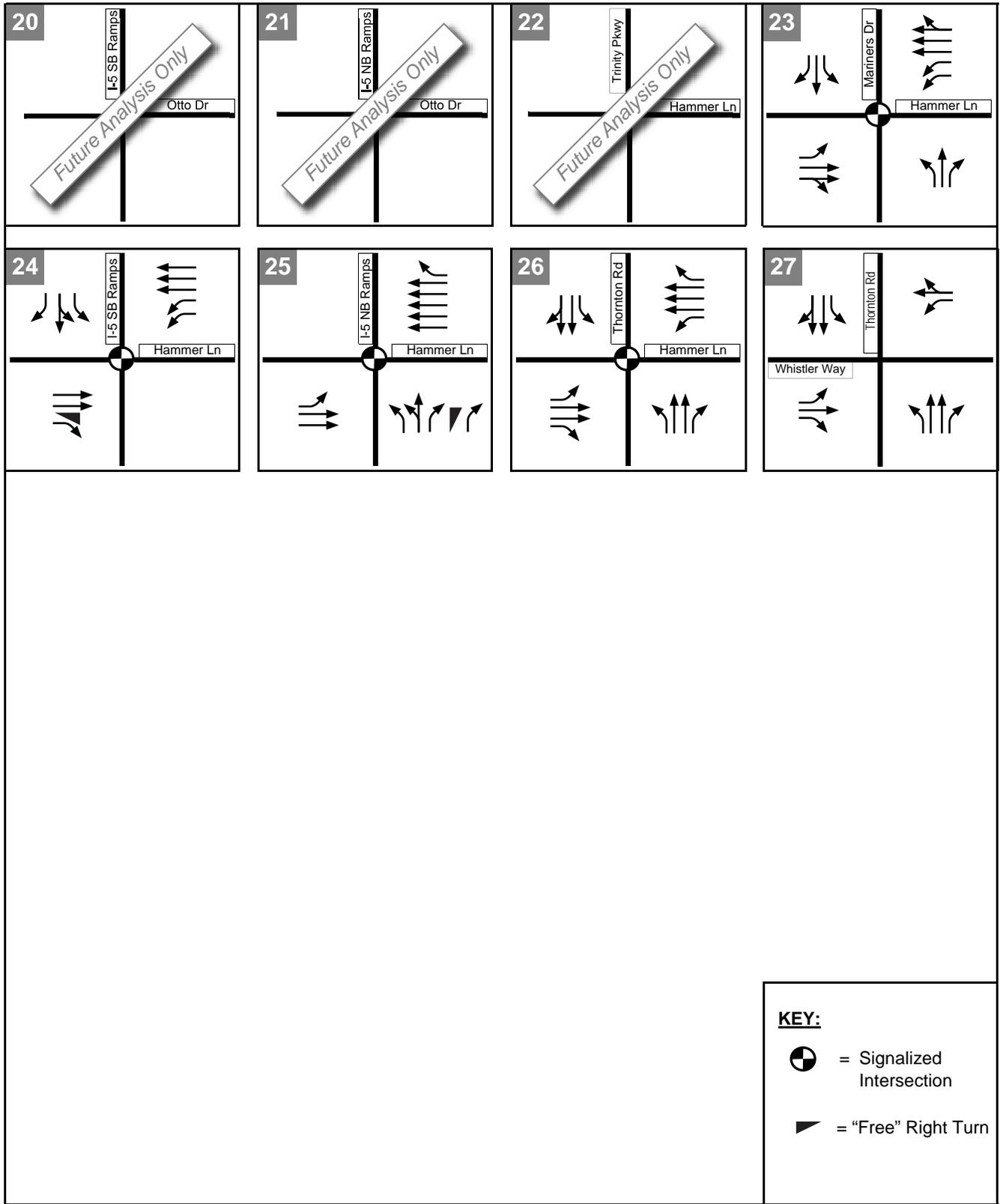
Crystal Bay EIR



L S A

Figure 4.7.4.A

Crystal Bay EIR



LSA

Figure 4.7.4.B

Crystal Bay EIR

Table 4.7.E: Existing (2005) Peak Hour Intersection Levels of Service

INTERSECTION		CONTROL ¹	PEAK HOUR	DELAY ^{2,3}	LOS
1.	Eight Mile Road/Westlake Drive	N/A	N/A	-- --	-- --
2.	Eight Mile Road/Regatta Lane	N/A	N/A	-- --	-- --
3.	Eight Mile Road/Mokelumne Circle	SSSC	AM PM	8 (11) 5 (11)	A (B) A (B)
4.	Eight Mile Road/Trinity Parkway	Signal	AM PM	16 15	B B
5.	Eight Mile Road/I-5 Southbound Ramps ⁴	Signal	AM PM	11 13	B B
6.	Eight Mile Road/I-5 Northbound Ramps ⁴	Signal	AM PM	14 21	B C
7.	Eight Mile Road/Oak Grove Regional Park Entrance	SSSC	AM PM	0 (14) 0 (18)	A (B) A (C)
8.	Eight Mile Road/Thornton Road	Signal	AM PM	32 28	C C
9.	Eight Mile Road/Davis Road ⁵	Signal	AM PM	33 33	C C
10.	Eight Mile Road/Lower Sacramento Road	Signal	AM PM	65 50	E D
11.	Eight Mile Road/West Lane	Signal	AM PM	37 38	D D
12.	Eight Mile Road/SR 99 West Frontage Road	AWSC	AM PM	28 18	D C
13.	Mokelumne Circle/Scott Creek Drive	SSSC	AM PM	4 (13) 3 (13)	A (B) A (B)
14.	Trinity Parkway/Cosumnes Drive	Signal	AM PM	18 15	B B
15.	Trinity Parkway/McAuliffe Drive	SSSC	AM PM	9 (11) 8 (9)	A (B) A (A)
16.	Thornton Road/A.G. Spanos Boulevard (south intersection)	Signal	AM PM	19 19	B B
17.	Thornton Road/Wagner Heights Road	Signal	AM PM	29 32	C C
18.	Otto Drive/Trinity Parkway	N/A	N/A	-- --	-- --

INTERSECTION		CONTROL ¹	PEAK HOUR	DELAY ^{2,3}	LOS
19.	Otto Drive/Mariners Drive	N/A	N/A	-- --	-- --
20.	Otto Drive/I-5 Southbound Ramps	N/A	N/A	-- --	-- --
21.	Otto Drive/I-5 Northbound Ramps	N/A	N/A	-- --	-- --
22.	Hammer Lane/Trinity Parkway	N/A	N/A	-- --	-- --
23.	Hammer Lane/Mariners Drive	Signal	AM PM	16 12	B B
24.	Hammer Lane/I-5 Southbound Ramps	Signal	AM PM	21 18	C B
25.	Hammer Lane/I-5 Northbound Ramps	Signal	AM PM	14 28	B C
26.	Thornton Road/Hammer Lane	Signal	AM PM	32 41	C D
27.	Thornton Road/Whistler Way	Signal	AM PM	31 26	C C

Source: Fehr & Peers, 2007.

Notes: N/A = Not Applicable. Intersection analysis under future conditions only. Bold: Indicates unacceptable intersection operations.

¹Signal = Signalized intersection; AWSC = All-way stop-controlled intersection; SSSC = Side-street stop-controlled intersection.

²Signalized intersection average control delay (in seconds per vehicle) and LOS calculated using the Highway Capacity Manual (Transportation Research Board, 2000) method.

³All-way stop controlled and side-street stop-controlled intersection LOS is based on average delay per vehicle (in seconds) according to the Highway Capacity Manual (Transportation Research Board, 2000). For the side-street stop controlled intersections, the worse case stop-controlled movement delays are presented in parenthesis.

Traffic Signal Warrant Analysis: The peak hour volume and delay signal warrants were investigated for the unsignalized study intersections. Table 4.7.F shows the results. Peak hour signal warrants are not satisfied at any of the unsignalized study intersections. Signal warrant worksheets are provided in the Appendix.

Table 4.7.F: Existing (2005) Peak Hour Signal Warrant Analysis Results¹

INTERSECTION		STATUS
3.	Eight Mile Road/Mokelumne Circle	Not Met
7.	Eight Mile Road/Oak Grove Regional Park Entrance	Not Met

INTERSECTION		STATUS
12.	Eight Mile Road/SR 99 West Frontage Road	Not Met
13.	Mokelumne Circle/Scott Creek Drive	Not Met
15.	Trinity Parkway/McAuliffe Drive	Not Met

Source: Fehr & Peers, 2007.

Note: ¹Based on methods presented in Federal Highway Administration's MUTCD, 2003.

²A traffic signal was recently installed at this intersection.

Existing Roadway And Freeway Segment Operations

The roadway segments were analyzed based on the daily volumes, facility type, and number of lanes shown in Table 4.7.G, and LOS thresholds shown in Table 4.7.C. All three study roadway segments operate at LOS D or better.

Table 4.7.G: Existing (2005) Roadway Segment Levels of Service

ROADWAY SEGMENT	FACILITY TYPE	NUMBER OF LANES	DAILY VOLUME ¹	LOS
Eight Mile Road, I-5 Northbound Ramps to Oak Grove Park	Arterial	2	11,900	D
Eight Mile Road, I-5 Southbound Ramps to Trinity Parkway	Arterial	8	14,800	A
Eight Mile Road, Trinity Parkway to Mokelumne Circle	Arterial	2	7,200	A

Source: Fehr & Peers, 2007.

Notes: **Bold:** Indicates unacceptable roadway segment operations.

¹ Daily volume calculated from PM peak hour link volume. PM peak hour link volume is approximately 10 percent of the daily volume.

I-5 freeway mainline segments north and south of Eight Mile Road and south of Hammer Lane were analyzed based on the peak hour volumes shown in Table 4.7.H and the LOS criteria shown in Table 4.7.D. The analysis results indicate that I-5 in the study area operates at LOS C or better during both peak hours. Detailed calculations are provided in the Appendix.

Table 4.7.H: Existing (2005) I-5 Freeway Segment Levels of Service

SEGMENT	DIRECTION OF TRAVEL	AM PEAK HOUR			PM PEAK HOUR		
		VOLUME ¹	DENSITY ²	LOS ³	VOLUME ¹	DENSITY ²	LOS ³
North of Eight Mile Road	Northbound	1,600	9	A	1,900	10	A

SEGMENT	DIRECTION OF TRAVEL	AM PEAK HOUR			PM PEAK HOUR		
		VOLUME ¹	DENSITY ²	LOS ³	VOLUME ¹	DENSITY ²	LOS ³
North of Eight Mile Road	Southbound	2,500	14	B	2,900	16	B
Eight Mile Road to Hammer Lane	Northbound	1,930	11	A	2,780	15	B
Eight Mile Road to Hammer Lane	Southbound	3,140	17	B	3,250	18	B
South of Hammer Lane	Northbound	2,600	14	B	4,490	25	C
South of Hammer Lane	Southbound	4,610	26	C	4,160	23	C

Source: Fehr & Peers, 2007.

Notes: ¹Traffic volumes provided by Caltrans for the North Stockton I-5 Interchanges PSR.

² Density measured in passenger cars per mile per lane.

³Mainline segment LOS based on vehicle density, according to the Highway Capacity Manual (Transportation Research Board, 2000).

Accident Analysis: Collisions that occurred at the City controlled intersections within the study area between January 2001 and December 2006 were reviewed, based on data provided by City of Stockton staff. A summary is provided in the Appendix. Caltrans provided data from January 2003 to December 2005 for their facilities, i.e. freeway mainline (from SR 12 to Charter Way), and interchange ramp terminals (Eight Mile Road and Hammer Lane), in the vicinity of the Project site.

A total of 550 incidents were reported during this time period at the City intersections. Incidents are classified by causes and types, and the number of injuries and fatalities is shown for every intersection in the study area. Intersections where incidents did not occur during this time period are not shown in the table.

Of the 550 incidents, 145 (29%) were due to driving at an unsafe speed, 86 (17%) were due to violation of a vehicle's right-of-way by another vehicle, the cause of 85 (17%) incidents was unknown, and the cause of 75 (15%) were related to violation traffic signals or posted signs. The major incident types include: 173 (35%) broadsides, 170 (34%) rear-ends, 69 (14%) sideswipes and 45 (9%) vehicles hitting a fixed object. A total of 267 injuries and 1 fatality was reported for this period.

Of the existing City study intersections, the majority of incidents occurred at four intersections. The Hammer Lane/Kelley Drive intersection experienced a total of 145 incidents, amounting for 29% of the total reported incidents at study intersections. The Hammer Lane/Lower Sacramento Road intersection experienced 108 incidents (22% of the total). The Hammer Lane/Meadow Drive/Don Avenue intersection experienced 101 incidents (20% of the total). Finally, the Hammer Lane/Thornton Road intersection experienced 94 incidents (19% of the total).

At Caltrans facilities in the study area, 583 accidents were reported on the northbound mainline and 540 accidents were reported on the southbound mainline between State Route 12 and Charter Way. At the ramps (Eight Mile Road and Hammer Lane), a total of 60 accidents were reported. Thirteen

fatalities occurred on the mainline, while no fatalities occurred at the ramps. As shown in the Appendix, I-5 in both directions has a lower overall accident rate than the statewide average for similar facilities. However, the fatality rate for the southbound direction does exceed the statewide average, as do several of the ramps including the southbound off-ramp at Hammer Lane, and both ramps at Eight Mile Road. The accident data for the Eight Mile Road interchange was collected prior to completion of interchange improvements.

4.7.2 Regulatory Context And Impact Significance Criteria

Policies of the City of Stockton General Plan (adopted and current update), California Environmental Quality Act (CEQA) guidelines, and the City of Stockton Transportation Impact Analysis Guidelines were used to develop significant project impact criteria.

City Of Stockton 1990 General Plan Policy Document

The City of Stockton General Plan Policy Document (adopted January 22, 1990) was used to develop evaluation criteria for determining project impacts. Key statements from Section 3, Transportation, used for reference are summarized below.

Streets And Highways Goal 1.2 - The Street System Shall Provide At Least Two (2) Independent Access Routes For All Major Developed Areas.

Streets And Highways Goal 1.3 - Significant Trip Generating Land Uses Should Be Served By Roadways Adequate To Provide Vehicular Access With A Minimum Of Delay.

Streets And Highways Goal 1.6 - Traffic Signals On Arterial Streets Shall Be Synchronized To The Extent Possible To Facilitate The Flow Of Traffic And To Minimize Stops Or Delays.

Streets And Highways Goal 1.8 - Seek To Improve Freeway Interchanges Along Both Route 99 And Interstate 5 To Current Design Standards As Required By The Traffic Demands Of New Development.

Streets And Highways Goal 1.9 - For Traffic Operating Conditions Use "Level-Of-Service" (LOS) Of "D" Or Better On A PM Peak Hour Basis As The Planning Objective For The Evaluation Of New Development, Mitigation Measures, Impact Fees And Public Works Capital Improvement Programs.

Streets And Highways Goal 2.3 - Off-Street Parking Shall Be Required For All Land Uses In Order To Reduce Congestion, Improve Overall Operation And Land Use Compatibility.

Streets And Highways Goal 4.2 - Specific Plans For Future Roadways On The Fringe Of The City Shall Be Prepared In Coordination With The County And/Or Caltrans.

Public Transportation Goal 1.2 - Larger new developments along arterial and major collector streets shall provide transit-related public improvements (i.e., bus pullouts, bus shelters) to encourage bus use.

Public Transportation Goal 1.5 - Strongly Encourage That New Development Projects Incorporate Transit- Related Design Features As Outlined Below.

- A through roadway should connect adjacent developments so as to permit transit circulation between developments.
- In major employment/commercial areas, parking should be prohibited on collector and arterial streets to provide access to bus stops in these areas.
- Shielded openings in subdivision sound walls should be provided to facilitate more direct pedestrian access to transit stops.
- In major employment/commercial areas, the Transit District should be encouraged to post route and schedule information.
- Commercial and industrial developments should have easy access to major arterials and transit stops.
- Park and ride sites should be strategically located to maximize utilization.
- Park and ride lots should be designed to accommodate not only motorists but also other users of public transit and van or carpooling.

Non-Motorized Transportation Goal 1.1 - Pedestrian Travel Shall Be Encouraged As A Viable Mode Of Movement Throughout The City By Providing Safe And Convenient Pedestrian Facilities, Particularly In Commercial Areas And Residential Neighborhoods.

Non-Motorized Transportation Goal 1.2 - Within Large Retail And Office Centers, Provisions Shall Be Made For Convenient And Safe Pedestrian Movement Through The Large Parking Areas Which Surround These Commercial Centers.

Non-Motorized Transportation Goal 1.3 - Recreational bikeways shall be developed and maintained on separate rights-of-way (i.e., Calaveras River path, East Bay Municipal Utility District easement paths).

Non-Motorized Transportation Goal 1.4 - Right-of-way requirements for bike usage shall be considered in the planning of new arterial and collector streets and in street improvement projects.

Non-Motorized Transportation Goal 1.5 - Safe and secure bicycle parking facilities should be provided at major activity centers such as public facilities, employment sites and shopping and office centers.

City Of Stockton 2035 General Plan Update

The City of Stockton is currently updating their General Plan LOS polices which could change the City's LOS threshold on several roadways. Based on the 2035 General Plan Update, the City would require that LOS D or better be maintained for both daily and peak hour conditions, with the following exceptions proposed due to physical constraints that limit the improvements that can be constructed:

- Eight Mile Road, Trinity Parkway to I-5 – LOS E
- Hammer Lane, I-5 to Kelly Drive – LOS E
- Hammer Lane, West Lane to SR 99 – LOS E

California Environmental Quality Act (CEQA) Guidelines

Based on the California Environmental Quality Act (CEQA) guidelines, a project would cause a significant impact if it would:

- Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system
- Exceed, either individually or cumulatively, a LOS standard established by the county congestion management agency for designated roads or highways
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersection) or incompatible uses (e.g., farm equipment)
- Result in inadequate emergency access
- Result in inadequate parking capacity
- Conflict with adopted policies, plans or programs supporting alternative transportation

California Department Of Transportation Guidelines

The California Department of Transportation is responsible for the maintenance and operation of state routes and highways. In Stockton, Caltrans' facilities include I-5 and SR 99. Caltrans maintains a volume monitoring program and reviews local agencies' planning documents (such as this EIR) to assist in its forecasting of future volumes and congestion points. Guide for the Preparation of Traffic Impacts Studies (January 2001) published by Caltrans is intended to provide a consistent basis for evaluating traffic impacts to State facilities. The City recognizes that "Caltrans endeavors to maintain a target LOS at the transition between LOS 'C' and LOS 'D'... on State highway facilities; however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS" (Guide for the Preparation of Traffic Impact Studies, January 2001). In addition, Caltrans states that for existing State highway facilities operating at less than the target LOS, the existing LOS should be maintained.

Impact Significance Criteria

The following criteria establish the thresholds for determining whether a transportation impact is significant. The project would have a significant transportation impact if it:

- Causes a roadway facility (intersection or segment) projected to operate acceptably (i.e., LOS D or better) without the project to operate unacceptably (i.e., LOS E or worse)
- Causes a roadway facility (intersection or segment) projected to operate at LOS E without the project to operate at LOS F with the project
- Causes an increase in average delay by more than five seconds to an intersection projected to operate unacceptably (i.e., LOS E or worse) without the project¹⁴
- Increases the total traffic volume by five percent or more on a roadway or freeway segment projected to operate unacceptably (i.e., LOS E or worse) without the project¹⁵
- Generates transit ridership, that when added to existing or future ridership, exceeds available or planned system capacity
- Hinders or eliminates an existing designated bikeway, or if it interferes with implementation of a proposed bikeway
- Results in unsafe conditions for bicyclists, including unsafe bicycle/pedestrian or bicycle/motor vehicle conflicts
- Results in unsafe conditions for pedestrians, including unsafe increase in pedestrian/bicycle or pedestrian/motor vehicle conflicts
- Causes normal operations of automobile and truck access to adversely impact the adjacent streets or sidewalks
- Provides inadequate sight distance at a project driveway
- Fails to comply with the Transportation Policy of the City of Stockton General Plan Policy Document, Adopted January 22, 1990, as listed previously

As discussed above, the following corridors may be subject to different LOS standards with the 2035 *General Plan Update*, due to physical constraints that limit the improvements that can be constructed:

- Eight Mile Road, Trinity Parkway to I-5 – LOS E
- Hammer Lane, I-5 to Kelley Drive – LOS E
- Hammer Lane, West Lane to SR 99 – LOS E

Therefore, two sets of criteria are addressed for these locations.

4.7.3 Impacts And Mitigation Measures

This section discusses the potential significant transportation impacts associated with the project and describes measures to mitigate those impacts. The project traffic forecasting method (trip generation, distribution, and assignment) and operational analysis results are presented.

¹⁴ City of Stockton, *Transportation Impact Analysis Guidelines* (July 30, 2003).

¹⁵ Westlake at Spanos Park West Environmental Impact Report (EIR1-04).

Project Trip Generation

Project vehicle trip generation was estimated using appropriate (single family detached and apartment) trip generation equations from ITE’s Trip Generation (7th Edition), as shown in Table 4.7.I. Vehicle trip generation was derived by incorporating the number of dwelling units into the appropriate equations. Trip generation for the proposed development is shown in Table 4.7.J. The single family homes and apartments at Crystal Bay are estimated to generate 10,930 daily vehicle trips with 885 (211 inbound and 674 outbound) occurring during the AM peak hour and 1,062 (673 inbound and 389 outbound) occurring during the PM peak hour.

Table 4.7.I: Trip Generation Equations

PROPOSED LAND USE	ITE CODE	DAILY	AM PEAK HOUR	PM PEAK HOUR
Single-Family	210	$\text{Ln}(T) = 0.92 \text{Ln}(D) + 2.71$	$T = 0.70(D) + 9.43$	$\text{Ln}(T) = 0.901 \text{Ln}(D) + 0.53$
Apartment	220	$T = 6.01(D) + 150.35$	$T = 0.49(D) + 3.73$	$T = 0.55(D) + 17.65$

Source: Trip Generation (7th Edition), Institute of Transportation Engineers.

Notes: T= Number of trips, LN= Natural Logarithm, D= Dwelling units

Table 4.7.J: Crystal Bay Trip Generation

PROJECT COMPONENT	SIZE ¹	DAILY TRIPS	AM PEAK HOUR TRIPS			PM PEAK HOUR TRIPS		
			INBOUND	OUTBOUND	TOTAL	INBOUND	OUTBOUND	TOTAL
Single Family Homes	971 du	8,420	172	517	689	522	307	829
Apartments	392 du	2,510	39	157	196	151	82	233
Total	1,363 du	10,930	211	674	885	673	389	1,062

Notes: du = dwelling units

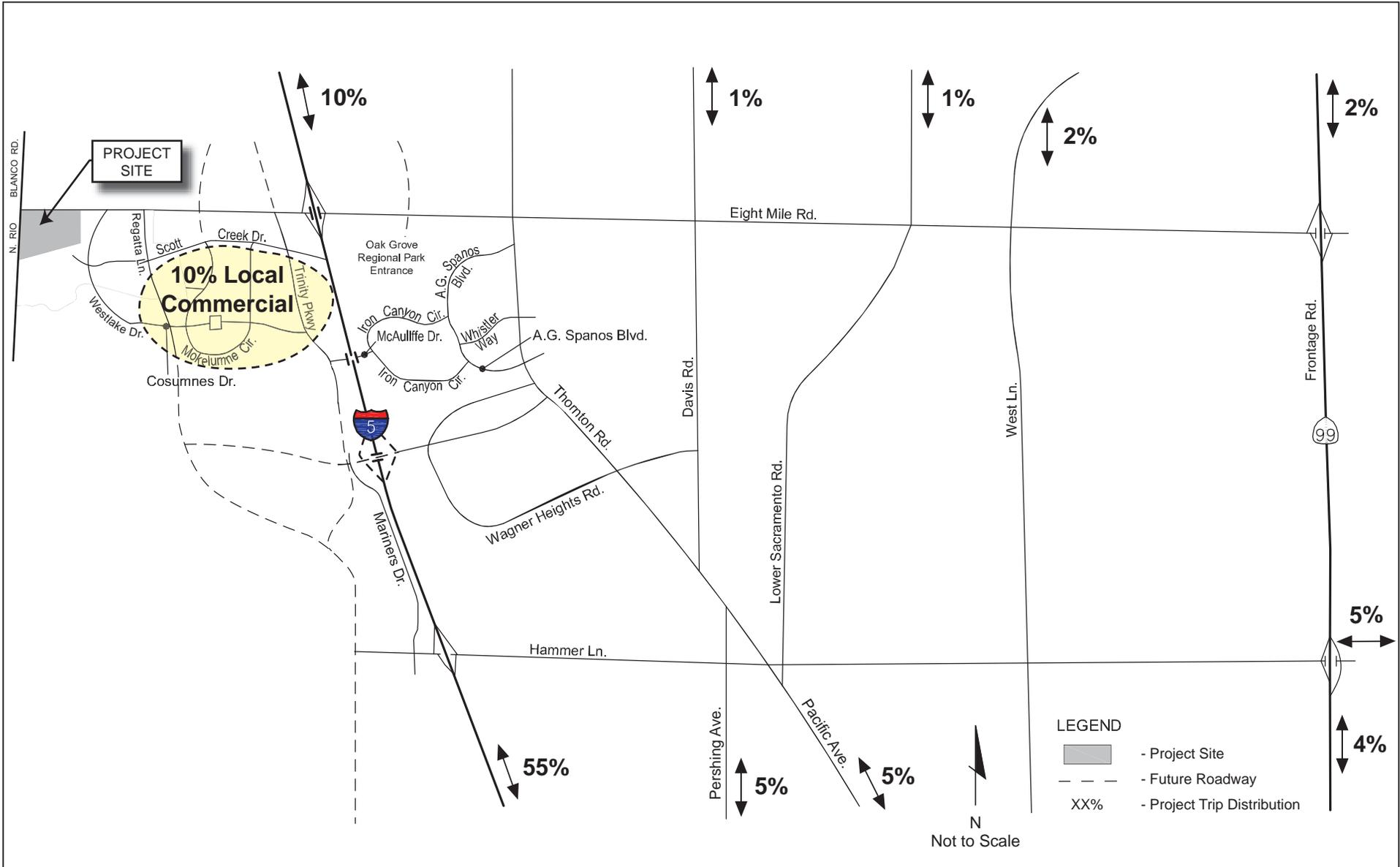
Source: Fehr & Peers, 2007.

Project Trip Distribution And Assignment

The City of Stockton Traffic Models (Existing Plus Approved Projects, 1990 General Plan, and 2035 General Plan Update) and existing traffic volumes at the study intersections were used to estimate general trip distribution patterns for Crystal Bay. Trip distribution percentages are shown on Figures 4.7.5 (Existing Plus Approved Projects and Future 2025) and 4.7-6 (Future 2035).

Trips generated by the proposed project were assigned to the roadway system based on the approach and departure directions shown on Figures 4.7.5 and 4.7.6. The general distribution for the Existing

plus Approved Projects and Future 2025 conditions is the same; however, the trip assignment for each scenario was adjusted to reflect changes in travel patterns caused by roadway improvements. The trip assignment for each scenario accounts for the route choice drivers can make traveling to and from the project site due to new roadways and/or increased capacity on roadways. AM and PM peak hour project trip assignment is shown on Figures 4.7.7, 4.7.8, and 4.7.9 for the Existing plus Approved Projects, Future 2025, and Future 2035 conditions, respectively.



LSA

Figure 4.7.5

Crystal Bay EIR
Existing Plus Approved Projects and Future 2025
Project Trip Distribution

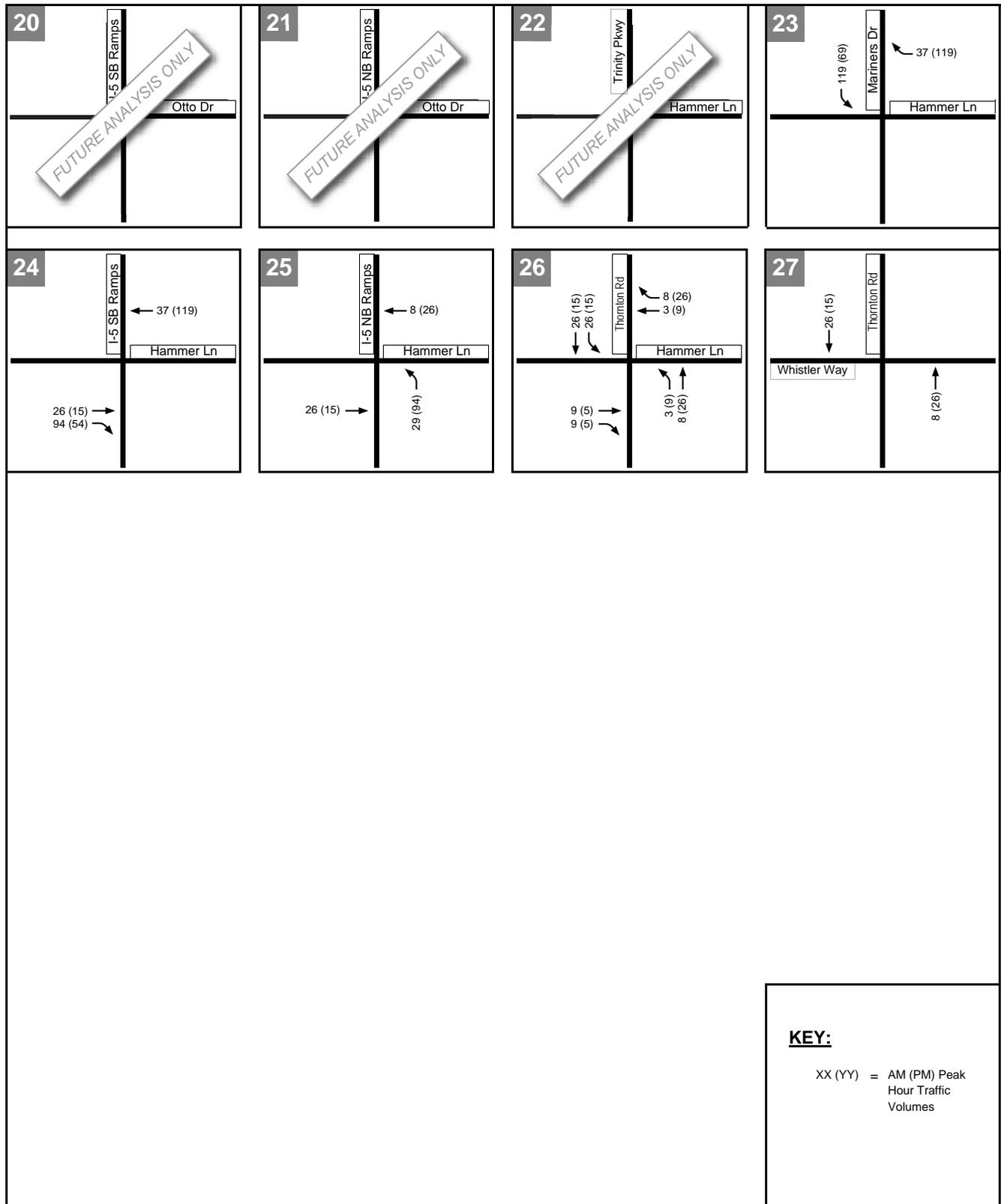


L S A

Figure 4.7.7.A

Crystal Bay EIR

Existing Plus Approved Projects
Peak Hour Project Trip Assignment



L S A

Figure 4.7.7.B

Crystal Bay EIR
Existing Plus Approved Projects
Peak Hour Project Trip Assignment

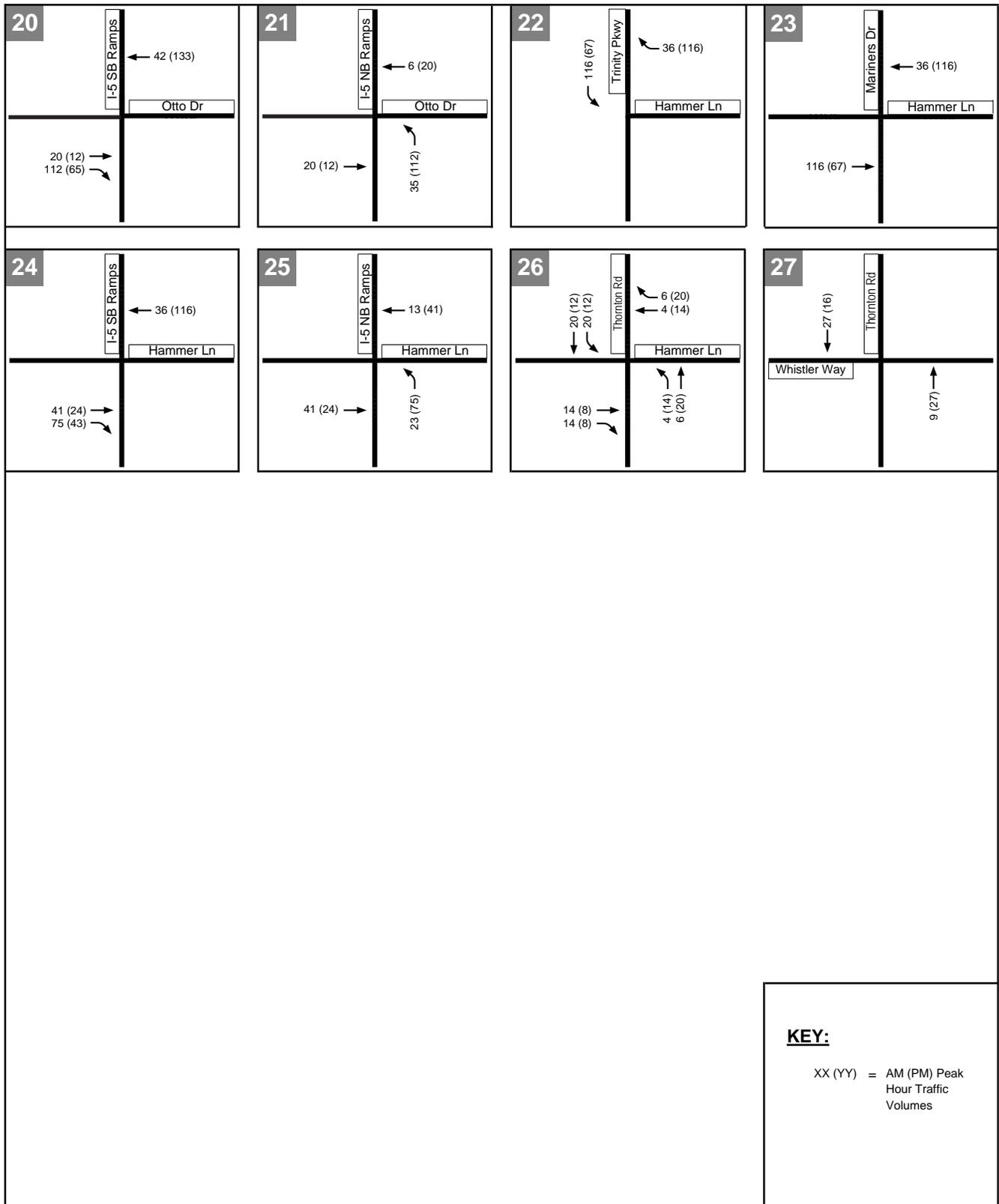


LSA

Figure 4.7.8.A

Crystal Bay EIR
Future 2025

Peak Hour Project Trip Assignment

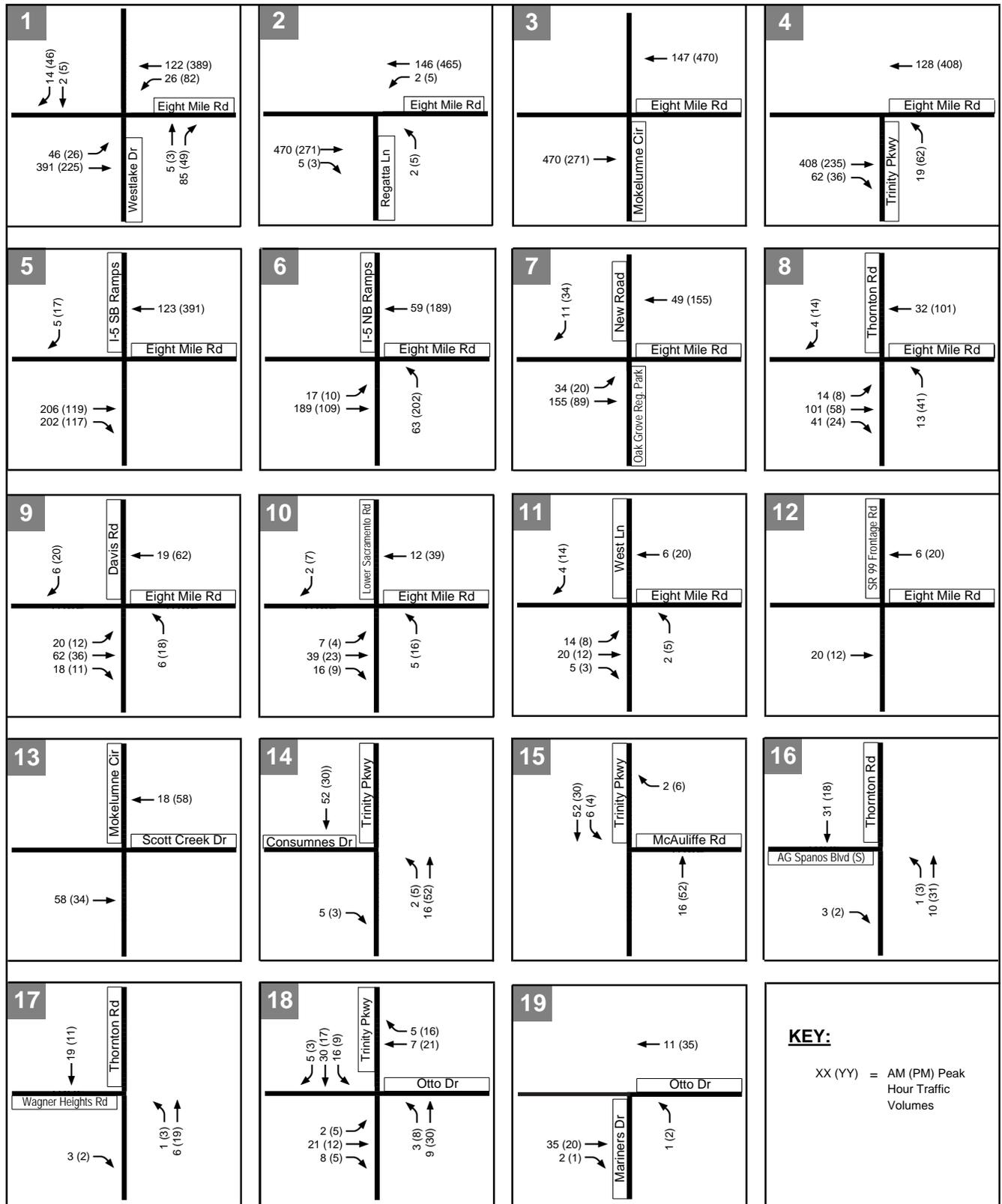


LSA

Figure 4.7.8.B

Crystal Bay EIR
Future 2025

Peak Hour Project Trip Assignment

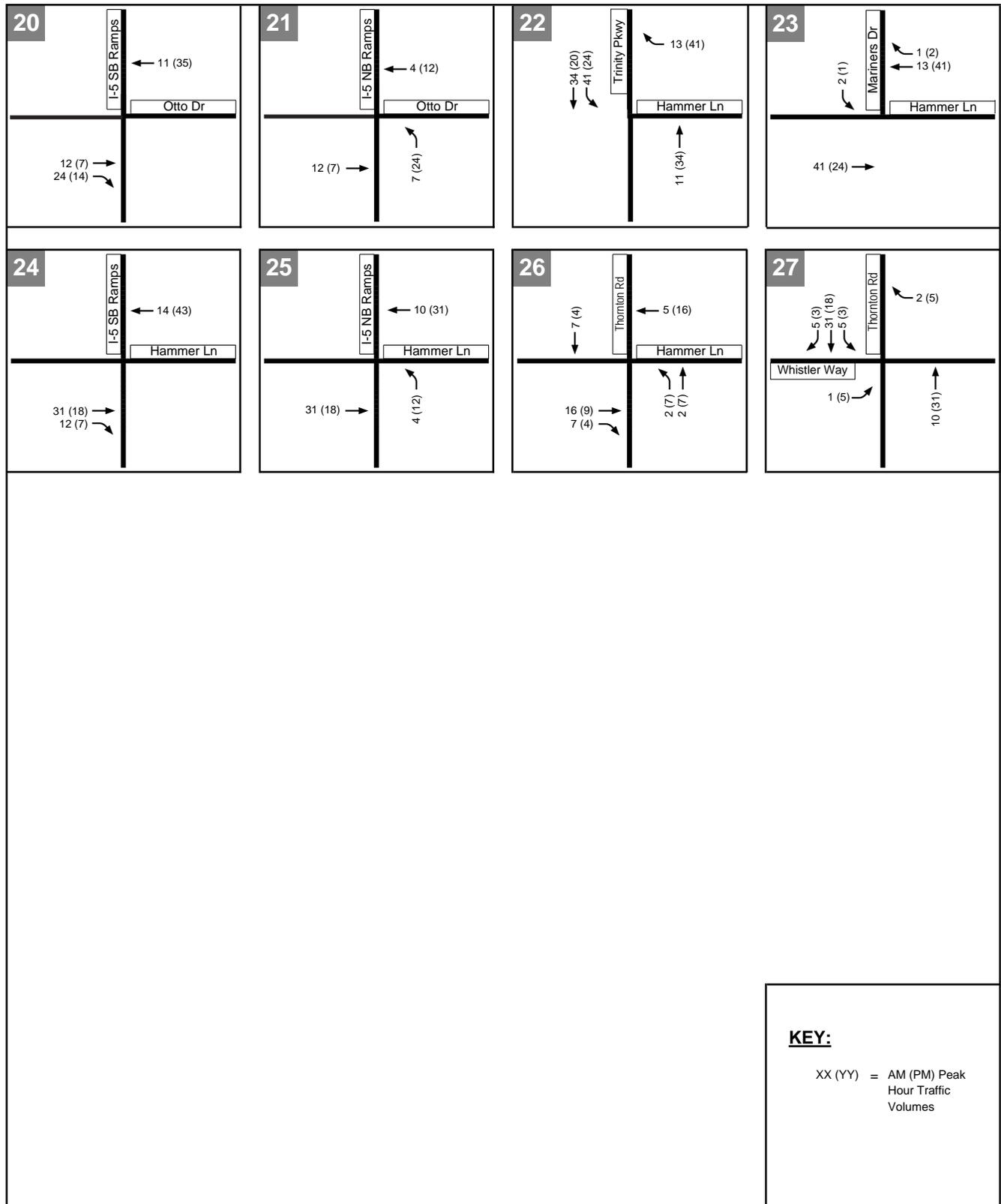


LSA

Figure 4.7.9.A

Crystal Bay EIR
Future 2035

Peak Hour Project Trip Assignment



LSA

Figure 4.7.9.B

Crystal Bay EIR
 Future 2035

Peak Hour Project Trip Assignment

Existing Plus Approved Projects Conditions Analysis

First methods used to develop traffic projections for Existing plus Approved without the project are discussed in this section. Results of the intersection, roadway segment, and freeway segment operational analyses are also discussed.

Existing Plus Approved Projects Forecasts: This scenario includes existing traffic volumes, traffic from approved developments, and traffic from build-out of parcels that could be further developed without future entitlements from the city. The land use data in the City of Stockton's travel demand forecasting model was modified to incorporate approved development in the vicinity of the project including Westlake at Spanos Park West and the already constructed portions of the Park West Place project.

The roadway network was modified to include all of the planned and funded improvements including those listed below. The resulting lane configurations are shown on Figure 4.7.10. The improvements include:

- The Trinity Parkway extension over Bear Creek, connecting Trinity Parkway to Otto Drive
- Eight Mile Road widening from two lanes to four lanes east of I-5 to Davis Road
- Signalization of the following intersections:
 - Eight Mile Road/Mokelumne Circle
 - Trinity Parkway/McAuliffe Drive (under construction)
 - Eight Mile Road/SR 99 Frontage Road (west intersection)
- Improvements at the following intersections as required in the Westlake at Spanos Park West Conditions of Approval (Letter to the Spanos Family Partnership c/o Jim Panagopoulos from James E. Glaser, Secretary, City of Stockton Planning Commission, November 2, 2004) and outlined in Westlake at Spanos Park West Condition of Approval 16 – Intersection Improvement Phasing Analysis Eight Mile Road/Lower Sacramento (Memorandum to Gregg Meissner, City of Stockton from Jane Bierstedt and Kathrin Tellez, Fehr & Peers, April 28, 2005) and Westlake at Spanos Park West Conditions of Approval Intersection Improvement Phasing Analysis (Task 3) (Memorandum to Gregg Meissner, City of Stockton from Matt Henry and Kathrin Tellez, Fehr & Peers, January 13, 2005).
- Eight Mile Road/Trinity Parkway: Dual northbound right-turn lanes and dual westbound left-turn lanes.
- Eight Mile Road/Lower Sacramento Road: A left-turn lane, through lane, and shared through/right-turn lane eastbound and westbound on Eight Mile Road. Improvements on Lower Sacramento Road include a left-turn lane, through lane, and a right-turn lane in both directions.
- Signalization of the Mokelumne Circle/Scott Creek Drive intersection.

Designs are currently being prepared for the intersection improvements as part of the Westlake at Spanos Park West Conditions of Approval.

The input assumptions (land use and roadway system changes) and the model results were approved by City of Stockton staff. Traffic forecasts from the Existing Plus Approved Projects model were adjusted using the delta method which considers changes between the existing counts and the 2003 base model traffic volumes. Figure 4.7.11 shows the resulting Existing plus Approved Projects peak hour traffic volumes at the study intersections.

Intersection Analysis: Intersection level of service calculations were conducted to evaluate intersection operations with the volumes on Figure 4.7.11 and the lane configurations on Figure 4.7.10. The results are presented in Table 4.7.K. With the Existing Plus Approved Projects traffic volumes and funded improvements, the following intersections are projected to operate at unacceptable level (i.e., LOS D or worse) in the Existing plus Approved Projects scenario:

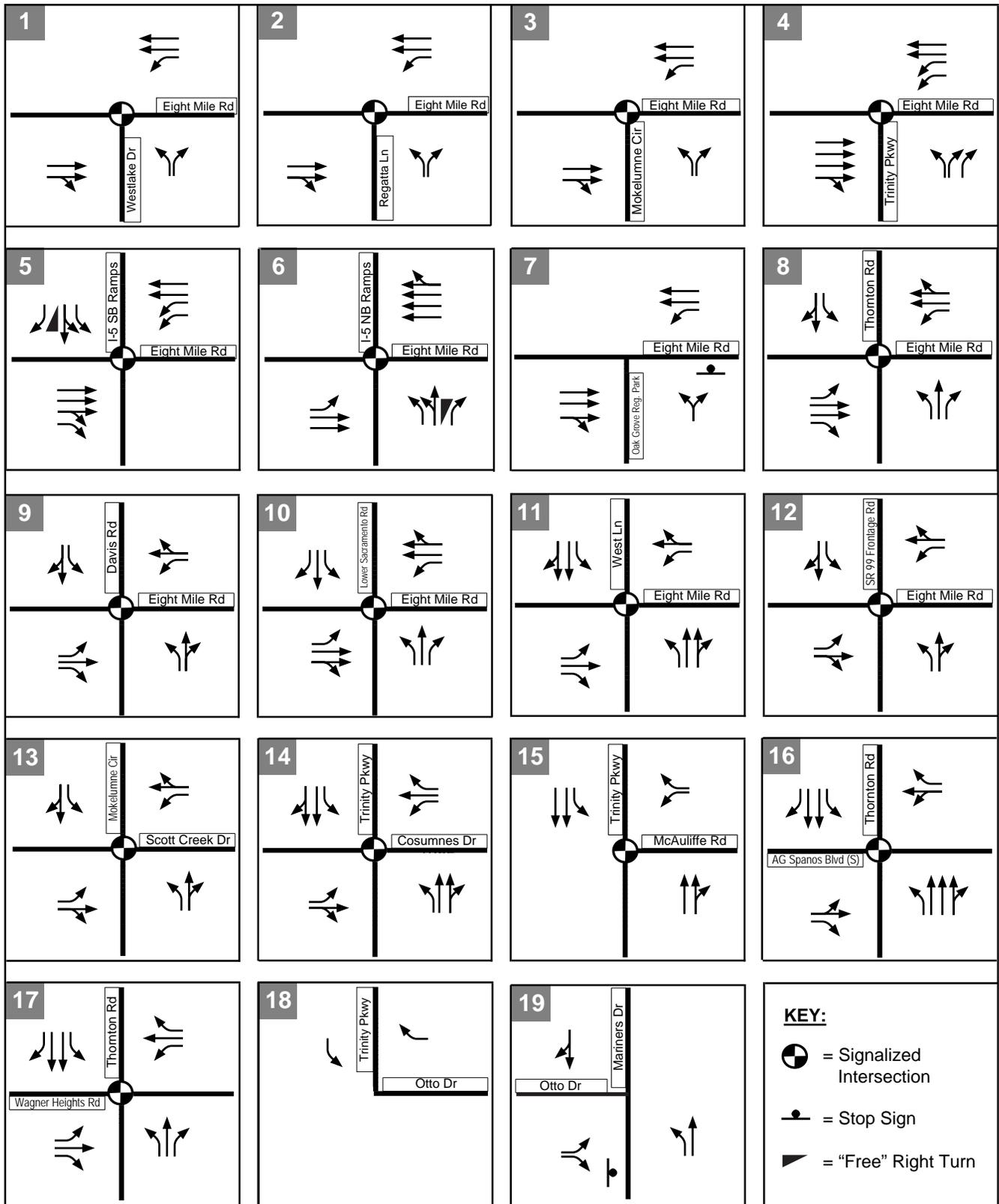
- Eight Mile Road/I-5 Northbound Ramps – LOS F (PM peak hour)
- Eight Mile Road/Oak Grove Regional Park Entrance – LOS E (PM peak hour)
- Eight Mile Road/Davis Road – LOS E (AM peak hour) and LOS F (PM peak hour)
- Eight Mile Road/Lower Sacramento Road – LOS E (AM and PM peak hours)
- Eight Mile Road/West Lane – LOS E (AM peak hour) and LOS F (PM peak hour)
- Eight Mile Road/SR 99 West Frontage Road – LOS F (AM and PM peak hours)
- Hammer Lane/Mariners Drive – LOS F (AM and PM peak hours)

Vehicle queuing was also evaluated for the study intersections. Vehicle queues are expected to exceed the available storage length at the following intersections for the movement indicated during one or both peak hours:

- Eight Mile Road/Trinity Parkway – northbound right-turn, westbound left-turn
- Eight Mile Road/I-5 Northbound Ramps – northbound left-turn, eastbound left-turn
- Eight Mile Road/Davis Road – westbound left-turn, eastbound through
- Eight Mile Road/Lower Sacramento Road – southbound left-turn, westbound left-turn
- Eight Mile Road/West Lane – northbound left-turn, eastbound left-turn
- Eight Mile Road/SR 99 West Frontage Road – eastbound and westbound left-turns
- Trinity Parkway/Cosumnes Drive – northbound left-turn
- Thornton Road/AG Spanos Boulevard – northbound left-turn
- Hammer Lane/Mariners Drive – westbound left-turn, southbound through
- Hammer Lane/I-5 Southbound Ramps – westbound left-turn
- Hammer Lane/I-5 Northbound Ramps – northbound right-turn
- Hammer Lane/Thornton Drive – northbound left-turn

Detailed queuing reports are provided in the Appendix.

Traffic Signal Warrant Analysis: Peak hour traffic signal warrants were reviewed for the unsignalized study intersections under the Existing plus Approved Projects scenario, as presented in Table 4.7.L. This review indicates that neither the peak hour volume or delay signal warrant would be satisfied at the Eight Mile Road/Oak Grove Park intersection. The peak hour volume traffic signal warrant would be satisfied at the Otto Drive/Mariners Drive intersection, although this intersection is projected to operate acceptably in the Existing plus Approved Projects condition.



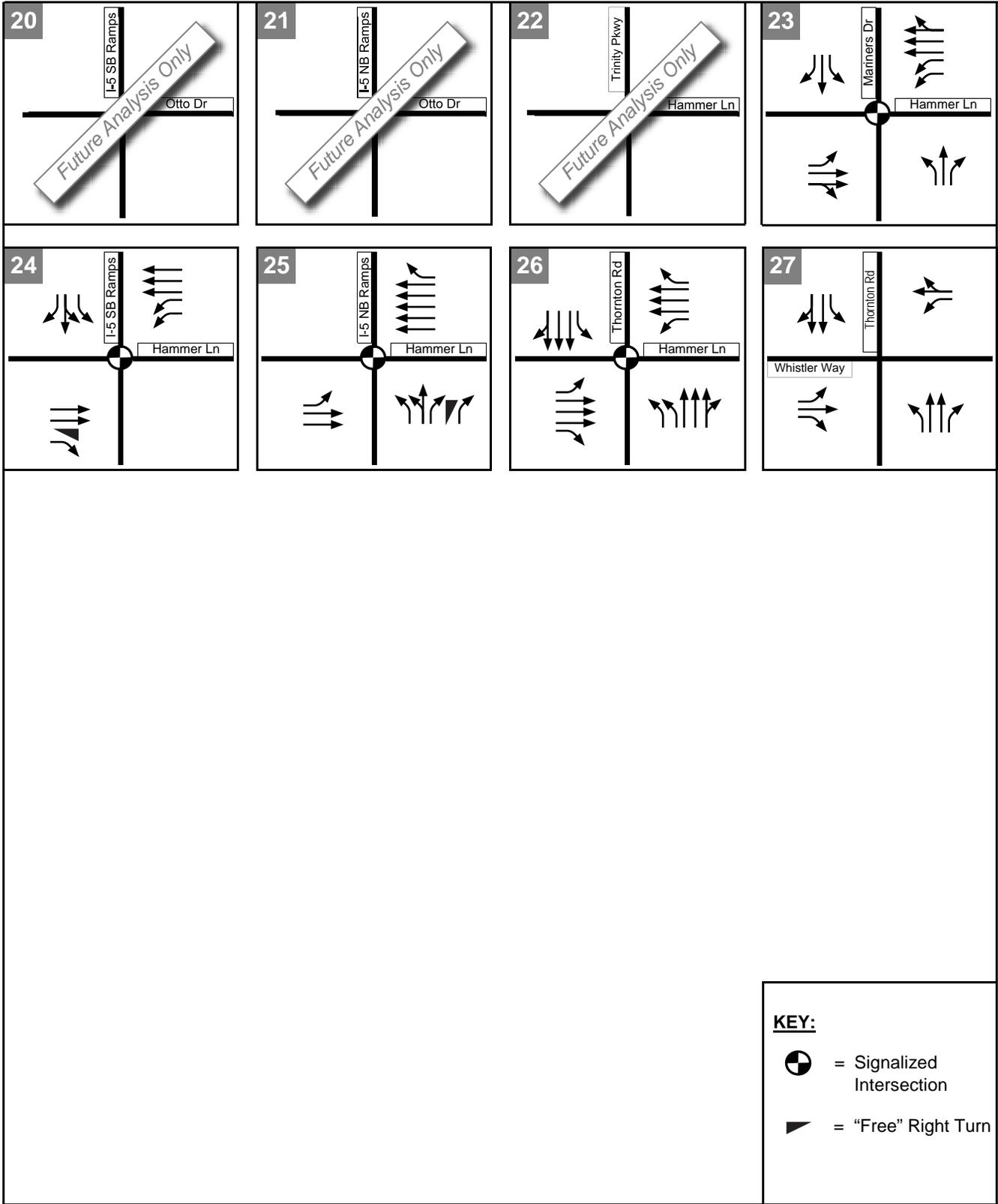
LSA

Figure 4.7.10.A

Crystal Bay EIR

Existing Plus Approved Projects

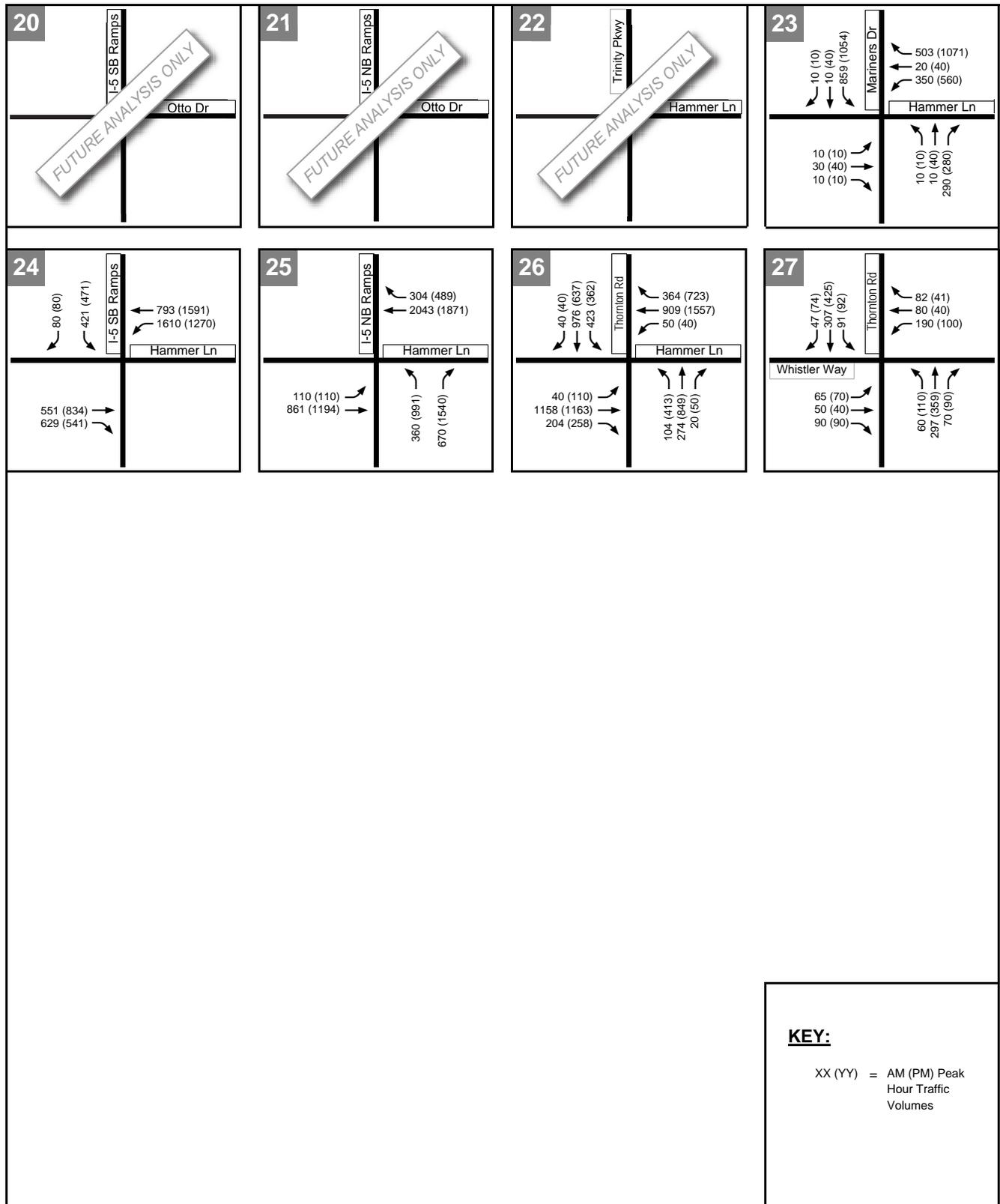
Lane Configurations and Traffic Control



LSA

Figure 4.7.10.B

Crystal Bay EIR
 Existing Plus Approved Projects
 Lane Configurations and Traffic Control



L S A

Figure 4.7.11.B

Crystal Bay EIR
Existing Plus Approved Projects
Peak Hour Traffic Volumes

Roadway Segment Analysis: The roadway segments were analyzed based on the daily traffic volumes, facility type, and number of lanes shown in Table 4.7.M and the LOS criteria shown in Table 4.7.C. The analysis results indicate that for the Existing plus Approved Projects condition, Eight Mile Road from west of Trinity Parkway to east of I-5 would operate acceptably (i.e., LOS D or better).

Freeway Analysis: I-5 traffic forecasts were developed using the City's Existing plus Approved Projects Traffic Model. Each mainline segment of I-5 from north of Eight Mile Road and to south of Hammer Lane was analyzed based on the volumes shown in Table 4.7.N. The analysis results indicate that for the Existing plus Approved Projects scenario, I-5 northbound south of Hammer Lane would operate at LOS E during the PM peak hour and I-5 southbound south of Hammer Lane would operate at LOS E during both the AM peak hour. All other mainline segments would operate at LOS D or better during both peak hours.

Existing Plus Approved Projects Plus Project Conditions Analysis

Intersection Analysis: Traffic from the proposed project was added to the Existing plus Approved Projects forecasts, as shown on Figure 4.7.12. The operations of each study intersection were analyzed with LOS calculations, as summarized in Table 4.7.K. The results indicate that 18 of the 23 study intersections would continue to operate at an acceptable LOS (i.e., LOS D or better) with the addition of project traffic.

The addition of project traffic would worsen operations of intersections projected to operate at deficient service levels prior to the addition of project traffic and result in deficient operations at intersections projected to operate acceptable prior to the addition of project traffic:

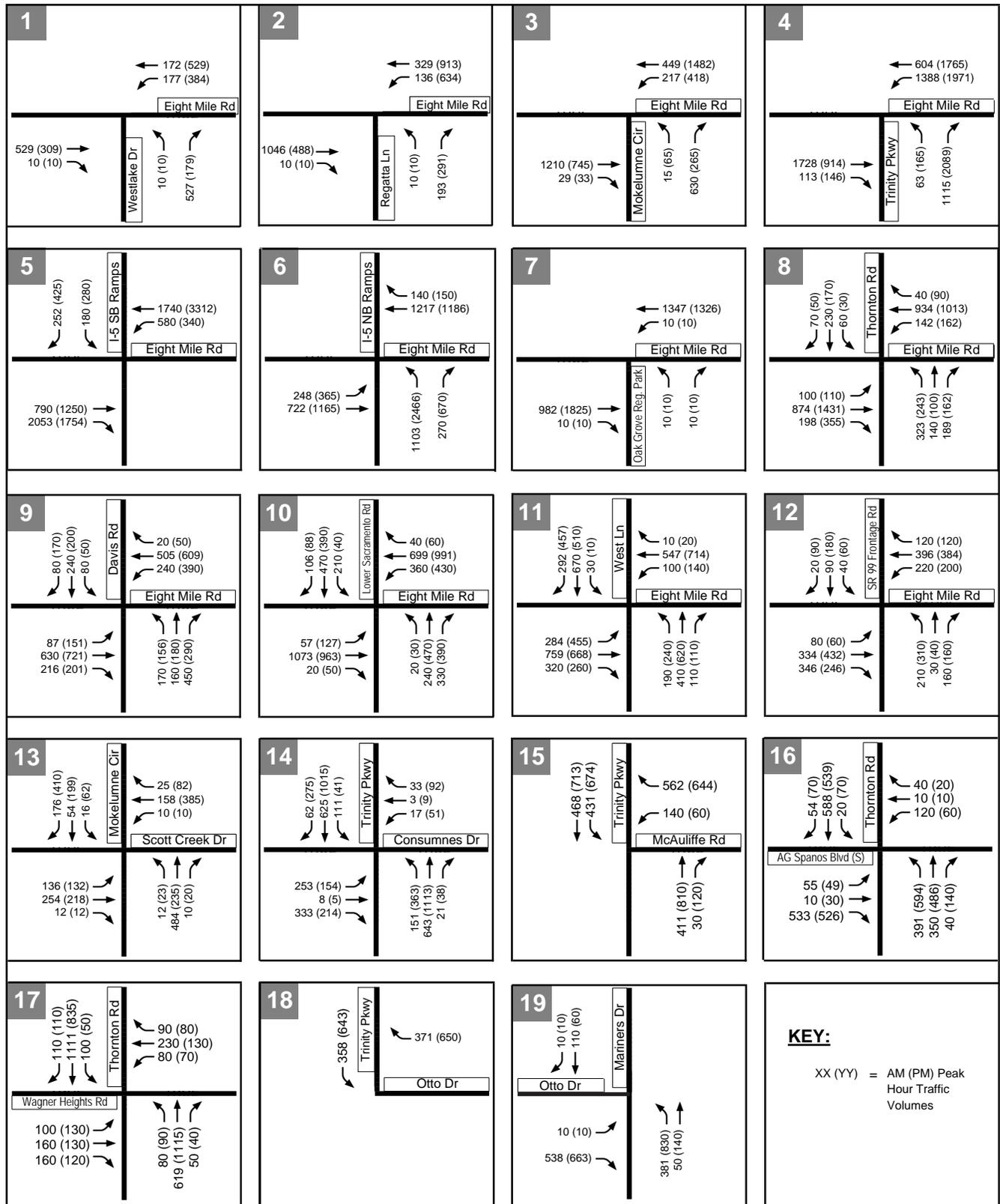
- **Eight Mile Road/Mokelumne Circle** – the addition of project traffic would degrade intersection conditions from LOS D to LOS E during the AM peak hour. This is considered significant based on the City of Stockton significance criteria.
- **Eight Mile Road/I-5 Northbound Ramps** – the addition of project traffic would worsen LOS F conditions during the PM peak hour and increase average delay by more than 5-seconds. This is considered significant based on the City of Stockton significance criteria.
- **Eight Mile Road/Oak Grove Regional Park Entrance** – the addition of project traffic would result in overall LOS E conditions during the PM peak hour and increase average delay by more than 5-seconds. This is considered significant based on the City of Stockton significance criteria.
- **Eight Mile Road/Davis Road** – the addition of project traffic would worsen deficient operations and increase average delay by more than 5-seconds during both peak hours. This is considered significant based on the City of Stockton significance criteria.
- **Eight Mile Road/Lower Sacramento Road** – The addition of project traffic would worsen LOS E conditions during both the AM and PM peak hours, although average delay would not increase by more than 5 seconds. This is not considered significant based on the City of Stockton significance criteria.

- **Eight Mile Road/West Lane** – the addition of project traffic would worsen deficient operations and increase average delay by more than 5-seconds during both peak hours. This is considered significant based on the City of Stockton significance criteria.
- **Eight Mile Road/SR 99 West Frontage Road** – the addition of project traffic would worsen deficient operations and increase average delay by more than 5-seconds during both peak hours. This is considered significant based on the City of Stockton significance criteria.
- **Hammer Lane/Mariners Drive** – the addition of project traffic would worsen LOS F conditions during both the AM and PM peak hours. This is considered significant based on the City of Stockton significance criteria.

The addition of project traffic would not cause deficient operations at intersections that were operating at acceptable levels prior to the addition of project traffic. .

The addition of project traffic is expected to exacerbate vehicle queue spillback, especially at intersections projected to operate deficiently prior to the addition of Project traffic. Measures to address vehicle queue spillback at the impacted intersections are discussed in the mitigation section.

Traffic Signal Warrant Analysis: The peak hour traffic signal warrant was reviewed for the unsignalized intersection under Existing Plus Approved Projects Plus Project conditions. The results of the signal warrant analysis are presented in Table 4.7.L. The addition of project traffic would not cause additional intersections to meet the peak hour volume or delay signal warrant.



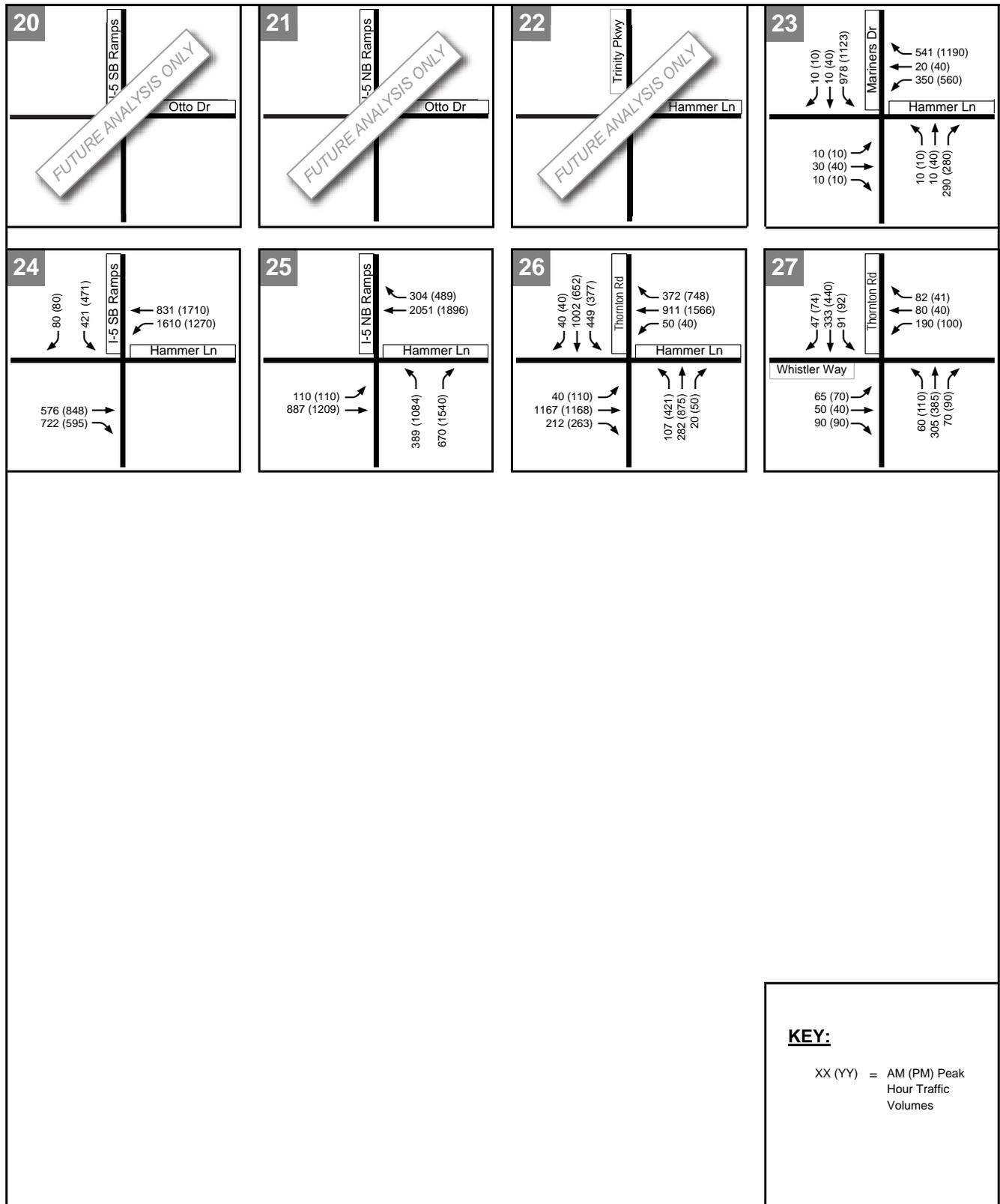
LSA

Figure 4.7.12.A

Crystal Bay EIR
Existing Plus Approved Projects Plus Project
Peak Hour Traffic Volumes

SOURCE: FEHR & PEERS TRANSPORTATION CONSULTANTS

October 2007



L S A

Figure 4.7.12.B

Crystal Bay EIR
 Existing Plus Approved Projects Plus Project
 Peak Hour Traffic Volumes

**Table 4.7.K: Existing plus Approved Projects Without and With Project Conditions
Intersection LOS Summary**

INTERSECTION		CONTROL ¹	PEAK HOUR	EXISTING PLUS APPROVED PROJECTS		EXISTING PLUS APPROVED PROJECTS PLUS PROJECT	
				DELAY ^{2,3}	LOS	DELAY ^{2,3}	LOS
1.	Eight Mile Road/ Westlake Drive	Signal	AM PM	21 17	C B	33 17	C B
2.	Eight Mile Road/ Regatta Lane	Signal	AM PM	26 29	C C	23 31	C C
3.	Eight Mile Road/ Mokelumne Circle	Signal	AM PM	44 22	D C	77 26	E C
4.	Eight Mile Road/ Trinity Parkway	Signal	AM PM	23 38	C D	50 45	D D
5.	Eight Mile Road/ I-5 Southbound Ramps	Signal	AM PM	21 26	C C	32 51	C D
6.	Eight Mile Road/ I-5 Northbound Ramps	Signal	AM PM	36 109	D F	45 155	D F
7.	Eight Mile Road/Oak Grove Regional Park Entrance	SSSC	AM PM	1 (> 150) 30 (> 150)	A (F) D (F)	2 (> 150) 47 (> 150)	A (F) E (F)
8.	Eight Mile Road/ Thornton Road	Signal	AM PM	41 41	D D	43 43	D D
9.	Eight Mile Road/ Davis Road	Signal	AM PM	79 98	E F	87 107	F F
10.	Eight Mile Road/ Lower Sacramento Road	Signal	AM PM	74 67	E E	78 68	E E
11.	Eight Mile Road/ West Lane	Signal	AM PM	72 117	E F	78 126	E F
12.	Eight Mile Road/ SR 99 West Frontage Road	Signal	AM PM	41 69	D E	44 74	D E
13.	Mokelumne Circle/ Scott Creek Drive	Signal	AM PM	28 21	C C	31 27	C C
14.	Trinity Parkway/ Cosumnes Drive	Signal	AM PM	34 43	C D	35 44	C D
15.	Trinity Parkway/ McAuliffe Drive	Signal	AM PM	22 29	C C	22 31	C C
16.	Thornton Road/A.G. Spanos Boulevard (south intersection)	Signal	AM PM	32 47	C D	36 53	D D

INTERSECTION	CONTROL ¹	PEAK HOUR	EXISTING PLUS APPROVED PROJECTS		EXISTING PLUS APPROVED PROJECTS PLUS PROJECT	
			DELAY ^{2,3}	LOS	DELAY ^{2,3}	LOS
17. Thornton Road/ Wagner Heights Road	Signal	AM PM	27 38	C D	28 40	C D
18. Otto Drive/ Trinity Parkway ⁴	N/A	N/A	-- --	-- --	-- --	-- --
19. Otto Drive/ Mariners Drive	SSSC	AM PM	9 (13) 11 (16)	A (B) A (B)	11 (16) 13 (20)	B (C) B (C)
20. Otto Drive/ I-5 Southbound Ramps	N/A	N/A	-- --	-- --	-- --	-- --
21. Otto Drive/ I-5 Northbound Ramps	N/A	N/A	-- --	-- --	-- --	-- --
22. Hammer Lane/ Trinity Parkway	N/A	N/A	-- --	-- --	-- --	-- --
23. Hammer Lane/ Mariners Drive	Signal	AM PM	116 162	F F	164 211	F F
24. Hammer Lane/ I-5 Southbound Ramps	Signal	AM PM	21 21	C C	21 21	C C
25. Hammer Lane/ I-5 Northbound Ramps	Signal	AM PM	16 43	B D	16 45	B D
26. Hammer Lane/ Thornton Road	Signal	AM PM	33 43	C D	34 44	C D
27. Thornton Road/Whistler Way	Signal	AM PM	29 20	C C	29 20	C C

Source: Fehr & Peers, 2007.

Notes: N/A = Not Applicable. Intersection analysis under future conditions only. **Bold:** Indicates unacceptable intersection operations. **Bold/Italics:** Indicates potentially significant project impact.

¹Signal = Signalized intersection; AWSC = All-way stop-controlled intersection; SSSC = Side-street stop-controlled intersection.

²Signalized intersection average control delay (in seconds per vehicle) and LOS calculated using the Highway Capacity Manual (Transportation Research Board, 2000) method.

³All-way stop controlled and side-street stop-controlled intersection LOS is based on average delay per vehicle (in seconds) according to the Highway Capacity Manual (Transportation Research Board, 2000). For the side-street stop controlled intersections, the worst case stop-controlled movement delays are presented in parenthesis.

⁴This intersection exist under Existing Plus Approved Projects conditions; however, it would have no conflicting movements (i.e., there would only be a north leg and east left) so it would operate at LOS A.

Table 4.7.L: Existing plus Approved Projects Without and With Project Conditions Peak Hour Signal Warrants¹

INTERSECTION		EXISTING PLUS APPROVED PROJECTS	EXISTING PLUS APPROVED PROJECTS PLUS PROJECT
7.	Eight Mile Road/Oak Grove Regional Park Entrance	Not Met	Not Met
19.	Otto Drive/Mariners Drive	Met	Met

Source: Fehr & Peers, 2007.

¹Based on Federal Highway Administration's MUTCD, 2003.

Roadway Segment Analysis: Traffic from the proposed project was added to the Existing plus Approved Projects forecasts for the with project analysis. Each roadway segment on Eight Mile Road was analyzed based on the daily traffic volumes, facility type, and number of lanes shown in Table 4.7.M. The analysis results indicate that, with the addition of project traffic, Eight Mile Road between I-5 and Trinity Parkway would worsen to LOS E. (Note – The General Plan is currently being updated with new LOS policies and will likely be considered in Spring 2006. With the adoption of the General Plan Update, the City may accept LOS E on Eight Mile Road.)

Freeway Analysis: Traffic from the proposed project was added to the Existing plus Approved Projects forecasts for the with project analysis. Each I-5 freeway segment from north Eight Mile Road to south of Hammer Lane was analyzed based on the volumes shown in Table 4.7.N. The analysis results indicate that, with the addition of project traffic, I-5 northbound south of Hammer Lane would degrade from LOS E to LOS F during the PM peak hour and I-5 southbound south of Hammer Lane would continue to operate at LOS E during the AM peak hour and degrade from LOS D to LOS E during the PM peak hour.

Table 4.7.M: Existing plus Approved Projects Without and With Project Roadway Segment Levels of Service .

ROADWAY SEGMENT	FACILITY TYPE	NUMBER OF LANES	EXISTING PLUS APPROVED PROJECTS		EXISTING PLUS APPROVED PROJECTS PLUS PROJECT	
			DAILY VOLUME ¹	LOS	DAILY VOLUME ¹	LOS
Eight Mile Road, I-5 Northbound Ramps to Oak Grove Park	Arterial	4	29,800	D	31,700	C
Eight Mile Road, I-5 Southbound Ramps to Trinity Parkway	Arterial	8 ²	60,000	D	67,400	E
Eight Mile Road, Trinity Parkway to Mokelumne Circle	Arterial	4	21,700	C	29,900	C

Source: Fehr & Peers, 2007.

Notes: **Bold/Italics:** Indicates potentially significant project impact.

¹Daily volume calculated from PM peak hour link volume. PM peak hour link volume is approximately 10 percent of the daily volume

²The Eight Mile Road/I-5 Southbound Ramps and Eight Mile Road/Trinity Parkway intersections are closely spaced and turn lanes extended the full distance between the two intersections; therefore, the turn lanes are included in the lane count.

**Table 4.7.N: Existing plus Approved Projects Without and With Project Conditions
I-5 Freeway Levels of Service**

SEGMENT	PEAK HOUR	EXISTING PLUS APPROVED PROJECTS			EXISTING PLUS APPROVED PROJECTS PLUS PROJECT		
		VOLUME	DENSITY ¹	LOS ²	VOLUME	DENSITY ¹	LOS ²
North of Eight Mile Road - Northbound	AM	2,386	12	B	2,454	13	B
	PM	2,795	14	B	2,834	15	B
North of Eight Mile Road - Southbound	AM	3,230	17	B	3,251	17	B
	PM	4,257	22	C	4,325	22	C
Eight Mile Road to Hammer Lane – Northbound	AM	3,293	17	B	3,381	17	B
	PM	5,050	27	D	5,331	29	D
Eight Mile Road to Hammer Lane – Southbound	AM	5,129	27	D	5,410	30	D
	PM	5,424	30	D	5,701	32	D
South of Hammer Lane – Northbound	AM	3,742	19	C	3,859	20	C
	PM	6,497	42	E	6,872	>45	F
South of Hammer Lane – Southbound	AM	6,194	38	E	6,569	45	E
	PM	5,949	35	D	6,165	37	E

Source: Fehr & Peers, 2007.

Notes: **Bold**: Indicates unacceptable intersection operations. **Bold/Italics**: Indicates potentially significant project impact.

¹ Density measured in passenger cars per mile per lane.

² Mainline segment LOS based on vehicle density, according to the Highway Capacity Manual, Transportation Research Board, 2000.

Existing plus Approved Projects plus Project Impacts and Mitigation: Project impacts and mitigation measures are discussed below. The effectiveness of the mitigation measures is shown in Tables 4.7.O for the intersections and 4.7.P for the freeway segments. The effectiveness of the roadway segment mitigation measures is also discussed below. Proposed intersection measures are summarized on Figure 4.7.19A at the end of this section.

Impact TRAF-1a through f: The project would contribute to unacceptable service levels at the following signalized intersections under Existing plus Approved Projects plus Project conditions. This is considered a significant impact and conflicts with of Streets and Highways Goals 1.8 and 1.9.

Eight Mile Road/Mokelumne Circle. The addition of project traffic would result in unacceptable LOS E conditions at this intersection. This is considered a **significant impact**.

Mitigation Measures TRAF-1a: The project applicant shall construct an additional eastbound through lane (for a total of three). This improvement is consistent with the Eight Mile Road Specific Plan. With implementation of this mitigation measure, the impact would be reduced to a less-than-significant level, as shown in Table 4.7.O.

Eight Mile Road/I-5 Northbound Ramps. Project traffic would degrade LOS F conditions during the PM peak hour and increasing average delay by more than 5 seconds. Additionally, project traffic increases the northbound left-turn and eastbound left-turn vehicle queues at this intersection. This is considered a significant impact.

Mitigation Measure TRAF-1b: A Project Approval/Environmental Document (PA/ED) is currently being prepared for interchanges on I-5 including the I-5/Eight Mile Road interchange. An improved interchange configuration with the goal of providing acceptable service levels will be identified through the PA/ED process. The project's fair share contribution towards improvements that would result in acceptable service levels at this interchange would reduce the project's impact to a less-than-significant level at this intersection. However as these improvements are not yet identified nor fully funded, this mitigation would remain significant-and-unavoidable.

Construction of a northbound loop off-ramp would result in acceptable operations at this interchange intersection and reduce vehicle queues to a level that can be accommodate within the available storage area, reducing the project impact to a less than significant level, as shown in Table 4.7.O.

Eight Mile Road/Davis Road. Project traffic would worsen LOS E conditions to LOS F conditions during the AM peak hour and worsen LOS F conditions during the PM peak hour. Average delay would increase by more than five seconds during both peak hours. This is considered a significant impact.

Mitigation Measure TRAF-1c: The project applicant shall contribute their fair share to construct a second eastbound through lane through the intersection (Note: In the eastbound direction, a right-turn lane is currently provided. For this mitigation, the right-turn lane could be converted to a shared through/right-turn lane), an additional westbound through lane (for a total of 2), and an additional westbound left-turn lane (for a total of 2). These improvements are consistent with the Eight Mile Road Specific Plan, which calls for the eventual provision of eight lanes on Eight Mile Road. With implementation of this mitigation measure, the impact would be reduced to a less-than-significant level, as shown in Table 4.7.O. Implementation of this measure would also reduce vehicle queue spillback at this intersection.

Eight Mile Road/West Lane. The intersection is projected to operate at LOS E during the AM peak hour and LOS F during the PM peak hour. Project traffic would increase the average delay by more than five seconds during both the AM and PM peak hours. This is considered a significant impact.

Mitigation Measure TRAF-1d: The project applicant shall contribute its fair share to construct an additional eastbound through lane (for a total of 2), an additional westbound through lane (for a total of 2), and a second eastbound left-turn lane (for a total of 2). These improvements are consistent with

the Eight Mile Road Specific Plan. With implementation of this mitigation measure, the impact would be reduced to a less-than-significant level, as shown in Table 4.7.O.

Eight Mile Road/SR 99 West Frontage Road. This intersection is projected to operate at LOS E conditions during the PM peak hour. Project traffic would increase the average delay by 5 seconds during the PM peak hour. This is considered a significant impact.

Mitigation Measure TRAF-1e: The project applicant shall contribute its fair share to modify the eastbound approach to provide a left turn lane, a through lane and a right-turn only lane. This improvement is consistent with the Eight Mile Road Specific Plan. With implementation of this mitigation measure, the impact would be reduced to a less-than-significant level, as shown in Table 4.7.O.

Hammer Lane/Mariners Drive. This intersection is projected to operate at LOS F conditions during both the AM and PM peak hours. Project traffic would increase the average delay by more than 5 seconds during both the AM and PM peak hours. This is considered a significant impact.

Mitigation Measures TRAF-1f: A Project Approval/Environmental Document (PA/ED) is currently being prepared for interchanges on I-5 including the I-5/Hammer Lane interchange and the adjacent Hammer Lane/Mariners Drive intersection. An improved intersection configuration with the goal of providing acceptable service levels will be identified through the PA/ED process. The project's fair share contribution towards improvements that would result in acceptable service levels at this interchange would reduce the project's impact to a less-than-significant level at this intersection. However as these improvements are not yet identified nor fully funded, this mitigation would remain significant-and-unavoidable.

Although the ultimate configuration for this intersection will be determined through the PA/ED process, modifications to this intersection within the existing right-of-way that would provide acceptable near-term operations with the project were identified. These improvements include the provision of two left-turn lanes and a shared left-through-right-turn lane on the southbound approach by re-striping the approach, in addition to signal modifications. With implementation of this mitigation measure, the impact would be reduced to a less-than-significant level, as shown in Table 4.7.O.

Impact TRAF-2a: The proposed project would contribute to unacceptable service levels at the following unsignalized intersection. This is considered a significant impact under Streets and Highways Goals 1.8 and 1.9.

Eight Mile Road/Oak Grove Regional Park Entrance. The addition of project traffic would result in unacceptable LOS E conditions during the PM peak hour and increase average delay by more than 5 seconds. This is considered a significant impact.

Mitigation Measure TRAF-2a: The project applicant shall contribute their fair share to the signalization of this intersection. This improvement is consistent with the Eight Mile Road Specific Plan. With implementation of this mitigation measure, the impact would be reduced to a less-than-significant level, as shown in Table 4.7.O.

Table 4.7.O: Existing plus Approved Projects Without and With Project Intersection Levels of Service With Mitigation

INTERSECTION		PEAK HOUR	EXISTING PLUS APPROVED PROJECTS		EXISTING PLUS APPROVED PROJECTS PLUS PROJECT		EXISTING PLUS APPROVED PROJECTS PLUS PROJECT PLUS MITIGATION	
			DELAY ¹	LOS	DELAY ¹	LOS	DELAY ¹	LOS
3.	Eight Mile Road/ Mokelumne Circle	AM	44	D	77	E	48	D
		PM	22	C	26	C	25	C
6.	Eight Mile Road/I-5 Northbound Ramps	AM	36	D	45	D	4	A
		PM	109	F	155	F	9	A
7.	Eight Mile Road/Oak Grove Regional Park Entrance	AM	1 (>150)	A (F)	2 (>150)	A (F)	5	A
		PM	30 (>150)	D (F)	47 (>150)	E (F)	2	A
9.	Eight Mile Road/Davis Road	AM	79	E	87	F	36	D
		PM	98	F	107	F	49	D
11.	Eight Mile Road/ West Lane	AM	72	E	78	E	39	D
		PM	117	F	126	F	53	D
12.	Eight Mile Road/SR 99 West Frontage Road	AM	41	D	44	D	31	C
		PM	69	E	74	E	49	D
23.	Hammer Lane/Mariners Drive	AM	116	F	164	F	37	D
		PM	162	F	211	F	52	D

Source: Fehr & Peers, 2007.

Notes: **Bold:** Indicates unacceptable intersection operations. **Bold/Italics:** Indicates potentially significant project impact.

¹Intersection average control delay (in seconds per vehicle) and LOS calculated using the 2000 Highway Capacity Manual (Transportation Research Board) method.

Impact TRAF-3: The proposed project would worsen unacceptable roadway operations on Eight Mile Road between I-5 and Trinity Parkway. This is considered a significant impact based on Streets and Highways Goal 1.3 and 1.9.

Eight Mile Road, I-5 To Trinity Parkway. The addition of project trips would result in LOS E operations on this roadway segment. This is considered a significant impact.

Mitigation Measures TRAF-3: Mitigation of this impact would require constructing ten lanes on Eight Mile Road between I-5 and Trinity Parkway or providing an alternative route to re-distribute traffic in the area. Future improvements would provide a ten lane cross section, including turn lanes, on this portion of Eight Mile Road. A fair share contribution to this improvement would reduce the impact to a less-than-significant level.

Note – The General Plan is currently being updated with new LOS policies. With the adoption of the General Plan Update, the City may accept LOS E on Eight Mile Road between I-5 and Trinity Parkway. Therefore, the project impact may be less-than-significant.

Impact TRAF-4: The proposed project would cause the operation of two freeway segments to operate at unacceptable service level. This is considered a significant impact under Streets and Highways Goal 1.8 and 1.9.

The addition of project traffic would result in LOS F conditions for the northbound I-5 south of Hammer Lane during the PM peak hour and LOS E for the southbound I-5 south of Hammer Lane during both the AM and PM peak hours. The project would increase the total traffic on I-5 south Hammer Lane in the southbound direction by more than five percent in the AM peak hour and in the northbound direction, south of Hammer Lane in the PM peak hour. This is considered a significant impact.

Mitigation Measures TRAF-4: Widening of I-5 to provide four mixed-flow travel lanes per direction would reduce this impact to a less-than-significant level, as shown in Table 4.7.P. The widening of I-5 from the Monte Diablo undercrossing to Eight Mile Road is included in the San Joaquin Council of Governments 2025 Regional Transportation Plan as a Tier 1 project sponsored by Caltrans. However, the Plan notes that full project funding has not yet been identified. Therefore, because the improvement is not fully funded, its implementation cannot be assured and this impact would remain significant-and-unavoidable.

Table 4.7.P: Existing plus Approved Projects plus Project Freeway Segment LOS With Mitigation^{1, 2}

SEGMENT	PEAK HOUR	EXISTING PLUS APPROVED PROJECTS			EXISTING PLUS APPROVED PLUS PROJECT			EXISTING PLUS APPROVED PLUS PROJECT WITH MITIGATION	
		VOL.	DENSITY	LOS	VOL.	DENSITY	LOS	DENSITY	LOS
South of Hammer Lane - Northbound	AM	3,742	19	C	3,859	20	C	15	B
	PM	6,497	42	E	6,872	>45	F	28	D
South of Hammer Lane - Southbound	AM	6,194	38	E	6,569	45	E	26	D
	PM	5,949	35	D	6,165	37	E	24	C

Source: Fehr & Peers, 2007.

Notes: **Bold:** Indicates unacceptable intersection operations. **Bold/Italics:** Indicates potentially significant project impact.

¹ Density measured in passenger cars per mile per lane.

² Mainline segment LOS based on vehicle density, according to the Highway Capacity Manual, Transportation Research Board, 2000.

Table 4.7.Q shows the project contribution, in addition to the proportion of existing traffic and traffic from approved developments, at each significantly impacted intersection, roadway segment, and freeway segment. Where funding sources are not identified for the proposed mitigation measures, the

project applicant would be responsible for funding and implementing the improvement, or contributing their fair share based on Table 4.7.Q. (Note: Funding and timing of improvements will be determined by the City of Stockton.)

Table 4.7.Q: Project Contribution to Impacted Intersections, Roadway Segments, and Freeway Segments Under Existing plus Approved Projects plus Project Conditions

FACILITY	TRAFFIC CONTRIBUTION ¹		
	EXISTING TRAFFIC	APPROVED DEVELOPMENT ²	CRYSTAL BAY
Eight Mile Road/I-5 Northbound Ramps	1,835 (31 percent)	3,650 (61 percent)	508 (8 percent)
Eight Mile Road/Oak Grove Entrance	1,214 (38 percent)	1,790 (56 percent)	188 (6 percent)
Eight Mile Road/Davis Road	1,594 (63 percent)	776 (31 percent)	148 (6 percent)
Eight Mile Road/West Lane	2,741 (65 percent)	1,377 (33 percent)	87 (2 percent)
Eight Mile Road/SR 99 West Frontage Road	1,256 (55 percent)	952 (42 percent)	65 (3 percent)
Hammer Lane/Mariners Drive	1,658 (50 percent)	1,487 (45 percent)	188 (5 percent)
Eight Mile Road, I-5 to Trinity Parkway	1,476 (22 percent)	4,527 (67 percent)	738 (11 percent)
I-5 Northbound, South of Hammer Lane	4,494 (65 percent)	2,003 (29 percent)	375 (6 percent)
I-5 Southbound, South of Hammer Lane	4,155 (67 percent)	1,794 (29 percent)	216 (4 percent)

Source: Fehr & Peers, 2007.

Notes: XX (YY) = Traffic Volume (Percent of Total)

¹ Percentage is based on the projected PM peak hour project traffic volume divided by the total traffic volume at the intersection or on the facility. The PM peak hour contribution is reflected as directed by the City of Stockton Transportation Impact Analysis Guidelines (July 30, 2003).

² Approved development includes not constructed portions of Park West Place as currently proposed.

Future 2025 Conditions

2025 Forecasts: The analysis of future 2025 conditions considers planned development within the City of Stockton and within the surrounding jurisdictions as proposed in the currently adopted 1990 General Plan. The 1990 General Plan build-out includes about 160,000 residential units and about 170 million-square-feet of non-residential uses.

The Future 2025 lane configurations at the study intersections are shown on Figure 4.7.13. Major roadway improvements in the study area include:

- Construction of a new I-5 interchange at Otto Drive
- Widening of Eight Mile Road to eight lanes from Trinity Parkway through Lower Sacramento Road¹⁶
- Extension of Trinity Parkway to March Lane

¹⁶ The widening of Eight Mile Road to eight lanes from Trinity Parkway to I-5 has been completed.

City of Stockton staff directed adjustments to the model land use data used to develop “base” forecasts that reflect approved land use changes in the study area that were not accounted for in the 1990 General Plan including:

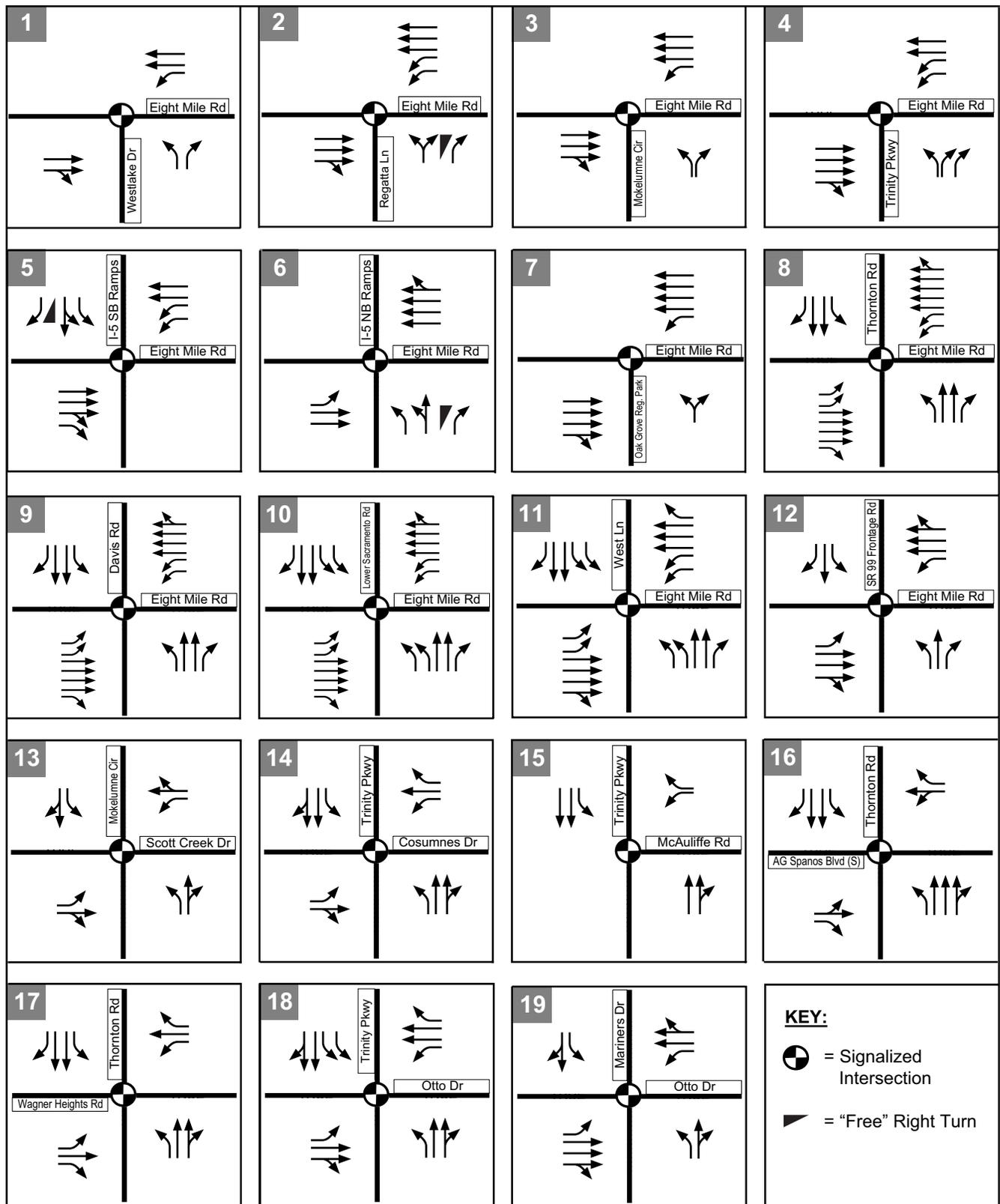
- The constructed portions of Park West Place
- Westlake at Spanos Park West

In addition, traffic from the proposed uses at Park West Place and The Preserve (Atlas Tract) development was added. Park West Place and The Preserve trip generation was based on ITE's Trip Generation (7th Edition). Table F-1 in the appendix shows the ITE trip generation equations and Table F-2 presents the Park West Place and The Preserve trip generation. Future 2025 Without Project peak hour traffic volumes at each study intersections are shown on Figure 4.7.14.

Intersection Analysis: The projected amount of growth in the 2025 land use forecasts is in balance with the roadway improvements, resulting in acceptable levels of service for most of the intersections, roadway segments, and freeway segments in the study area. As shown in Table 4.7.R, all of the study intersections would operate at an acceptable LOS (i.e., LOS D or better) in the Future 2025 conditions scenario, with the exception of:

- Eight Mile Road/Mokelumne Circle – LOS E (PM peak hour)
- Eight Mile Road/I-5 Northbound Ramps – LOS E (PM peak hour)
- Eight Mile Road/West Lane – LOS E (AM and PM peak hours)
- Eight Mile Road/SR 99 West Frontage Road – LOS E (PM peak hour)
- Trinity Parkway/Cosumnes Drive – LOS E (PM peak hour)
- Otto Drive/I-5 Southbound Ramps – (LOS F – AM peak hour)

All study intersections were assumed to be signalized by the Future 2025 scenario. Therefore, the traffic signal warrant analysis was not conducted.



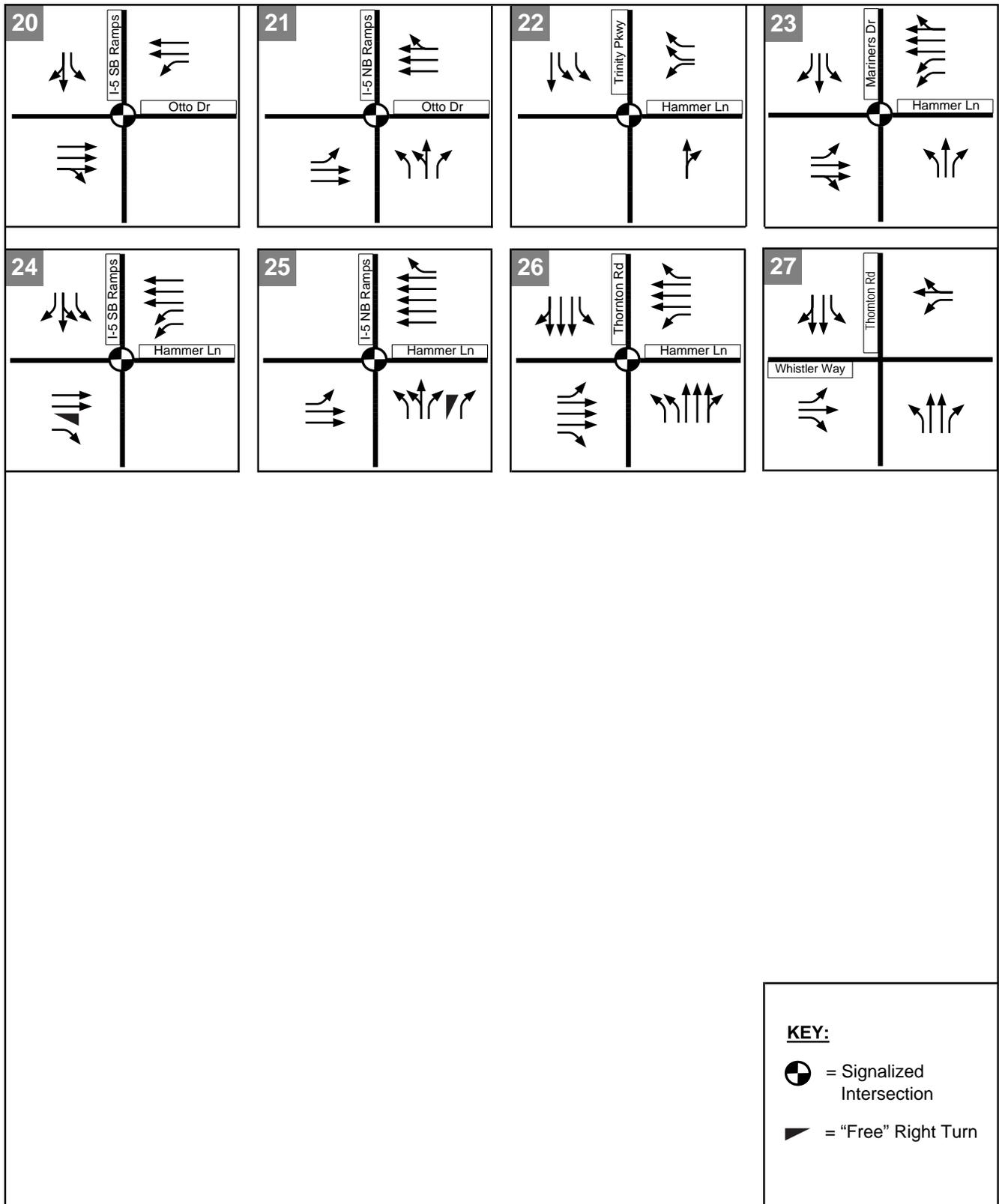
L S A

Figure 4.7.13.A

Crystal Bay EIR

Future 2025

Lane Configurations and Traffic Control



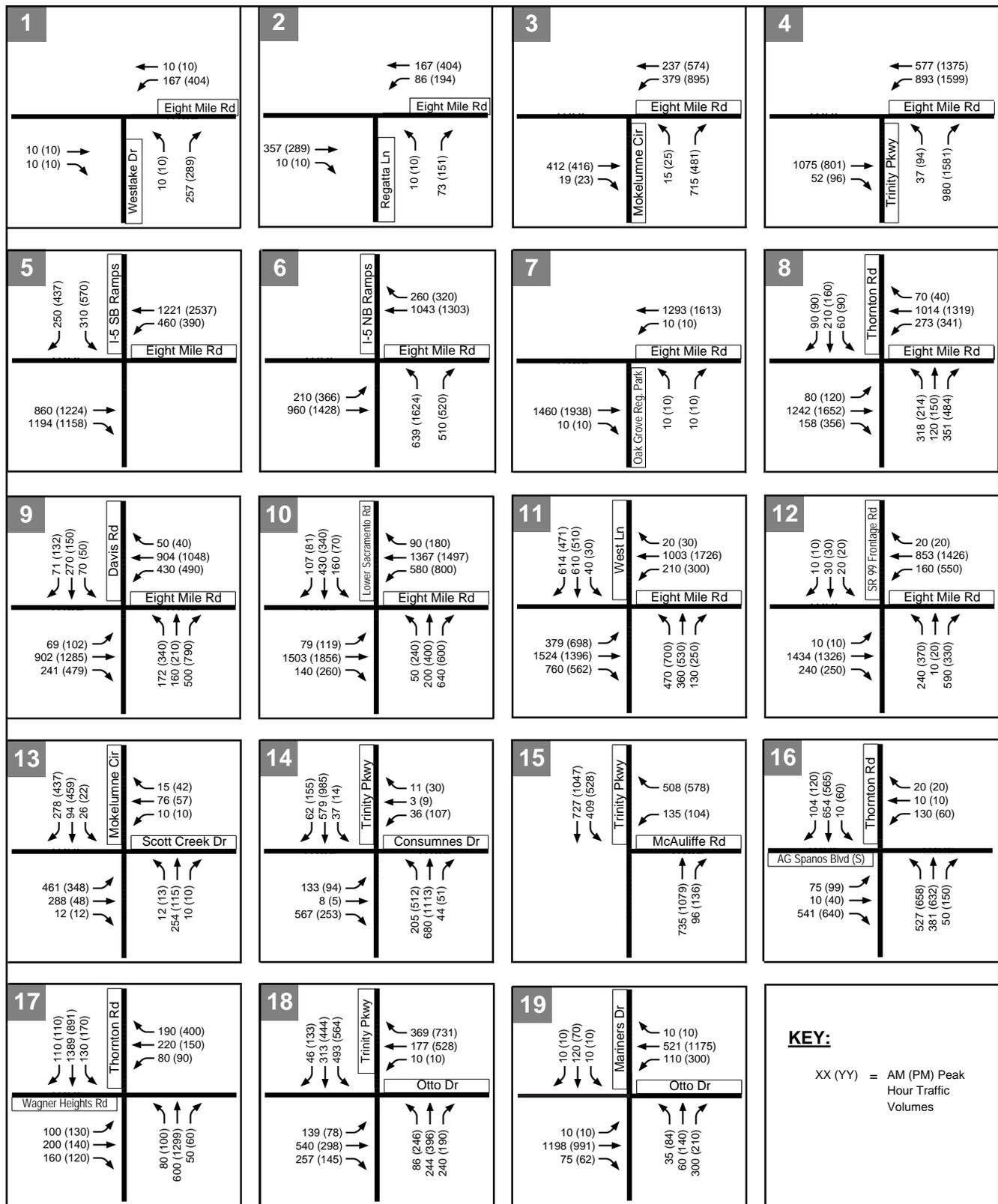
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Figure 4.7.13.B

Crystal Bay EIR

Future 2025

Lane Configurations and Traffic Control



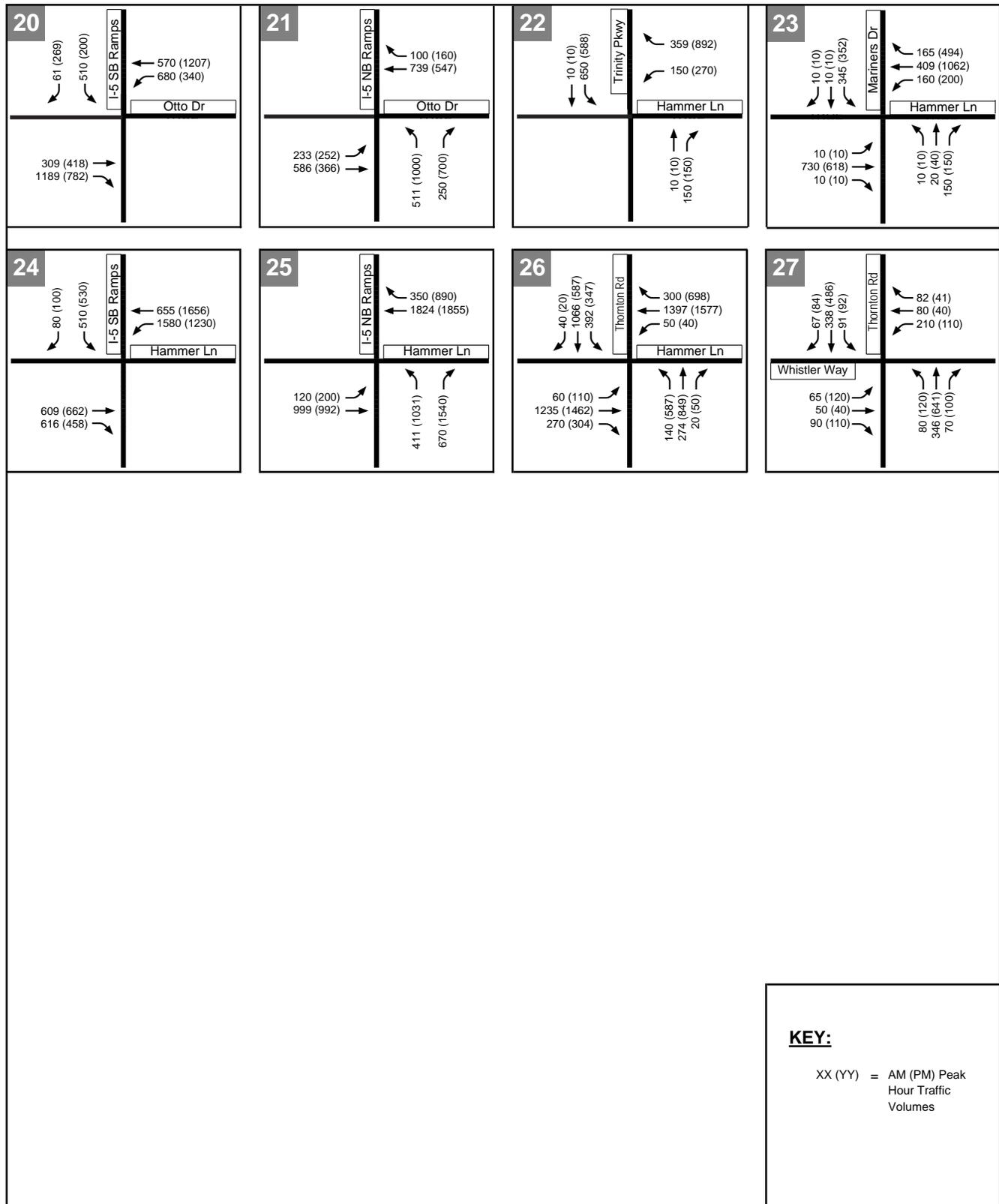
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Figure 4.7.14.A

Crystal Bay EIR
Future 2025 Without Project
Peak Hour Traffic Volumes

SOURCE: FEHR & PEERS TRANSPORTATION CONSULTANTS

October 2007



LSA

Figure 4.7.14.B

Crystal Bay EIR
 Future 2025 Without Project
 Peak Hour Traffic Volumes

Roadway Segment Analysis: The roadway segments were analyzed based on the daily traffic volumes, facility type, and number of lanes shown in Table 4.7.S and the LOS criteria shown in Table 4.7.C. The analysis results indicate that under the Future 2025 condition, Eight Mile Road from west of Trinity Parkway to east of I-5 would operate acceptably (i.e., LOS D or better).

Freeway Analysis: I-5 forecasts were developed using the 1990 General Plan traffic model. Each I-5 freeway segment from north of Eight Mile Road to south of Hammer Lane was analyzed based on the volumes shown in Table 4.7.T. All freeway segments are projected to operate at LOS D or better except northbound I-5 south of Hammer Lane (LOS E during the PM peak hour) and southbound I-5 south of Hammer Lane (LOS E during the AM hour).

Future 2025 Plus Project Conditions

Intersection Analysis: Traffic from the proposed project was added to the Future 2025 Without Project forecasts, as shown on Figure 4.7.15. Each study intersection was analyzed as summarized in Table 4.7.R. The addition of project traffic would degrade the operations of two intersections projected to operate at an acceptable service level prior to the addition of project traffic:

- Mokelumne Circle/Scott Creek Drive – the addition of project traffic would degrade intersection operations from LOS D to LOS F during the PM peak hour. This is considered significant based on the City of Stockton significance criteria.
- Hammer Lane/I-5 Northbound Ramps – the addition of project traffic would degrade intersection operations from LOS D to LOS E during the PM peak hour. This is considered significant based on the City of Stockton significance criteria.

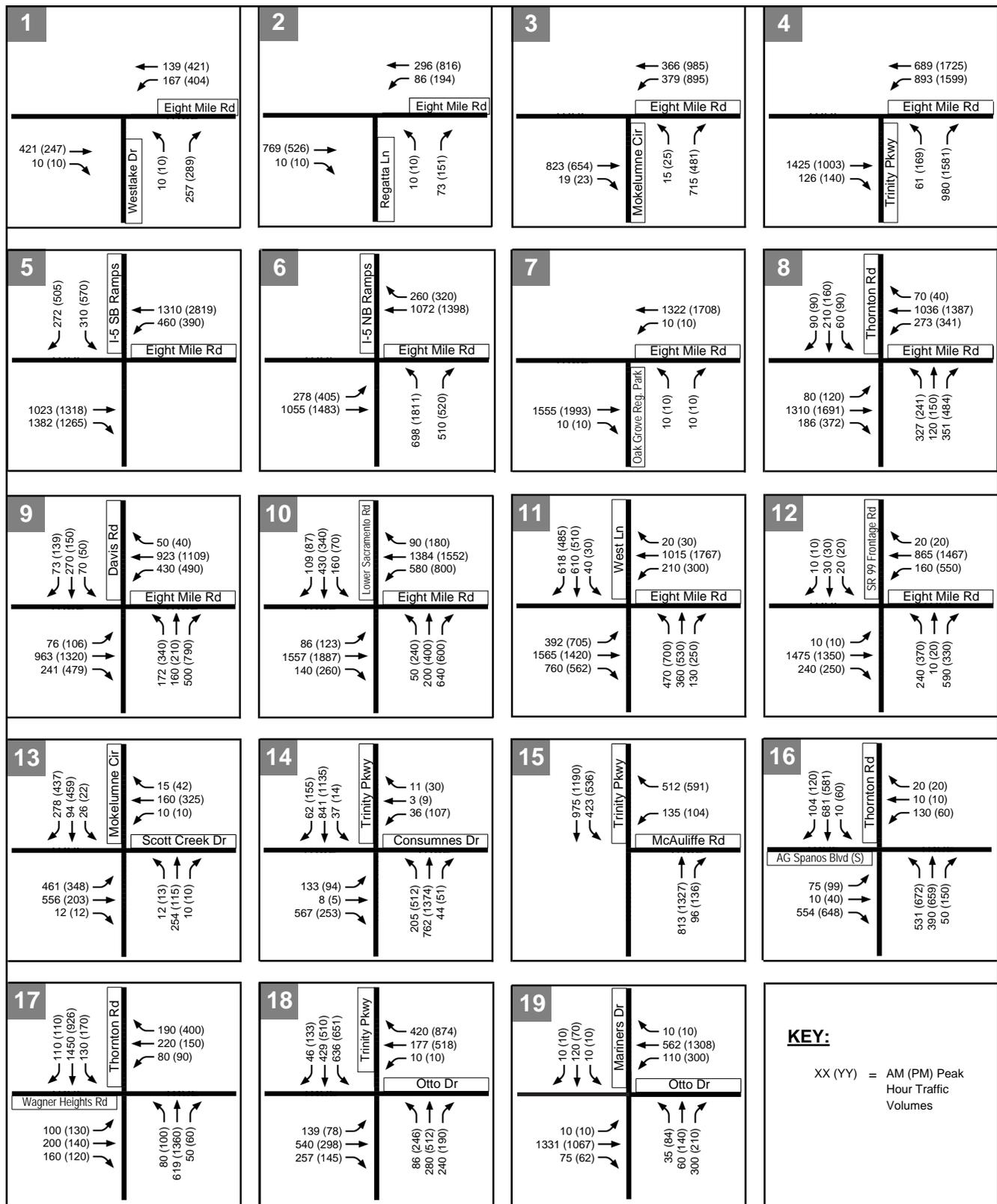
The addition of project traffic would worsen the operations of the following intersections projected to operate at deficient service levels prior to the addition of project traffic:

- Eight Mile Road/Mokelumne Circle – the addition of project traffic would worsen LOS E conditions during the PM peak hour and increase average intersection delay by more than 5 seconds. This is considered significant based on the City of Stockton significance criteria.
- Eight Mile Road/I-5 Northbound Ramps – the addition of project traffic would worsen LOS E conditions to LOS F and increase average delay by more than 5-seconds during the PM peak hour. This is considered significant based on the City of Stockton significance criteria.
- Eight Mile Road/West Lane – the addition of project traffic would worsen LOS E conditions in the PM peak hour by increasing average delay by 3 seconds. This is not considered significant based on the City of Stockton significance criteria.
- Eight Mile Road/SR 99 Frontage Road – the addition of project traffic would worsen LOS E conditions in the PM peak hour by increasing average delay by 1 second. This is not considered significant based on the City of Stockton significance criteria.
- Trinity Parkway/Cosumnes Drive – the addition of project traffic would worsen LOS E conditions during the PM peak hour and increase average delay by more than 5-seconds and

result in LOS E conditions during the AM peak hour. This is considered significant based on the City of Stockton significance criteria.

- Otto Drive/I-5 Southbound Ramps – the addition of project traffic would worsen LOS F conditions in the AM peak hour by increasing average delay by 2 seconds. This is not considered significant based on the City of Stockton significance criteria.

All other intersections would operate acceptably (i.e., LOS D or better) with the addition of project traffic.



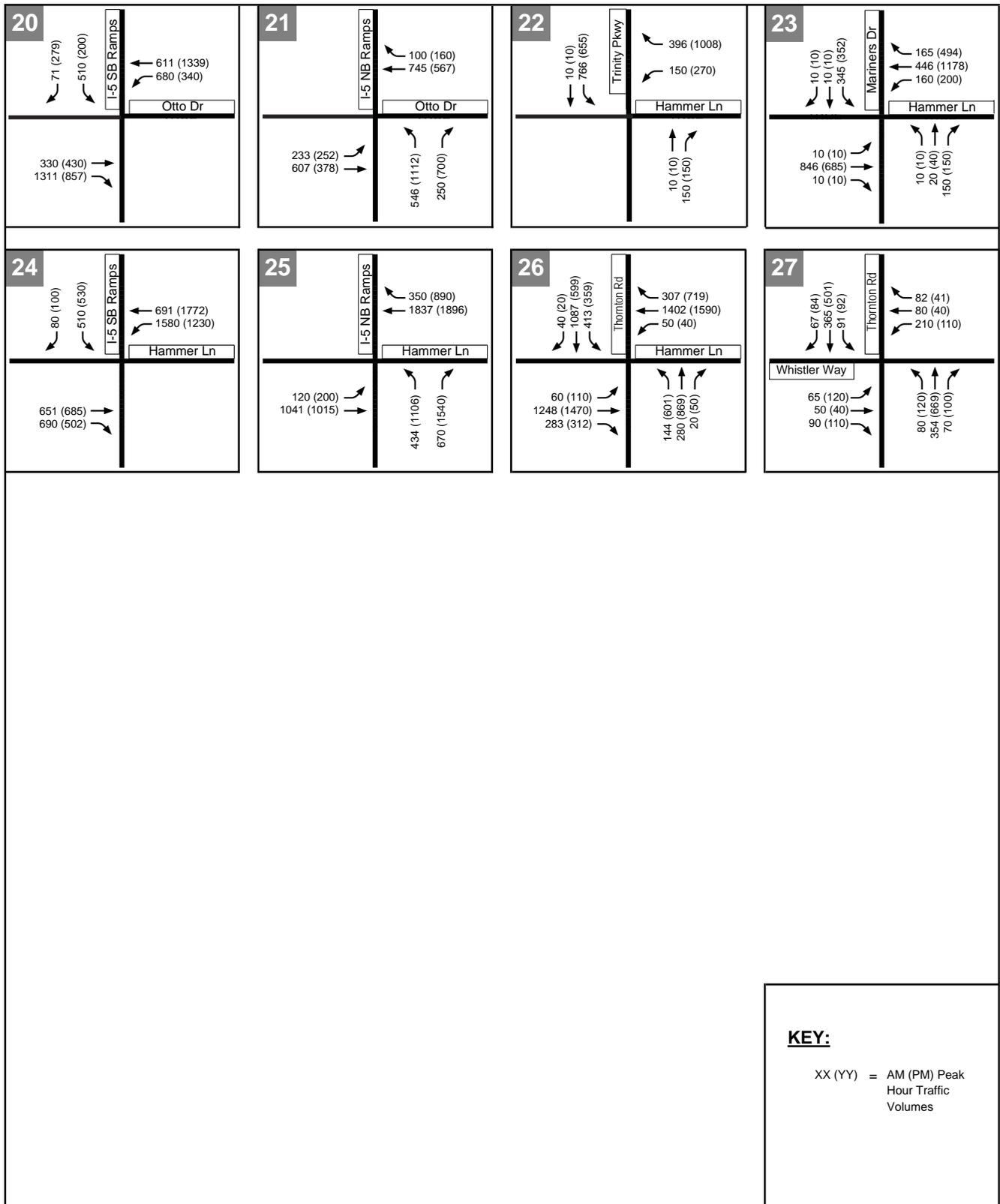
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Figure 4.7.15.A

Crystal Bay EIR
Future 2025 With Project
Peak Hour Traffic Volumes

SOURCE: FEHR & PEERS TRANSPORTATION CONSULTANTS

October 2007



LSA

Figure 4.7.15.B

Crystal Bay EIR
 Future 2025 With Project
 Peak Hour Traffic Volumes

Table 4.7.R: Future 2025 Without and With Project Peak Hour Intersection LOS

INTERSECTION		CONTROL ¹	PEAK HOUR	FUTURE 2025 WITHOUT PROJECT		FUTURE 2025 WITH PROJECT	
				DELAY ²	LOS	DELAY ²	LOS
1.	Eight Mile Road/ Westlake Drive	Signal	AM PM	26 30	C C	36 33	D C
2.	Eight Mile Road/ Regatta Lane	Signal	AM PM	21 22	C C	21 22	C C
3.	Eight Mile Road/ Mokelumne Circle	Signal	AM PM	39 57	D E	52 65	D E
4.	Eight Mile Road/ Trinity Parkway	Signal	AM PM	31 41	C D	28 36	C D
5.	Eight Mile Road/ I-5 Southbound Ramps	Signal	AM PM	21 35	C C	27 53	C D
6.	Eight Mile Road/ I-5 Northbound Ramps	Signal	AM PM	22 77	C E	27 103	C F
7.	Eight Mile Road/Oak Grove Regional Park Entrance	Signal	AM PM	1 2	A A	1 2	A A
8.	Eight Mile Road/ Thornton Road	Signal	AM PM	48 50	D D	49 51	D D
9.	Eight Mile Road/ Davis Road	Signal	AM PM	36 43	D D	36 44	D D
10.	Eight Mile Road/ Lower Sacramento Road	Signal	AM PM	40 39	D D	40 39	D D
11.	Eight Mile Road/ West Lane	Signal	AM PM	60 66	E E	60 69	E E
12.	Eight Mile Road/ SR 99 West Frontage Road	Signal	AM PM	41 79	D E	41 80	D E
13.	Mokelumne Circle/ Scott Creek Drive	Signal	AM PM	32 48	C D	36 95	D F
14.	Trinity Parkway/ Cosumnes Drive	Signal	AM PM	48 60	D E	56 67	E E
15.	Trinity Parkway/ McAuliffe Drive	Signal	AM PM	19 31	B C	21 43	C C
16.	Thornton Road/A.G. Spanos Boulevard (south intersection)	Signal	AM PM	29 24	C C	30 24	C C
17.	Thornton Road/ Wagner Heights Road	Signal	AM PM	30 50	C D	30 53	C D

INTERSECTION		CONTROL ¹	PEAK HOUR	FUTURE 2025 WITHOUT PROJECT		FUTURE 2025 WITH PROJECT	
				DELAY ²	LOS	DELAY ²	LOS
18	Otto Drive/ Trinity Parkway	Signal	AM PM	37 42	D D	42 44	D D
19.	Otto Drive/ Mariners Drive	Signal	AM PM	24 31	C C	24 31	C C
20.	Otto Drive/ I-5 Southbound Ramps	Signal	AM PM	88 20	F B	90 20	F B
21.	Otto Drive/ I-5 Northbound Ramps	Signal	AM PM	33 38	C D	33 39	C D
22.	Hammer Lane/ Trinity Parkway	Signal	AM PM	36 24	D C	36 24	D C
23.	Hammer Lane/ Mariners Drive	Signal	AM PM	23 26	C C	23 22	C C
24.	Hammer Lane/ I-5 Southbound Ramps	Signal	AM PM	29 39	C D	30 39	C D
25.	Hammer Lane/ I-5 Northbound Ramps	Signal	AM PM	17 54	B D	17 58	B E
26.	Thornton Road/ Hammer Lane	Signal	AM PM	34 42	C D	34 43	C D
27.	Thornton Road/ Whistler Way	Signal	AM PM	30 27	C C	30 26	C C

Source: Fehr & Peers, 2007.

Notes: **Bold**: Indicates unacceptable intersection operations. **Bold/Italics**: Indicates potentially significant project impact.

¹Signal = Signalized intersection

²Signalized intersection average control delay (in seconds per vehicle) and LOS calculated using the Highway Capacity Manual (Transportation Research Board, 2000) method.

³Signalized intersection delay is based on a weighted average, with the project the delay for this intersection decreases slightly because the volume is increasing on an approach with a low delay. This decrease in delay would not be noticeable to the driver; therefore, the intersection operates about the same without and with the project.

Roadway Segment Analysis: Traffic from the proposed project was added to the Future 2025 forecasts for the with project analysis. Each roadway segment on Eight Mile Road was analyzed based on the daily traffic volumes, facility type, and number of lanes shown in Table 4.7.S. The analysis results indicate that with the addition of project traffic all of the roadway segments would operate at an acceptable LOS D or better.

Table 4.7.S: Future 2025 Without and With Project Conditions Roadway Segment Levels of Service

ROADWAY SEGMENT	FACILITY TYPE	NUMBER OF LANES	FUTURE 2025 WITHOUT PROJECT		FUTURE 2025 WITH PROJECT	
			DAILY VOLUME ¹	LOS	DAILY VOLUME ¹	LOS
Eight Mile Road, I-5 Northbound Ramps to Oak Grove Park	Arterial	8	35,700	A	36,800	A
Eight Mile Road, I-5 Southbound Ramps to Trinity Parkway	Arterial	8 ²	53,600	D	58,600 ³	D
Eight Mile Road, Trinity Parkway to Mokelumne Circle	Arterial	8	23,700	A	29,900	A

Source: Fehr & Peers, 2007.

¹ Daily volume calculated from PM peak hour link volume. PM peak hour link volume is approximately 10 percent of the daily volume.

²The Eight Mile Road/I-5 Southbound Ramps and Eight Mile Road/Trinity Parkway intersections are closely spaced and turn lanes extended the full distance between the two intersections; therefore, the turn lanes are included in the lane count.

³ Future 2025 With Project daily traffic volume is less than Existing Plus Approved Projects Plus Project daily traffic volume due to the construction of the Otto Drive interchange and the extension of Trinity Parkway to March Lane which provide alternative routes.

Freeway Analysis: Traffic from the proposed project was added to the Future 2025 Without Project peak hour traffic forecasts for I-5. I-5 freeway segments from north of Eight Mile Road to south of Hammer Lane were analyzed based on the volumes shown in Table 4.7.T. The analysis results indicate that the addition of project traffic would degrade freeway operations from LOS E to LOS F for northbound I-5 south of Hammer Lane (PM peak hour) and southbound I-5 south of Hammer Lane (AM peak hour). In addition, project traffic would degrade LOS D conditions to LOS E along southbound I-5 south of Hammer Lane during the PM peak hour. All other freeway study segments would operate at acceptable service levels with the addition of project traffic.

Table 4.7.T: Future 2025 Without and With Project Conditions I-5 Freeway Segment Levels of Service

SEGMENT	PEAK HOUR	FUTURE 2025 WITHOUT PROJECT			FUTURE 2025 WITH PROJECT		
		VOLUME	DENSITY ¹	LOS ²	VOLUME	DENSITY ¹	LOS ²
North of Eight Mile Road – Northbound	AM	2,919	15	B	2,987	15	B
	PM	3,277	17	B	3,316	17	B
North of Eight Mile Road – Southbound	AM	3,881	20	C	3,902	20	C
	PM	4,916	26	D	4,984	26	D
Eight Mile Road to Otto Drive - Northbound	AM	3,316	17	B	3,375	17	B
	PM	4,310	23	C	4,497	23	C

SEGMENT	PEAK HOUR	FUTURE 2025 WITHOUT PROJECT			FUTURE 2025 WITH PROJECT		
		VOLUME	DENSITY ¹	LOS ²	VOLUME	DENSITY ¹	LOS ²
Eight Mile Road to Otto Drive – Southbound	AM	4,750	25	C	4,937	26	D
	PM	5,148	28	D	5,255	28	D
Otto Drive to Hammer Lane – Northbound	AM	3,715	20	C	3,809	20	C
	PM	5,580	31	D	5,879	34	D
Otto Drive to Hammer Lane – Southbound	AM	5,647	32	D	5,946	35	D
	PM	5,674	32	D	5,846	34	D
South of Hammer Lane – Northbound	AM	4,042	21	C	4,159	21	C
	PM	6,356	40	E	6,730	>45	F
South of Hammer Lane – Southbound	AM	6,494	42	E	6,867	>45	F
	PM	5,797	33	D	6,013	36	E

Source: Fehr & Peers, 2007.

Notes: **Bold:** Indicates unacceptable intersection operations. **Bold/Italics:** Indicates potentially significant project impact.

¹ Density measured in passenger cars per mile per lane.

² Mainline segment LOS based on vehicle density, according to the Highway Capacity Manual, Transportation Research Board, 2000.

Future 2025 plus Project Impacts and Mitigation: Project impacts and mitigation measures are discussed below. The effectiveness of the mitigation measures is shown in Tables 4.7.U for intersections and 4.7.V for freeway segments. The effectiveness of the roadway segment mitigation measures is also discussed below. Proposed intersection measures are summarized on Figure 4.7.19.

Impact TRAF-5a, b, c, d, and e: *The proposed project would result in unacceptable service levels or increase the delay by greater than 5 seconds at already deficient operations at five signalized intersections. This is a significant impact under Streets and Highways Goal 1.9.*

Eight Mile Road/Mokelumne Circle. The intersection is project to operate at LOS E conditions during the PM peak hour. Project traffic would increase average delay by more than 5 seconds in the PM peak hour. This is considered a significant impact.

Mitigation Measure TRAF-5a: The project applicant shall contribute its fair share to re-stripe the northbound approach to provide a share left-turn/right-turn lane and an exclusive right-turn lane, in addition to signal modifications. With implementation of this mitigation measure, the impact would be reduced to a less-than-significant level, as shown in Table 4.7.U.

Eight Mile Road/I-5 Northbound Ramps. The addition of project traffic would further degrade LOS E conditions during the PM peak hour to LOS F conditions, and increase average delay by more than 5-seconds. This is considered a significant impact.

Mitigation Measure TRAF-5b: Implement Mitigation Measure TRAF-1c. However as these improvements are not yet identified nor fully funded, this impact would remain significant-and-unavoidable.

Mokelumne Circle/Scott Creek Drive. The addition of project traffic would result in LOS F during the PM peak hour. This is considered a significant impact.

Mitigation Measure TRAF-5c: The project applicant shall provide for an exclusive southbound right-turn lane. With implementation of this improvement, the project impact would be reduced to a less-than-significant level, as shown in Table 4.7.U.

Trinity Parkway/Cosumnes Drive. The addition of project traffic would result in LOS E during the AM peak hour and would contribute to LOS E conditions in the PM peak hour by increasing average delay by more than 5 seconds. This is considered a significant impact.

Mitigation Measure TRAF-5d: The project applicant shall contribute its fair share towards providing an exclusive right turn lane on the eastbound approach. With implementation of this improvement, the project impact would be reduced to a less-than-significant level, as shown in Table 4.7.U.

Hammer Lane/I-5 Northbound Ramps. Project traffic would result in LOS E conditions during the PM peak hour. This is considered a significant impact.

Mitigation Measures TRAF-5e: A Project Application/Environmental Document (PA/ED) is currently being prepared for interchanges on I-5 including the I-5/Hammer Lane interchange. An improved intersection configuration with the goal of providing acceptable service levels will be identified through the PA/ED process. The project's fair share contribution towards improvements that would result in acceptable service levels at this interchange would reduce the project's impact to a less-than-significant level at this intersection. However as these improvements are not yet identified nor fully funded, this mitigation would remain significant-and-unavoidable.

Although the ultimate configuration for this intersection will be determined through the PA/ED process, construction of an additional northbound left-turn would provide acceptable future 2025 operations with the project. With implementation of this mitigation measure, the impact would be reduced to a less-than-significant level, as shown in Table 4.7.U

Table 4.7.U: Future 2025 Without and With Project Intersection Analysis With Mitigation

INTERSECTION		PEAK HOUR	FUTURE 2025 WITHOUT PROJECT		FUTURE 2025 WITH PROJECT		FUTURE 2025 WITH PROJECT WITH MITIGATION	
			DELAY ^{1,2}	LOS	DELAY ^{1,2}	LOS	DELAY ^{1,2}	LOS
3.	Eight Mile Road/Mokelumne Circle	AM	39	D	52	D	40	D
		PM	57	E	65	E	47	D

6.	Eight Mile Road/I-5 Northbound Ramps	AM	22	C	27	C	5	A
		PM	77	E	103	F	8	A
13.	Mokelumne Circle/Scott Creek Drive	AM	32	C	36	D	33	C
		PM	48	D	95	F	44	D
14.	Trinity Parkway/Cosumnes Drive	AM	48	D	56	E	39	D
		PM	60	E	67	E	42	D
25.	Hammer Lane/I-5 Northbound Ramps	AM	17	B	17	B	15	B
		PM	54	D	58	E	39	D

Source: Fehr & Peers, 2007.

Bold: Indicates unacceptable intersection operations. **Bold/Italics:** Indicates potentially significant project impact.¹ Signalized intersection average control delay (in seconds per vehicle) and LOS calculated using the 2000 Highway Capacity

Manual (Transportation Research Board) method.

²Side-street stop-controlled intersections level of service is based on average delay per vehicle (in seconds) according to the Highway Capacity Manual (Transportation Research Board, 2000). The worse case stop-controlled movement delays are presented in parenthesis.

Impact TRAF-6: The proposed project would degrade operations on four freeway segments. This is considered a significant impact under Streets and Highways Goal 1.8 and 1.9.

The addition of project traffic would degrade freeway operations from LOS E to LOS F for northbound I-5 south of Hammer Lane (PM peak hour) and southbound I-5 south of Hammer Lane (AM peak hour). In addition, project traffic would degrade LOS D conditions to LOS E along southbound I-5 south of Hammer Lane during the PM peak hour. This is considered a **significant impact**.

Mitigation Measures TRAF-6: Implement Mitigation Measure TRAF-4. Because the improvement is not fully funded, its implementation cannot be assured and this impact would remain **significant-and-unavoidable**.

Table 4.7.V: Freeway Segment LOS With Mitigation^{1,2}

SEGMENT	PEAK HOUR	FUTURE 2025 WITHOUT PROJECT			FUTURE 2025 WITH PROJECT			FUTURE 2025 WITH PROJECT WITH MITIGATION	
		VOL.	DENSITY	LOS	VOL.	DENSITY	LOS	DENSITY	LOS
South of Hammer Lane - Northbound	AM	4,042	21	C	4,159	21	C	16	B
	PM	6,356	40	E	6,730	>45	F	27	D
South of Hammer Lane - Southbound	AM	6,494	42	E	6,867	>45	F	28	D
	PM	5,797	33	D	6,013	36	E	23	C

Source: Fehr & Peers, 2007.

Notes: **Bold:** Indicates significant project impact.

¹ Density measured in passenger cars per mile per lane.

² Mainline segment LOS based on vehicle density, according to the Highway Capacity Manual, Transportation Research Board, 2000.

Table 4.7.W shows the project contribution, in addition to the proportion of existing traffic and traffic from future developments, at each significantly impacted intersection, roadway segment, and freeway segment. Where funding sources are not identified for the proposed mitigation measures, the project applicant would be responsible for funding and implementing the improvement, or contributing their fair share based on Table 4.7.W. (Note: Funding and timing of improvements will be determined by the City of Stockton.)

Table 4.7.W: Project Contribution to Impacted Intersections, Roadway Segments, and Freeway Segments Under Future 2025 Conditions

FACILITY	TRAFFIC CONTRIBUTION ¹		
	EXISTING TRAFFIC	OTHER FUTURE DEVELOPMENT	CRYSTAL BAY
Eight Mile Road/Mokelumne Circle	736 (24 percent)	1,678 (55 percent)	648 (21 percent)
Eight Mile Road/I-5 Northbound Ramps	1,856 (31 percent)	3,705 (62 percent)	376 (6 percent)
Trinity Parkway/Cosumnes Drive	591 (16 percent)	2,737 (73 percent)	413 (11 percent)
Hammer Lane/I-5 Northbound Ramps	4,602 (69 percent)	1,906 (29 percent)	140 (2 percent)
I-5 Northbound South of Hammer Lane	4,494 (67 percent)	1,862 (28 percent)	374 (5 percent)
I-5 Southbound South of Hammer Lane	4,155 (69 percent)	1,642 (27 percent)	216 (4 percent)

Source: Fehr & Peers, 2007

Notes: N/A = Not Applicable, intersection only existing under future conditions. XX (YY) = Traffic Volume (Percent of Total)

¹ Percentage is based on the projected PM peak hour project traffic volume divided by the total traffic volume at the intersection or on the facility. The PM peak hour contribution is reflected as directed by the City of Stockton Transportation Impact Analysis Guidelines (July 30, 2003).

Future 2035 Conditions

Future 2035 Forecasts: The analysis of future 2035 conditions considers planned development within the City of Stockton and within the surrounding jurisdictions based on the latest land use and roadway assumptions being proposed in the 2035 General Plan Update. The 2035 General Plan Update build-out includes about 210,000 residential units and 200 million-square-feet of non-residential uses.

The Future 2035 lane configurations at the study intersections are shown on Figure 4.7.16. In addition to roadway improvements assumed in the 2025 analysis, the 2035 analysis includes:

- Widening of Thornton Road, Davis Road, and Lower Sacramento Road south of Eight Mile Road to six lanes
- Widening of West Lane south of Eight Mile Road to eight lanes
- Construction of new interchanges on both I-5 and SR 99 approximately 1-mile north of Eight Mile Road
- Extension of Otto Drive west to the Shima Tract
- Widening of I-5 south of Otto Drive to 10 lanes
- Widening of I-5 north of Otto Drive through Eight Mile Road to 8 lanes
- Reconstruction of the SR 99/Eight Mile Road interchange and elimination of the SR 99 Frontage Road/Eight Mile Road intersection (intersection 12)

Adjustments were made to the model land use data to develop “base” forecasts that reflect only the constructed portion of Park West Place in the study area. Traffic estimates for the proposed portions of Park West Place, The Preserve development, and The Sanctuary (Shima Tract) development were added onto the Future 2035 forecasts developed using the model¹⁷. Park West Place, The Preserve, and The Sanctuary trip generation was based on ITE’s Trip Generation (7th Edition). Appendix Table F-1 shows the ITE trip generation equations and Table F-2 presents the Park West Place and The Preserve trip generation. Table F-3 presents The Sanctuary trip generation. Future 2035 Without Project peak hour traffic volumes at each study intersections are shown on Figure 4.7.17.

¹⁷ Traffic analyses are being conducted concurrently for these projects. This approval ensures consistency among the analyses.



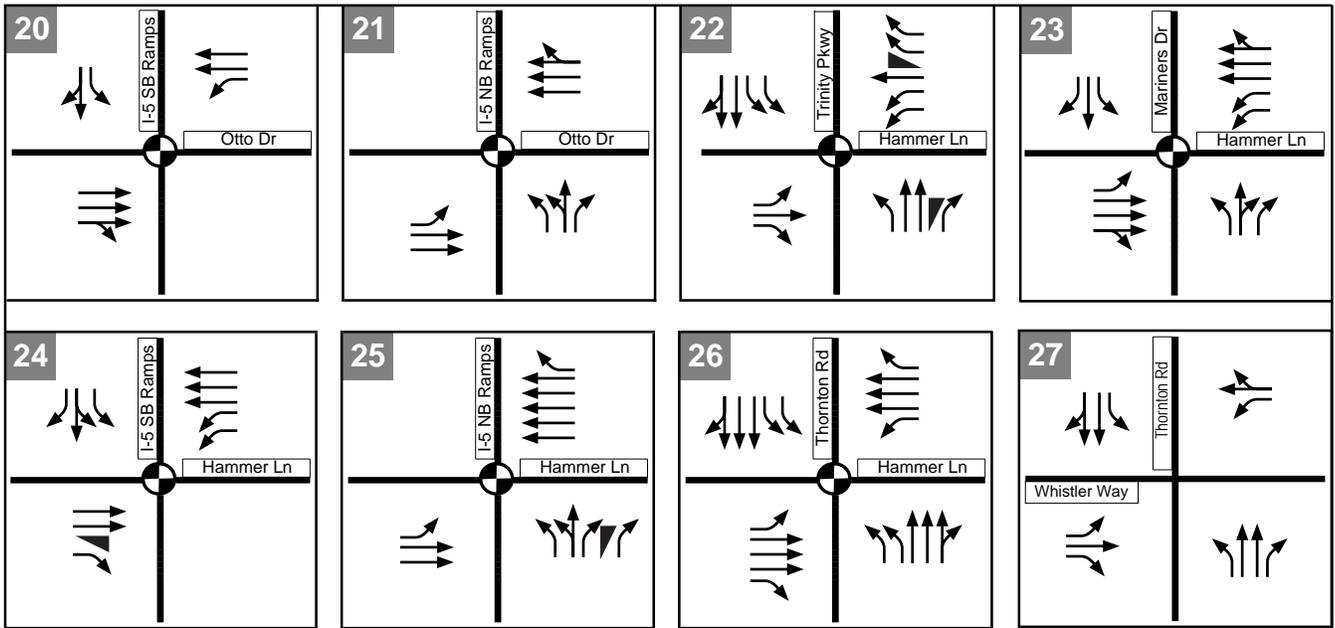
L S A

Figure 4.7.16.A

Crystal Bay EIR

Future 2035

Lane Configurations and Traffic Control



KEY:
 = Signalized Intersection
 = "Free" Right Turn

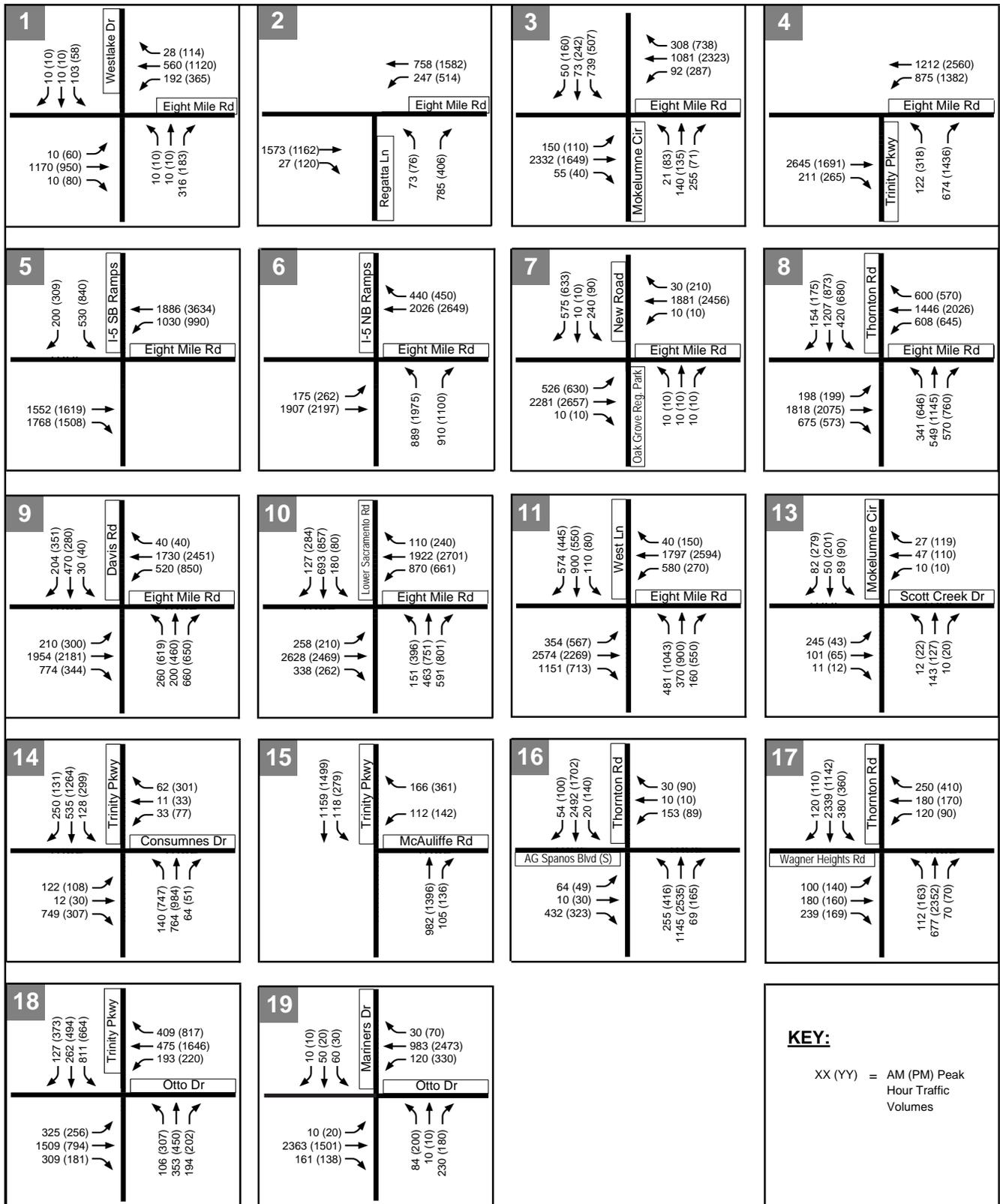
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Figure 4.7.16.B

Crystal Bay EIR

Future 2035

Lane Configurations and Traffic Control



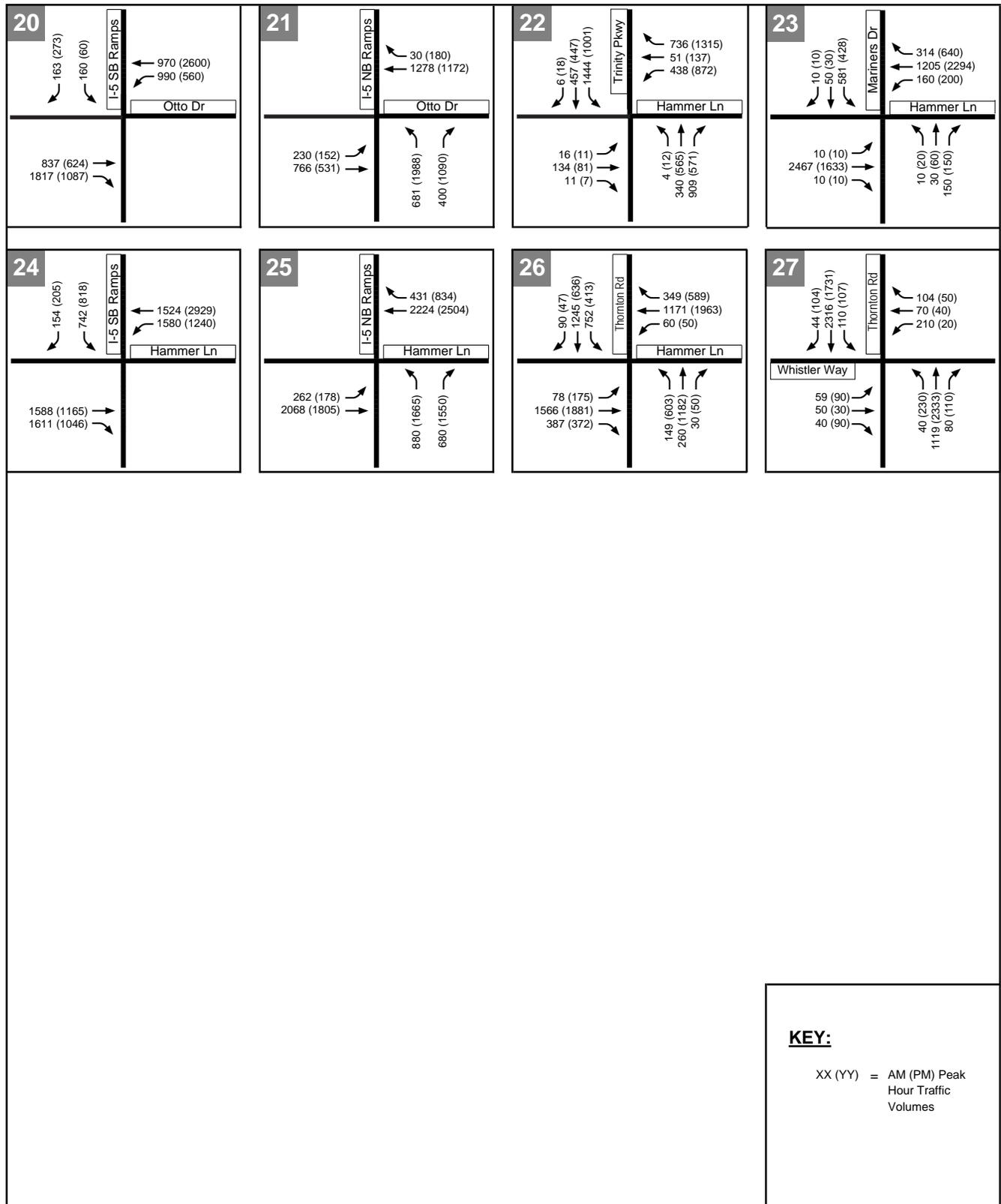
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Figure 4.7.17.A

Crystal Bay EIR
 Future 2035 Without Project
 Peak Hour Traffic Volumes

SOURCE: FEHR & PEERS TRANSPORTATION CONSULTANTS

October 2007



LSA

Figure 4.7.17.B

Crystal Bay EIR
 Future 2035 Without Project
 Peak Hour Traffic Volumes

It should be noted that the forecasts developed for this study differ than the forecasts being prepared for use in the Interstate 5 (I-5) North Stockton Project Approval and Environmental Document (PA/ED), which is currently underway. That study is being prepared to evaluate proposed interchange improvements on the I-5 corridor, including new interchanges at Gateway Boulevard and Otto Drive, and improvements to the Eight Mile Road and Hammer Lane interchanges. For purposes of PA/ED analysis, the land use projections at the City-wide level were adjusted to be consistent with projections prepared by San Joaquin Council of Governments (SJCOG). The SJCOG land use projections include lower levels of both residential and non-residential development than envisioned in the 2035 General Plan.

In order to achieve the desired level of consistency, the 2035 General Plan land use was reduced by about 12,000 dwelling units and 93,700 jobs. While the overall City wide land uses were reduced in the model, land use assumptions within the PA/ED study area (from Country Club Boulevard to SR 12 and from Thornton/Pershing to the western edge of the City) were not changed from the 2035 General Plan, to ensure that the proposed infrastructure will be designed to accommodate the potential future demand. Land use assumptions outside the PA/ED study area were decreased. As the analysis of 2035 conditions presented in this document are based on the buildout of the 2035 General Plan, and not the SJCOG projections, it presents a conservative assessment of potential project impacts in 2035 on the local and regional transportation network.

Intersection Analysis: The amount of development planned for in the 2035 land use projections produces large amounts of traffic in the study area. The added land use development in 2035 results in more intersections, particularly those on Eight Mile Road, Otto Drive, and Hammer Lane, operating at unacceptable levels. As shown in Table 4.7.X, the following intersections are projected to operate at deficient levels in the Future 2035 scenario:

- Eight Mile Road/I-5 Southbound Ramps – LOS F (AM and PM peak hours)
- Eight Mile Road/I-5 Northbound Ramps – LOS F (PM peak hour)
- Eight Mile Road/Thornton Road – LOS F (AM and PM peak hours)
- Eight Mile Road/Davis Road – LOS F (PM peak hour)
- Eight Mile Road/Lower Sacramento Road – LOS E (AM peak hour) and LOS F (PM peak hour)
- Eight Mile Road/West Lane – LOS F (AM and PM peak hours)
- Trinity Parkway/Cosumnes Drive – LOS F (AM and PM peak hours)
- Otto Drive/Trinity Parkway – LOS F (AM and PM peak hours)
- Otto Drive/Mariners Drive – LOS E (PM peak hour)
- Otto Drive/I-5 Southbound Ramps – LOS F (AM peak hour)
- Otto Drive/I-5 Northbound Ramps – LOS F (PM peak hour)
- Hammer Lane/Mariners Drive – LOS F (AM peak hour)
- Hammer Lane/I-5 Southbound Ramps – LOS F (AM peak hour)

- Hammer Lane/I-5 Northbound Ramps – LOS F (PM peak hour)

A Project Approval/Environmental Document (PA/ED) is currently being conducted to identify alternative interchange configurations to accommodate projected traffic volumes at the Eight Mile Road, Otto Drive, and Hammer Lane interchanges under 2035 conditions. The (PA/ED) has not been approved at the writing of this report; therefore, this study assumed the currently planned lane configurations for each interchange.

All study intersections were assumed to be signalized by the Future 2035 scenario. Therefore, the traffic signal warrant analysis was not conducted.

Roadway Segment Analysis: The roadway segments were analyzed based on the daily traffic volumes, facility type, and number of lanes shown in Table 4.7.Y and the LOS criteria shown in Table 4.7.C. The analysis results indicate that for the Future 2035 conditions, Eight Mile Road west of Trinity Parkway and east of I-5 would operate acceptably (i.e., LOS D or better). The segment of Eight Mile Road between I-5 and Trinity Parkway is projected to operate at LOS E.

Freeway Analysis: I-5 forecasts for Future 2035 Without Project conditions were developed using the 2035 General Plan Update Traffic Model. Each mainline segment of I-5 north and south of Eight Mile Road, between Eight Mile Road and Otto Drive, between Otto Drive and Hammer Lane, and south of Hammer Lane was analyzed based on the traffic volumes shown in Table 4.7.Z. Under Future 2035 Without Project condition, all freeway segments would operate at LOS D or better except:

- I-5 northbound from Hammer Lane to Otto Drive – LOS E (PM peak hour)
- I-5 southbound from Otto Drive to Hammer Lane – LOS E (AM and PM peak hours)
- I-5 northbound south of Hammer Lane – LOS F (PM peak hour)
- I-5 southbound south of Hammer Lane – LOS F (AM peak hour) and LOS E (PM peak hour)

Future 2035 Plus Project Conditions

Intersection Analysis: Traffic from the proposed project was added to the Future 2035 Without Project forecasts, as shown on Figure 4.7.18. Each study intersection was analyzed as summarized in Table 4.7.X. The addition of project traffic would worsen the operations of the following intersections projected to operate at deficient service levels prior to the addition of project traffic:

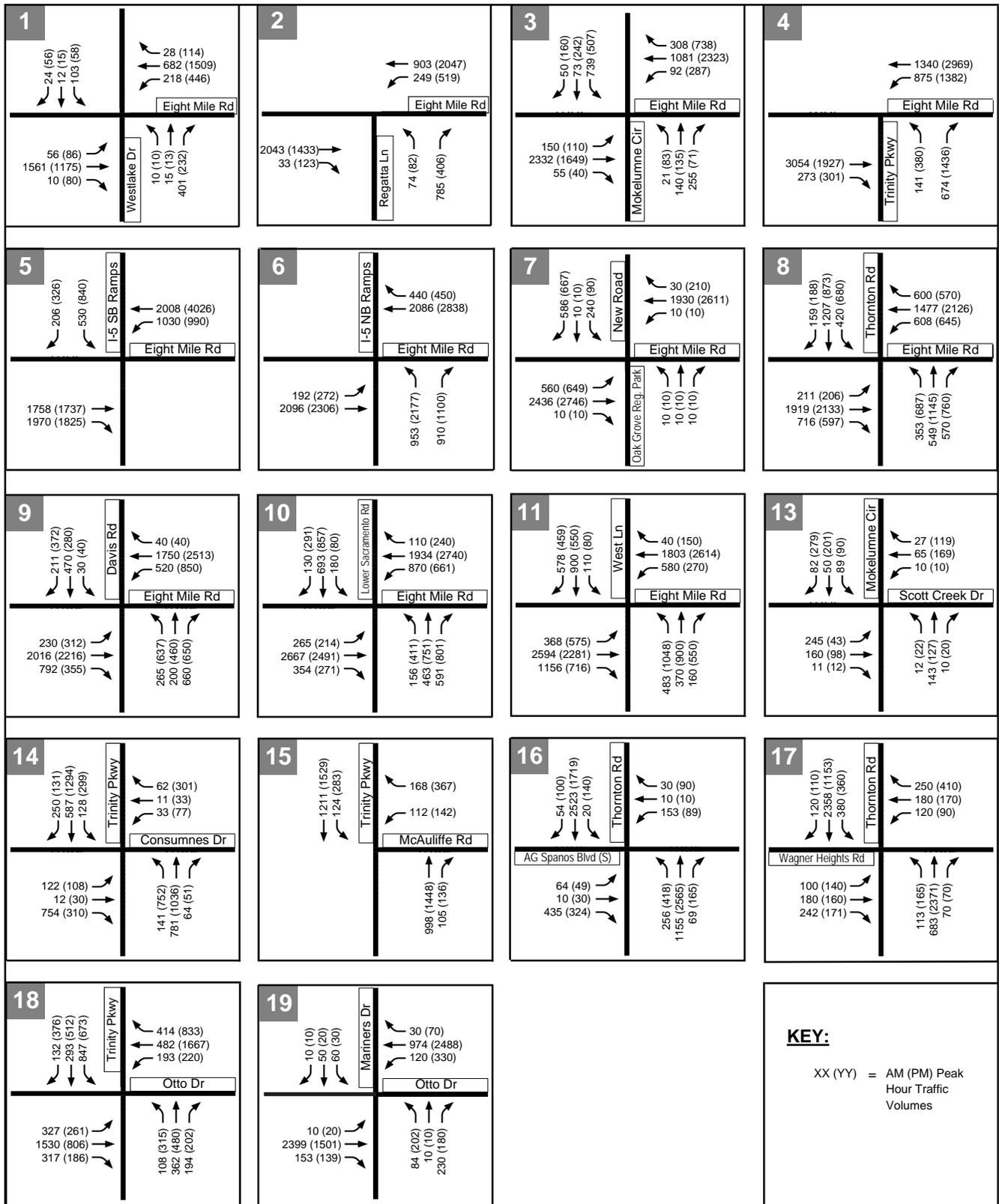
- ***Eight Mile Road/I-5 Southbound Ramps*** – the addition of project traffic would worsen LOS F conditions during both peak hours and increase average delay by more than 5-seconds. This is considered significant based on the City of Stockton significance criteria.
- ***Eight Mile Road/I-5 Northbound Ramps*** – the addition of project traffic would worsen LOS F conditions during the PM peak hour and increase average delay by more than 5-seconds. This is considered significant based on the City of Stockton significance criteria.

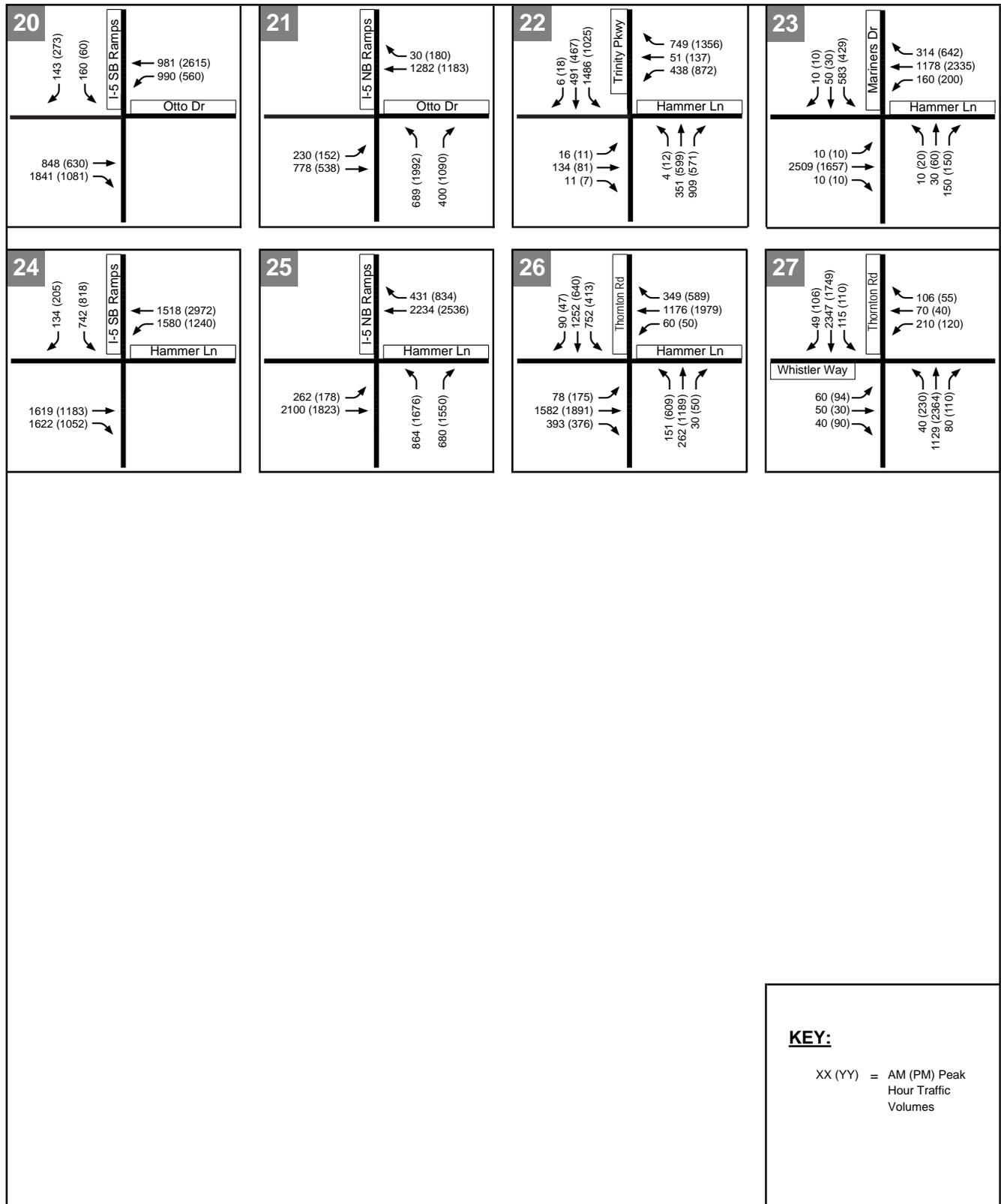
- ***Eight Mile Road/Thornton Road*** – the additional of project traffic would worsen LOS F conditions during both peak hours and increase average delay by more than 5- seconds. This is considered significant based on the City of Stockton significance criteria.
- ***Eight Mile Road/Davis Road*** – the addition of project traffic would worsen LOS F operations during the PM peak hour and increase average delay by more than 5- seconds. This is considered significant based on the City of Stockton significance criteria.
- ***Eight Mile Road/Lower Sacramento Road*** – the addition of project traffic would worsen LOS F during the PM peak hour although average delay would not increase by more than 5-seconds. This is not considered significant based on the City of Stockton significance criteria.
- ***Cosumnes Drive/Trinity Parkway*** – the addition of project traffic would worsen LOS F during the AM and PM peak hours although average delay would not increase by more than 5-seconds. This is not considered significant based on the City of Stockton significance criteria.
- ***Otto Drive/Trinity Parkway*** – the addition of project traffic would worsen LOS F conditions during the PM peak hour and increase average delay by more than 5-seconds. This is considered significant based on the City of Stockton significance criteria.
- ***Otto Drive/Mariners Drive*** – the addition of project traffic would worsen LOS F conditions during the PM peak hour although average delay would not increase by more than 5-seconds. This is not considered significant based on the City of Stockton significance criteria.
- ***Otto Drive/I-5 Southbound Ramps*** – the addition of project traffic would worsen LOS F conditions during the AM peak hour although average delay would not increase by more than 5-seconds. This is not considered significant based on the City of Stockton significance criteria.
- ***Otto Drive/I-5 Northbound Ramps*** – the addition of project traffic would worsen LOS F conditions during the PM peak hour although average delay would not increase by more than 5-seconds. This is not considered significant based on the City of Stockton significance criteria.
- ***Hammer Lane/Mariners Drive*** – the addition of project traffic would worsen LOS F conditions during the AM peak hour although average delay would not increase by more than 5-seconds. This is not considered significant based on the City of Stockton significance criteria.
- ***Hammer Lane/I-5 Southbound Ramps*** – the addition of project traffic would worsen LOS F conditions during the AM peak hour although average delay would not increase by more than 5-seconds. This is not considered significant based on the City of Stockton significance criteria.
- ***Hammer Lane/I-5 Northbound Ramps*** – the addition of project traffic would worsen LOS F conditions during the PM peak hour although average delay would not increase by more than 5-seconds. This is not considered significant based on the City of Stockton significance criteria.

The addition of project traffic would degrade the operation of the following intersections that were operating at acceptable levels prior to the addition of project traffic:

- ***Eight Mile Road/Regatta Lane*** – the addition of project traffic would worsen LOS D conditions to LOS E during the AM peak hour. This is considered significant based on the City of Stockton significance criteria.
- ***Eight Mile Road/Mokelumne Circle*** – the addition of project traffic would worsen LOS D conditions to LOS E during the AM peak hour. This is considered significant based on the City of Stockton significance criteria.
- ***Eight Mile Road/Trinity Parkway*** – the addition of project traffic would worsen LOS D conditions to LOS E during the AM and PM peak hours. This is considered significant based on the City of Stockton significance criteria.

All other intersections would operate acceptably (i.e., LOS D or better) with the addition of project traffic.





KEY:
 XX (YY) = AM (PM) Peak
 Hour Traffic
 Volumes

LSA

Figure 4.7.18.B

Crystal Bay EIR
 Future 2035 With Project
 Peak Hour Traffic Volumes

Table 4.7.X: Future 2035 Without and With Project Peak Hour Intersection LOS

INTERSECTION		CONTROL ¹	PEAK HOUR	FUTURE 2035 WITHOUT PROJECT		FUTURE 2035 WITH PROJECT	
				DELAY ^{2,3}	LOS	DELAY ^{2,3}	LOS
1.	Eight Mile Road/ Westlake Drive	Signal	AM PM	32 28	C C	35 31	C C
2.	Eight Mile Road/ Regatta Lane	Signal	AM PM	53 30	D C	114 36	F D
3.	Eight Mile Road/ Mokelumne Circle	Signal	AM PM	48 39	D D	64 42	E D
4.	Eight Mile Road/ Trinity Parkway	Signal	AM PM	41 46	D D	80 61	E E
5.	Eight Mile Road/ I-5 Southbound Ramps	Signal	AM PM	94 204	F F	132 243	F F
6.	Eight Mile Road/ I-5 Northbound Ramps	Signal	AM PM	23 204	C F	33 244	C F
7.	Eight Mile Road/Oak Grove Regional Park Entrance	SSSC	AM PM	23 27	C C	21 22	C C
8.	Eight Mile Road/ Thornton Road	Signal	AM PM	101 189	F F	109 197	F F
9.	Eight Mile Road/ Davis Road	Signal	AM PM	46 119	D F	47 131	D F
10.	Eight Mile Road/ Lower Sacramento Road	Signal	AM PM	71 84	E F	73 87	E F
11.	Eight Mile Road/ West Lane	Signal	AM PM	147 134	F F	149 137	F F
13.	Mokelumne Circle/ Scott Creek Drive	Signal	AM PM	18 16	B B	18 17	B B
14.	Trinity Parkway/ Cosumnes Drive	Signal	AM PM	81 128	F F	83 131	F F
15.	Trinity Parkway/ McAuliffe Drive	Signal	AM PM	11 45	A D	11 51	A D
16.	Thornton Road/A.G. Spanos Boulevard (south intersection)	Signal	AM PM	33 26	C C	34 26	C C
17.	Thornton Road/ Wagner Heights Road	Signal	AM PM	35 54	C D	36 55	D D
18.	Otto Drive/ Trinity Parkway ⁴	Signal	AM PM	83 102	F F	86 108	F F

INTERSECTION		CONTROL ¹	PEAK HOUR	FUTURE 2035 WITHOUT PROJECT		FUTURE 2035 WITH PROJECT	
				DELAY ^{2,3}	LOS	DELAY ^{2,3}	LOS
19.	Otto Drive/ Mariners Drive	Signal	AM PM	14 76	B E	14 80	B E
20.	Otto Drive/ I-5 Southbound Ramps	Signal	AM PM	186 37	F D	188 38	F D
21.	Otto Drive/ I-5 Northbound Ramps	Signal	AM PM	31 111	C F	31 114	C F
22.	Hammer Lane/ Trinity Parkway	Signal	AM PM	45 44	D D	46 48	D D
23.	Hammer Lane/ Mariners Drive	Signal	AM PM	106 55	F D	108 41	F D
24.	Hammer Lane/ I-5 Southbound Ramps	Signal	AM PM	138 48	F D	141 50	F D
25.	Hammer Lane/ I-5 Northbound Ramps	Signal	AM PM	51 112	D F	54 114	D F
26.	Thornton Road/ Hammer Lane	Signal	AM PM	36 51	D D	36 51	D D
27.	Thornton Road/Whistler Way	Signal	AM PM	29 29	C C	29 29	C C

Source: Fehr & Peers, 2007.

Notes: **Bold**: Indicates unacceptable intersection operations. **Bold/Italics**: Indicates potentially significant project impact.

¹Signal = Signalized intersection; AWSC = All-way stop-controlled intersection; SSSC = Side-street stop-controlled intersection.

²Signalized intersection average control delay (in seconds per vehicle) and LOS calculated using the Highway Capacity Manual (Transportation Research Board, 2000) method.

³All-way stop controlled and side-street stop-controlled intersection LOS is based on average delay per vehicle (in seconds) according to the Highway Capacity Manual (Transportation Research Board, 2000). For the side-street stop controlled intersections, the worse case stop-controlled movement delays are presented in parenthesis.

Roadway Segment Analysis: Traffic from the proposed project was added to the Future 2035 forecasts for the with project analysis. Each roadway segment on Eight Mile Road was analyzed based on the daily traffic volumes, facility type, and number of lanes shown in Table 4.7.Y. The analysis results indicate that the addition of project traffic would degrade roadway conditions along Eight Mile Road east of I-5 from LOS D to LOS E. In addition, LOS E conditions along Eight Mile Road between I-5 and Trinity Parkway would worsen.

Table 4.7.Y: Future 2035 Without and With Project Conditions Roadway Segment Levels of Service

ROADWAY SEGMENT	FACILITY TYPE	NUMBER OF LANES	FUTURE (2035)		FUTURE 2035 WITH PROJECT	
			DAILY VOLUME ¹	LOS	DAILY VOLUME ¹	LOS
Eight Mile Road, I-5 Northbound Ramps to Oak Grove Park	Arterial	8	64,000	D	66,900	E
Eight Mile Road, I-5 Southbound Ramps to Trinity Parkway	Arterial	8	70,700	E	77,100	E
Eight Mile Road, Trinity Parkway to Mokelumne Circle	Arterial	8	48,300	C	66,600	D

Source: Fehr & Peers, 2007.

Notes: **Bold**: Indicates unacceptable intersection operations. **Bold/Italics**: Indicates potentially significant project impact.

¹ Daily volume calculated from PM peak hour link volume. PM peak hour link volume is approximately 10 percent of the daily volume.

Freeway Analysis: Traffic from the proposed project was added to the Future 2035 Without Project peak hour traffic forecasts for I-5. I-5 freeway segments from north of Eight Mile Road to south of Hammer Lane were analyzed based on the volumes shown in Table 4.7.Z. Project traffic would worsen LOS E operations along northbound I-5 between Otto Drive and Hammer Lane (PM peak hour), southbound I-5 between Otto Drive and Hammer Lane (AM and PM peak hours), and southbound I-5 south of Hammer Lane during the PM peak hour. In addition, project traffic would worsen LOS F operations along northbound I-5 south of Hammer Lane during the PM peak hour and southbound I-5 south of Hammer Lane during the AM peak hour. In all cases, the total project traffic added the impacted freeway segments is less than five percent; therefore, the project does not cause a significant impact to the freeway. All other freeway study segments would operate at acceptable service levels with the addition of project traffic.

Table 4.7.Z: Future 2035 Without and With Project Conditions I-5 Freeway Segment Levels of Service

SEGMENT	PEAK HOUR	FUTURE 2035			FUTURE 2035 WITH PROJECT		
		VOLUME	DENSITY ¹	LOS ²	VOLUME	DENSITY ¹	LOS ²
North of Eight Mile Road – Northbound	AM	4,382	14	B	4,399	14	B
	PM	5,524	17	B	5,534	17	B
North of Eight Mile Road – Southbound	AM	6,059	19	C	6,065	19	C
	PM	7,629	24	C	7,646	24	C
Eight Mile Road to Otto Drive - Northbound	AM	5,507	17	B	5,571	17	B
	PM	7,766	24	C	8,044	25	C
Eight Mile Road to	AM	8,031	25	C	8,249	26	D

Otto Drive – Southbound	PM	8,856	29	D	8,973	29	D
Otto Drive to Hammer Lane – Northbound	AM	6,340	20	C	6,411	20	C
	PM	10,432	39	E	10,659	40	E
Otto Drive to Hammer Lane – Southbound	AM	10,507	39	E	10,749	41	E
	PM	10,140	36	E	10,271	37	E
South of Hammer Lane – Northbound	AM	6,942	22	C	7,017	22	C
	PM	11,767	>45	F	12,005	>45	F
South of Hammer Lane – Southbound	AM	11,804	>45	F	12,041	>45	F
	PM	10,696	41	E	10,833	42	E

Source: Fehr & Peers, 2007.

Notes: **Bold**: Indicates unacceptable intersection operations. **Bold/Italics**: Indicates potentially significant project impact.

¹ Density measured in passenger cars per mile per lane.

² Mainline segment LOS based on vehicle density, according to the Highway Capacity Manual, Transportation Research Board, 2000.

Future (2035) plus Project Impacts and Mitigation: Project impacts and mitigation measures are discussed below. Their effectiveness is shown in Tables 4.7.A.1 for intersections. Proposed intersection measures are summarized on Figure 4.7.19.

Impact TRAF-7a through h: The proposed project would worsen the operation of the following signalized intersections projected to operate at deficient service levels prior to the addition of project traffic or result in unacceptable service levels. This is considered a significant impact under Streets and Highways Goal 1.9.

Eight Mile Road/Regatta Lane. The addition of project traffic would degrade operations from LOS D to LOS F during the AM peak hour. This is considered significant.

Mitigation Measure TRAF-7a: The project applicant shall construct an additional eastbound through lane. Implementation of this improvement would reduce the impact to a less-than-significant level, as shown in Table 4.7.A.1.

Eight Mile Road/Mokelumne Circle. The addition of project traffic would degrade operations from LOS D to LOS E during the AM peak hour. This is considered significant.

Mitigation Measure TRAF-7b: The project applicant shall construct an additional eastbound through lane. Implementation of this improvement would reduce the impact to a less-than-significant level, as shown in Table 4.7.A.1.

Eight Mile Road/Trinity Parkway. The addition of project traffic would degrade operations from LOS E to LOS F during the AM peak hour and worsen LOS F conditions during the PM peak hour by increasing average delay by more than 5 seconds. This is considered significant.

Mitigation Measure TRAF-7c: The project applicant shall convert a westbound through lane to a left-turn lane. Implementation of this improvement would reduce the impact to a less-than-significant level, as shown in Table 4.7.A.1.

Eight Mile Road/I-5 Southbound Ramps. The addition of project traffic would degrade operations from LOS E to LOS F during the AM peak hour and worsen LOS F conditions during the PM peak hour by increasing average delay by more than 5 seconds. This is considered significant.

Mitigation Measure TRAF-7d: A Project Analysis/Environmental Document (PA/ED) is currently being prepared for interchanges on I-5 including the I-5/Eight Mile Road interchange. An improved interchange configuration with the goal of providing acceptable service levels will be identified through the PA/ED process. The project's fair share contribution towards improvements that would result in acceptable service levels at this interchange would reduce the project's impact to a less-than-significant level at this intersection. However as these improvements are not yet identified nor fully funded, this mitigation would remain significant-and-unavoidable.

Should construction of the planned interchange improvements be scheduled for completion subsequent to project completion, the project applicant shall pay its fair share contribution to construct two additional westbound through lanes and one additional eastbound right-turn lane at this intersection as an interim improvement. The General Plan Update may allow for LOS E at this location; therefore, with implementation of this interim improvement, the intersection would operate at acceptable levels of service and this impact would be reduced to a less than significant level, as shown in Table 4.7.A.1

Eight Mile Road/I-5 Northbound Ramps. The addition of project traffic would worsen LOS F conditions during the PM peak hour by increasing delay by more than 5 seconds. This is considered significant.

Mitigation Measure TRAF-7e: Implement Mitigation Measure TRAF-1c. However as these improvements are not yet identified nor fully funded, this mitigation would remain significant-and-unavoidable.

Construction of a northbound loop off-ramp would result in acceptable operations at this interchange intersection and reduce vehicle queues to a level that can be accommodated within the available storage area, reducing the project impact to a less than significant level, as shown in Table 4.7.A.1

Eight Mile Road/Thornton Road. The addition of project traffic would worsen LOS F conditions during the AM and PM peak hours by increasing average delay by more than 5 seconds. This is considered significant.

Mitigation Measure TRAF-7f: The analysis assumes build-out of this intersection under future 2035 conditions. There are no additional planned or funded intersection improvements to mitigate the project impact. Measures such as providing second northbound and southbound left-turn lane would reduce the project's impact to a less-than-significant level, although the intersection is projected to continue operating at LOS F during the PM peak hour. Alternatively, the project applicant can contribute to measures that would provide acceptable service levels, such as construction of a continuous flow intersection.

Eight Mile Road/Davis Road. The addition of project traffic would worsen LOS F conditions during the PM peak hour by increasing average delay by more than 5 seconds. This is considered significant.

Mitigation Measure TRAF-7g: The project applicant shall either (alternative #1) construct an additional northbound left-turn lane (for a total of 2) or (alternative #2) construct an exclusive “free” southbound right-turn lane. While implementation of either of these mitigation measures would reduce the project’s impact to a less-than-significant level, improvement alternative #2 would still only provide LOS F conditions while improvement alternative #1 would improve LOS F conditions to LOS E conditions during the PM peak hour. The preferred mitigation measure is to implement both improvements since they minimize delay. However, since the two improvements together still result in LOS E conditions, both improvements are not required to mitigate this project’s impact on this intersection. Implementation of at least one of these improvement alternatives would reduce the impact to a less-than-significant level, as shown in Table 4.7.A.1.

Otto Drive/Trinity Parkway. The addition of project traffic would worsen LOS F conditions during the PM peak hour by increasing delay by more than 5 seconds. This is considered significant.

Mitigation Measure TRAF-7h: The project applicant shall contribute its fair share to provide an additional eastbound through lane (for a total of 3), an additional westbound through lane (for a total of 3), and an additional eastbound left-turn lane (for a total of 2). This mitigation would require acquiring additional right-of-way on Otto Drive between Trinity Parkway and Interstate 5. Implementation of this improvement would reduce the impact to a less-than-significant level, as shown in Table 4.7.A.1.

Table 4.7.A.1: Future 2035 Without and With Project Intersection Analysis With Mitigation

INTERSECTION		PEAK HOUR	FUTURE 2035 WITHOUT PROJECT		FUTURE 2035 WITH PROJECT		FUTURE 2035 WITH PROJECT WITH MITIGATION	
			DELAY ^{1,2}	LOS	DELAY ^{1,2}	LOS	DELAY ^{1,2}	LOS
2.	Eight Mile Road/ Regatta Lane	AM	53	D	114	F	48	D
		PM	30	C	36	D	29	C
3.	Eight Mile Road/ Mokelumne Circle	AM	48	D	64	E	45	D
		PM	39	D	42	D	40	D
4.	Eight Mile Road/ Trinity Parkway	AM	41	D	80	E	36	D
		PM	46	D	61	E	39	D

INTERSECTION	PEAK HOUR	FUTURE 2035 WITHOUT PROJECT		FUTURE 2035 WITH PROJECT		FUTURE 2035 WITH PROJECT WITH MITIGATION	
		DELAY ^{1,2}	LOS	DELAY ^{1,2}	LOS	DELAY ^{1,2}	LOS
5. Eight Mile Road/ I-5 Southbound Ramps	AM	94	F	132	F	63	E
	PM	204	F	243	F	54	E
6. Eight Mile Road/ I-5 Northbound Ramps	AM	23	C	33	C	4	A
	PM	204	F	244	F	7	A
8. Eight Mile Road/ Thornton Road	AM	101	F	109	F	79	E
	PM	189	F	197	F	115	F
9. Eight Mile Road/ Davis Road	AM	46	D	47	D	1: 48 / 2: 47	1: D / 2: D
	PM	119	F	131	F	1: 74 / 2: 113	1: E / 2: F
18. Otto Drive/ Trinity Parkway ⁴	AM	83	F	86	F	49	D
	PM	102	F	108	F	53	D

Source: Fehr & Peers, 2007.

Bold: Indicates significant project impacts.

¹Signalized intersection average control delay (in seconds per vehicle) and LOS calculated using the 2000 Highway Capacity

Manual (Transportation Research Board) method.

²Side-street stop-controlled intersections level of service is based on average delay per vehicle (in seconds) according to the Highway Capacity Manual (Transportation Research Board, 2000). The worse case stop-controlled movement delays are presented in parenthesis.

³Signalized intersection delay is based on a weighted average, with the project the delay for this intersection decreases slightly because the volume is increasing on an approach with a low delay. This decrease in delay would not be noticeable to the driver; therefore, the intersection operates about the same without and with the project.

Impact TRAF-8: The proposed project would result in unacceptable roadway operations on Eight Mile Road east of I-5 and between I-5 and Trinity Parkway. This is considered a significant impact based on Streets and Highways Goal 1.3. This is the same impact as Impact TRAF-3.

The addition of project trips would degrade Eight Mile Road east of I-5 from LOS D to LOS E and worsen LOS E conditions along Eight Mile Road between I-5 and Trinity Parkway. The total traffic on Eight Mile Road between I-5 and Trinity Parkway would increase by more than five percent. This is considered a significant impact.

Mitigation Measures TRAF-8: Mitigation of this impact would require widening Eight Mile Road to 10-lanes from the Oak Grove Park entrance to Trinity Parkway or providing an alternative route to re-distribute traffic in the area. As part of the PA/ED for the Eight Mile Road interchange, a 10 lane cross section (including turn lanes) may be provided. A fair share contribution to this improvement would reduce the impact to a less-than-significant level.

Note – The General Plan is currently being updated with new LOS policies. With the adoption of the General Plan Update, the City may accept LOS E at the Eight Mile Road interchange. Therefore, the project impact may be less-than-significant.

Impact TRAF-9: *The proposed project would worsen operations on six freeway segments. This is considered a potentially significant impact under Streets and Highways Goal 1.8 and 1.9.*

The addition of project traffic would worsen operations along two I-5 freeway segments; however, the total traffic would be increased by less than five percent:

- Northbound between Hammer Lane and Otto Drive – The addition project traffic would contribute to LOS E conditions during the PM peak hour
- Southbound between Otto Drive and Hammer Lane – The addition project traffic would contribute to LOS E conditions during both the AM and PM peak hours
- Northbound south of Hammer Lane – The addition project traffic would contribute to LOS F conditions during the PM peak hour
- Southbound south of Hammer Lane – The addition of project traffic would contribute to LOS F conditions during the AM peak hour and LOS E conditions during the PM peak hour

The project impact on these freeway segments would be less-than-significant.

Mitigation Measures TRAF-9: No mitigation is required; the project impact is considered less-than-significant.

Table 4.7.B.1 shows the project contribution, in addition to the proportion of existing traffic and traffic from future developments, at each significantly impacted intersection, roadway segment, and freeway segment. Where funding sources are not identified for the proposed mitigation measures, the project applicant would be responsible for funding and implementing the improvement, or contributing their fair share based on Table 4.7.B.1. (Note: Funding and timing of improvements will be determined with the City of Stockton.)

Table 4.7.B.1: Project Contribution to Impacted Intersections, Roadway Segments, and Freeway Segments Under Future 2035 Conditions

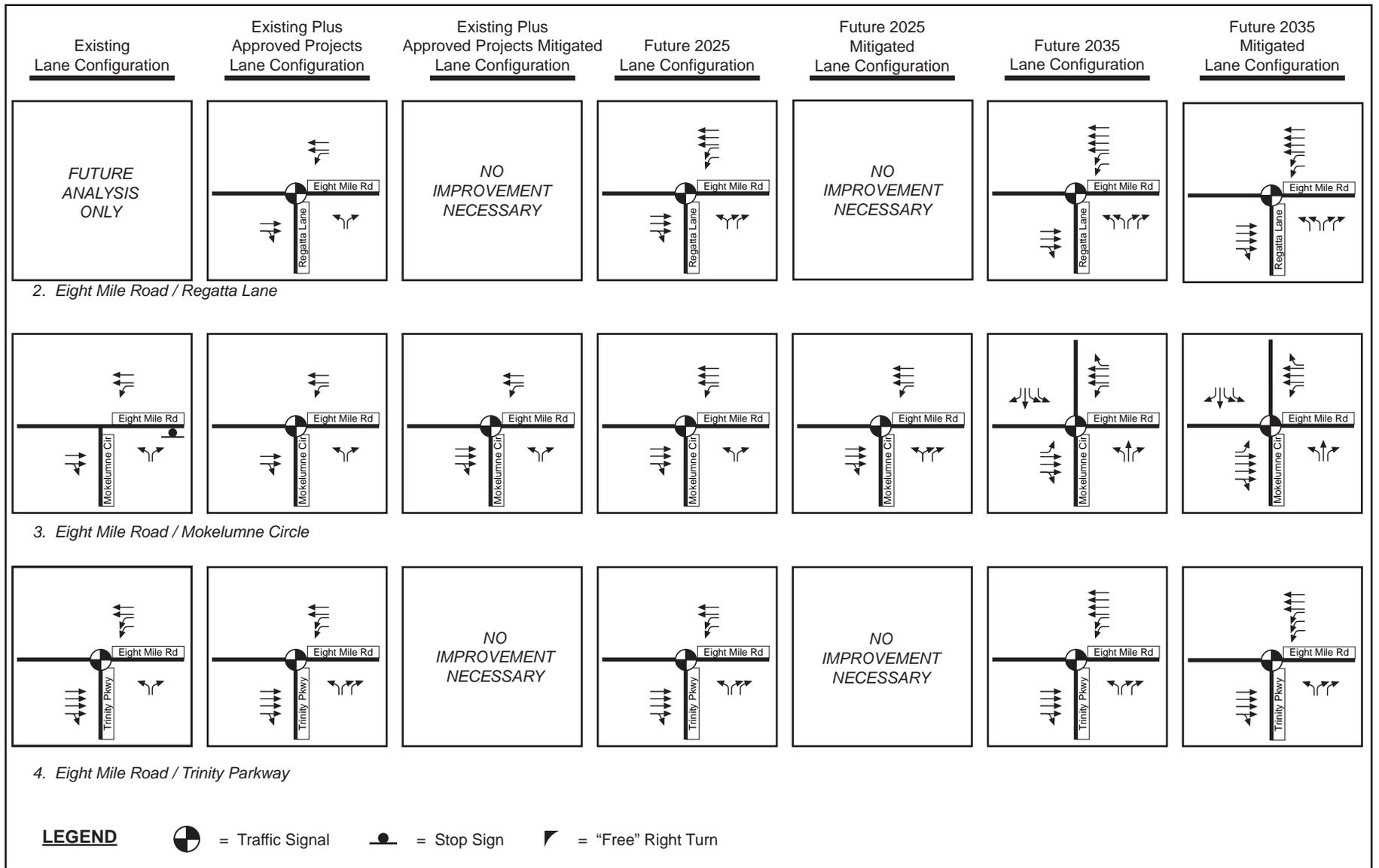
FACILITY	TRAFFIC CONTRIBUTION ¹		
	EXISTING	OTHER FUTURE DEVELOPMENT	CRYSTAL BAY
Eight Mile Road/Trinity Parkway	1,522 (17 percent)	6,873 (75 percent)	741 (8 percent)
Eight Mile Road/I-5 Southbound Ramps	1,829 (18 percent)	7,715 (76 percent)	644 (6 percent)
Eight Mile Road/I-5 Northbound Ramps	1,856 (19 percent)	7,287 (75 percent)	510 (5 percent)
Eight Mile Road/Thornton Road	1,671 (15 percent)	8,939 (82 percent)	246 (2 percent)

FACILITY	TRAFFIC CONTRIBUTION ¹		
	EXISTING	OTHER FUTURE DEVELOPMENT	CRYSTAL BAY
Eight Mile Road/Davis Road	1,594 (18 percent)	6,972 (80 percent)	159 (2 percent)
Otto Drive/Trinity Parkway	N/A	6,404 (98 percent)	126 (2 percent)
Otto Drive/I-5 Northbound Ramps	N/A	5,113 (99 percent)	43 (1 percent)
Eight Mile Road, east of I-5	1,187 (18 percent)	5,209 (78 percent)	298 (4 percent)
Eight Mile Road, I-5 to Trinity Parkway	1,476 (19 percent)	5,593 (73 percent)	645 (8 percent)

Source: Fehr & Peers, 2007.

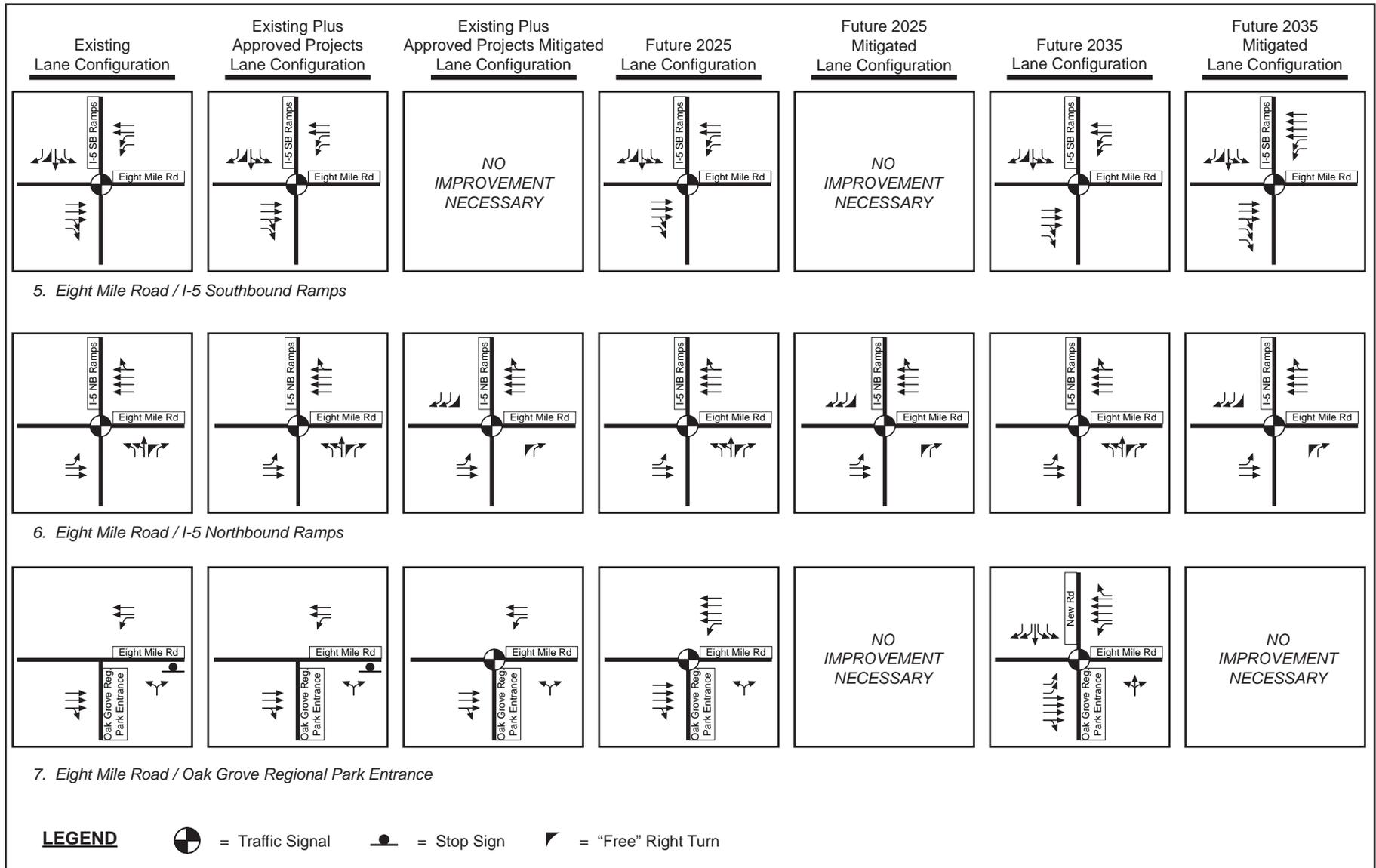
Notes: N/A = Not Applicable, intersection only existing under future conditions. XX (YY) = Traffic Volume (Percent of Total)

¹ Percentage is based on the projected PM peak hour project traffic volume divided by the total traffic volume at the intersection or on the facility. The PM peak hour contribution is reflected as directed by the City of Stockton Transportation Impact Analysis Guidelines (July 30, 2003).



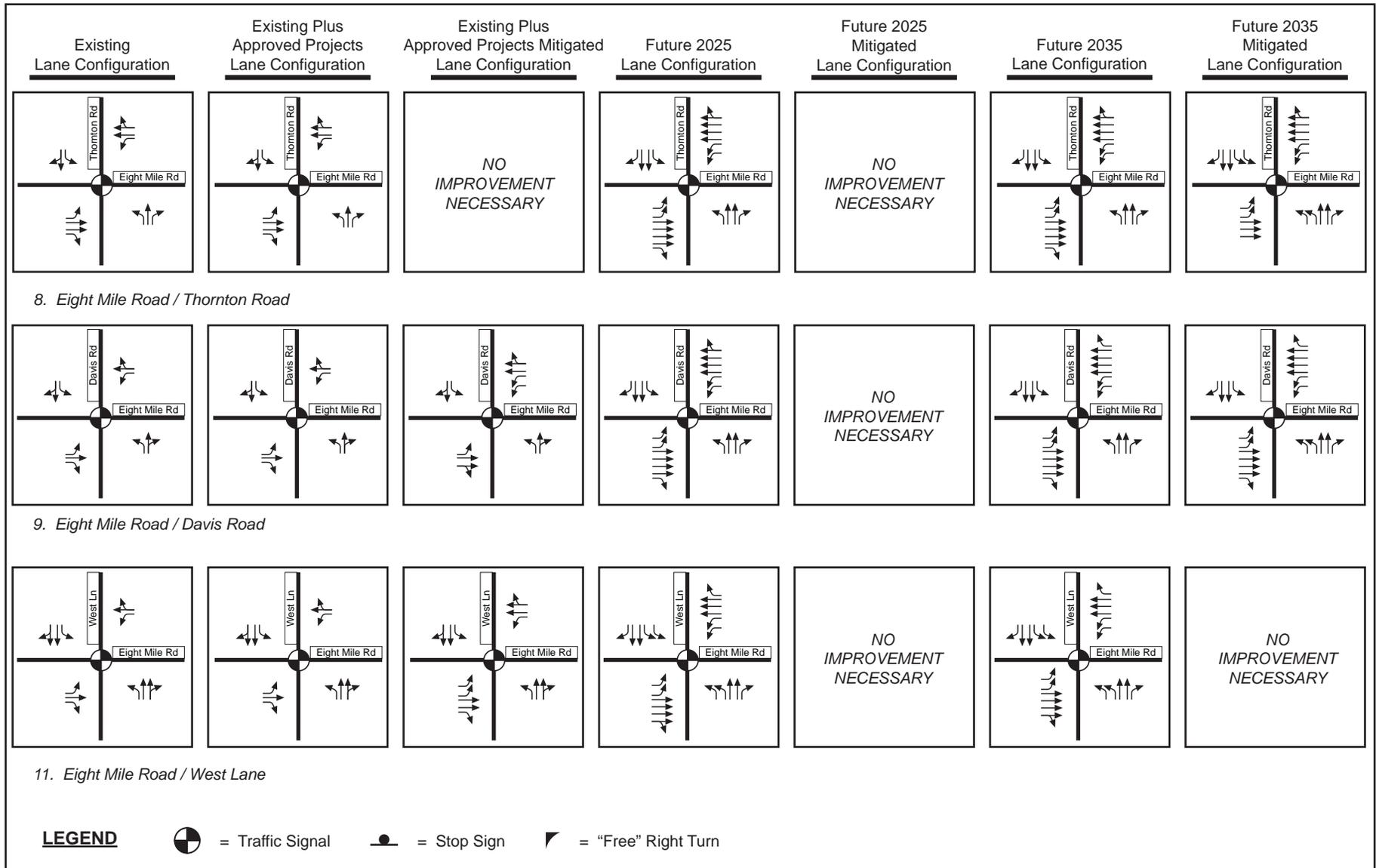
LSA

Figure 4.7.19.A



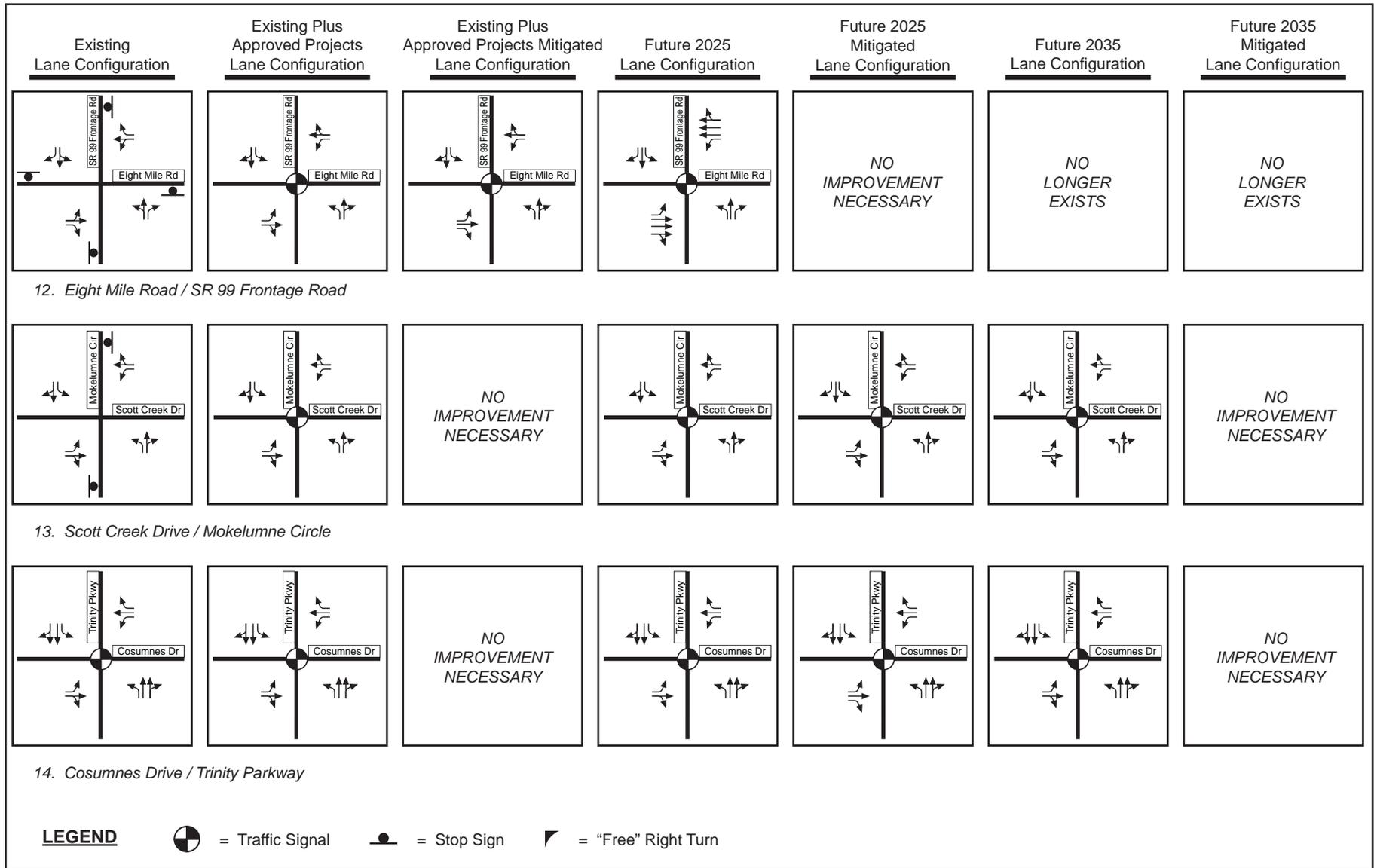
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Figure 4.7.19.B



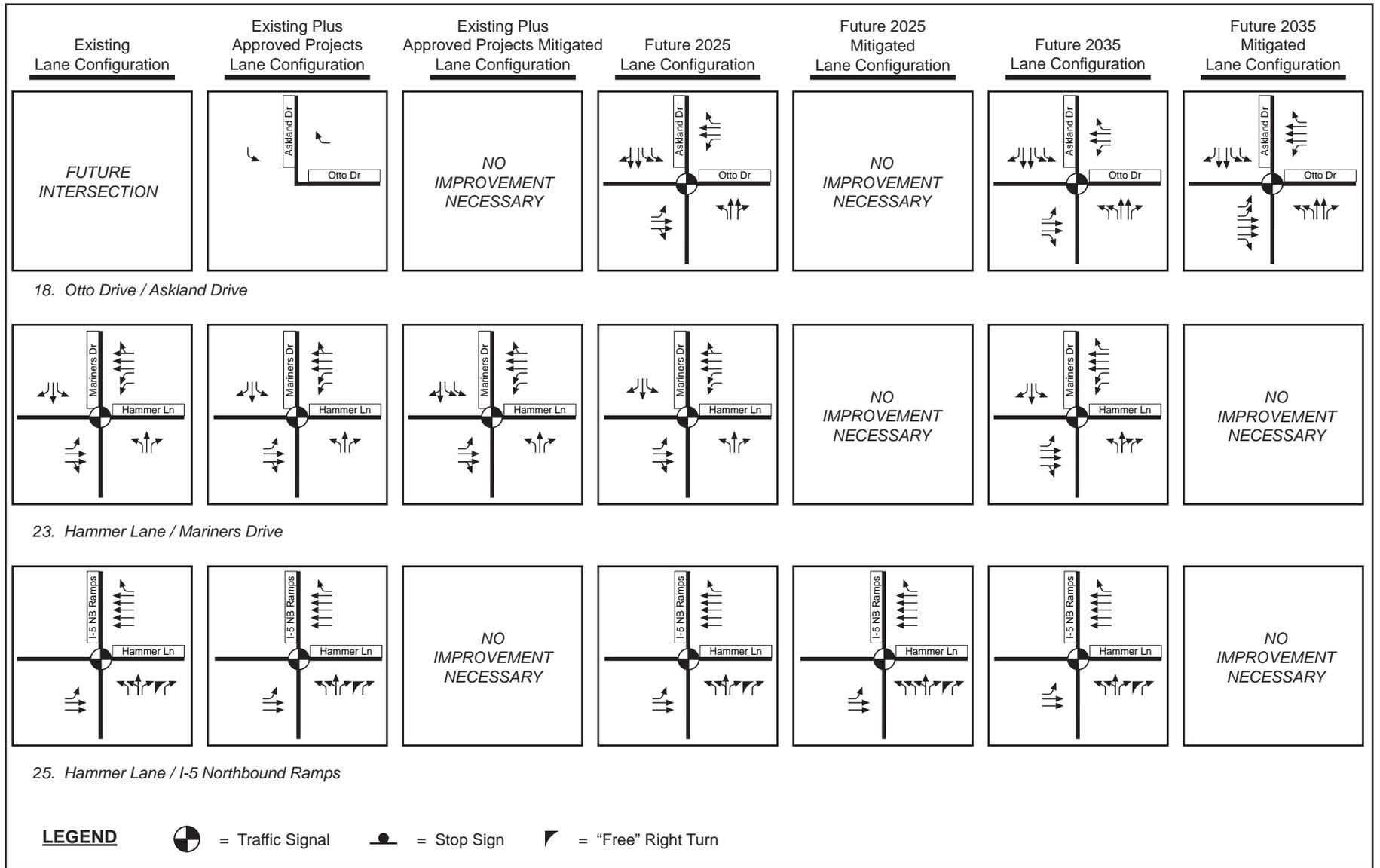
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Figure 4.7.19.C



LSA

Figure 4.7.19.D



LSA

Figure 4.7.19.E

Site Access, Circulation, And Parking

This section evaluates project site access, on-site circulation, and parking. As shown on Figure 4.7.20, access to the project site is proposed from Eight Mile Road and Scott Creek Drive, connecting to the neighboring Westlake at Park West Place development. Table 4.7.C.1 presents operations of the project driveway intersection with Eight Mile Road under various combinations of traffic volumes and roadway geometrics. This intersection would operate at LOS C or better under Existing plus Approved Projects plus Project and Future (2025 and 2035) with project conditions with signalization and the stated lane geometrics.

Table 4.7.C.1: Eight Mile Road/Project Driveway Intersection Analysis

SCENARIOS	PEAK HOUR	DELAY ¹	LOS	GEOMETRICS
Existing Plus Approved Projects With Project	AM PM	15 23	B C	Northbound – left-turn lane and right-turn lane Eastbound – shared through/right-turn lane Westbound – left-turn lane and through lane
Future 2025 With Project	AM PM	15 18	B B	Northbound – left-turn lane and right-turn lane Eastbound – shared through/right-turn lane Westbound – left-turn lane and through lane
Future 2035 With Project	AM PM	12 18	B B	Northbound – left-turn lane and right-turn lane Eastbound – through lane and shared through/right-turn lane Westbound – two left-turn lanes and two through lanes

Source: Fehr & Peers, 2007.

¹Signalized intersection average control delay (in seconds per vehicle) and LOS calculated using the 2000 Highway Capacity

Manual (Transportation Research Board) method.

Fehr & Peers assisted David Evans and Associates Inc. in development of the site plan to incorporate traffic calming elements and to provide for alternative mode circulation.

Projected internal intersection volumes were used in conjunction with the City of Stockton’s Traffic Calming Guidelines, November 2003 to identify appropriate design and traffic control for key roadways and intersections within Crystal Bay. Items specifically considered in this review include: roadway design (travel lane width, parking lanes, and block length), intersection traffic controls, pedestrian/vehicle conflict areas, and alternative mode access (pedestrians, bicycles and transit).

Roadway Design: Roadway design elements were reviewed to ensure the provision of appropriate lane widths, parking lanes and block lengths. As detailed in the Traffic Calming Guidelines, the appropriate



LSA

Figure 4.7.20

Crystal Bay EIR

lane width on a residential street is 10 feet with on-street parking, with residential block lengths of no more than 600 feet. Typical residential streets within Crystal Bay are planned to include sidewalks, 7- to 8-foot parking lane and a 9- to 10-foot travel lane in each direction. Generally, block lengths within the residential neighborhoods of Crystal Bay are 600 feet or less. Where block lengths exceed 600-feet, mid-block chokers are proposed for installation, as shown on Figure 4.7.20.

Seven street cross-section types are proposed within Crystal Bay, as discussed below.

- **Low Volume Residential (public road)** – this roadway type would be provided within the single-family home neighborhoods, providing a 4-foot sidewalk, 6-foot planting strip, 7-foot parking lane and 8-foot travel lane on both sides of the street, resulting in a 50-foot roadway cross section. For blocks greater than 600-feet in length, mid-block chokers are proposed. This cross-section is consistent with the design criteria outlined in the traffic calming guidelines.
- **Neighborhood Road (private road)** – This roadway type would be located within the courtyard home neighborhoods, providing a 5-foot sidewalk, 7-foot parking lane and 8-foot travel lane on both sides of the street, resulting in a 40-foot roadway cross section. This cross-section is consistent with the design criteria outlined in the traffic calming guidelines.
- **Courtyard Perimeter Road (private road)** – This roadway type would be located within the courtyard home neighborhood, providing a 4-foot sidewalk and 6-foot planting strip on one side of the street, 15-foot travel lane on both sides of the street, and a 5-foot sidewalk on one side of the street resulting in a 45-foot roadway cross section. The proposed lane width exceeds the maximum recommend lane width in the traffic calming guidelines. The lane width should be reduced to at least 12 feet, preferably 10 feet, or parking should be permitted on this roadway.
- **Collector Street (Scott Creek Drive – public road)** – This roadway type would be provided on Scott Creek Drive, providing a 8-foot multi-use path and 13-foot planting strip on both sides of the street. Two 13-foot travel lanes would be provided with an 8-foot parking lane on one side of the street, resulting in a 76-foot roadway cross-section.
- **Minor Arterial Street (Eight Mile Road west of Street 1 – public road)** - This roadway type would be provided on the south side of Eight Mile Road between Rio Blanco Road and Street 1. An 8-foot sidewalk within a 15-foot planting strip, 13-foot travel lane, and 7-foot median would be provided. The north side of the street would remain unimproved until the property north of Eight Mile Road is developed. Typically, parking lanes are not provided on arterial roadways. This roadway cross-section should be redesigned to eliminate on-street parking on Eight Mile Road.
- **Minor Arterial Street (Eight Mile Road east of Street 1 – public road)** - This roadway type would be provided on the south side of Eight Mile Road between Street 1 and the entrance to Westlake at Park West Place. An 8-foot sidewalk within a 15-foot planting strip, 11-foot travel lane, 12-foot travel lane and 7-foot median would be provided, within a 96 foot cross-section.
- **Minor Arterial Street (Street 1 – public road)** – This roadway type would be provided on Street 1 between Eight Mile Road and Rio Blanco Road. An 8-foot multiuse path, 7-foot planting strip, 11-foot travel lane, 12-foot travel lane and 7-foot median would be provided

on each side of the street, for a total cross-section width of 96 feet. Pedestrian crossing treatments are proposed along the roadway to facilitate pedestrian movements through the side. Upon completion of Street 1, Rio Blanco Road would be gated between Eight Mile Road and Street 1, and restricted to farm vehicles only. All existing traffic to the Marina would be rerouted through Crystal Bay on Street 1.

South of Scott Creek Road, the traffic volumes on Street 1 do not warrant the provision of two travel lanes per direction. This roadway should be designed to provide one travel lane per direction without on-street parking. At its intersection with Rio Blanco Road, the appropriate turn radius should be provided to permit the turning movements of large vehicles that may be towing boats or recreational vehicles to the Marina.

Potential To Conflict With Adopted Policies, Plans Or Programs

Impact TRAF-10: Based on the proposed roadway cross-sections, the proposed project has the potential to conflict with the City of Stockton's Traffic calming Guidelines. This is a potentially significant impact.

The proposed Courtyard perimeter road would provide two 15-foot travel lanes, which exceed the recommend lane width of 8 to 10 feet for residential roadways.

Mitigation Measure TRAF-10: redesign this roadway to reduce the lane width to an acceptable level, or allow for parking. Implementation of this measure would reduce this impact to a less-than-significant level.

Intersection Traffic Controls: Excluding stop-signs, three intersection control types were reviewed for installation at Crystal Bay: traffic signals, roundabouts, and traffic circles. The primary function of traffic signals is to allocate right-of-way, while roundabouts and traffic circles can be used as traffic calming devices. The proposed locations of internal intersection traffic controls are shown on Figure 4.7.20 and, discussed below:

- **Eight Mile Road/Street 1** – This intersection is proposed as the primary entrance to Crystal Bay Villages and signalization is recommended based on projected traffic volumes. With the proposed vacation of Rio Blanco Road between Eight Mile Road and Street 1 (except for farm vehicles), access to the Marina would be provided through this intersection. Crosswalks and pedestrian signal actuation should be installed on all legs.
- **Scott Creek Drive/Street 1** – Primary access to the courtyard homes and single family home neighborhoods would be provided through this intersection. Traffic volumes and conflicts through these intersections warrant the need for intersection traffic control. Traffic signals were considered for this location, although they are not warranted based on projected traffic volumes. The intersection would operate acceptably with all-way stop-control or roundabout control, as presented in Table 4.7.D.1. It is recommended that a one lane roundabout be constructed at this location. The north leg of the round about would have two travel lanes per direction, while the remaining legs would provide one travel lane per

direction. One circulating lane would be provided through the roundabout, with a right-turn only lane on the southbound approach serving the cluster homes/apartments.

Table 4.7.D.1: Future 2035 With Project Internal Intersection Analysis

INTERSECTION	PEAK HOUR	FUTURE 2035 WITH PROJECT WITH ROUNDABOUT CONTROL		FUTURE 2035 WITH PROJECT WITH ALL-WAY STOP CONTROL	
		DELAY ¹	LOS	DELAY ²	LOS
Scott Creek Drive/Street 1	AM	4	A	12	B
	PM	3	A	13	B

Source: Fehr & Peers, 2007.

¹ Roundabout average delay (in seconds per vehicle) and LOS calculated using the FHWA method.

² Side-street stop-controlled intersections level of service is based on average delay per vehicle (in seconds) according to the Highway Capacity Manual (Transportation Research Board, 2000). The worse case stop-controlled movement delays are presented in parenthesis.

Five traffic circles and five mid-block chokers are proposed for installation within the project site, as shown on Figure 4.7.20. These locations were selected to moderate traffic flow and speeds within the development. In addition, chokers increase pedestrian safety by decreasing the required crossing distance, while slowing vehicle traffic on residential streets.

Pedestrian/Vehicle Conflict Areas: Areas of potential vehicle/pedestrian conflict, such as near the recreation area, was reviewed to determine the location of special pedestrian treatments. Incorporation of pedestrian crossings at roadway intersections allocates right-of-way between vehicles and pedestrians. Special pedestrian treatments, such as high visibility crosswalks, are proposed across Street 1, connecting the cluster home neighborhood to the neighborhoods in the east and the proposed park. Crosswalks are also proposed at the roundabout at Scott Creek Drive/Street 1 and at the main entry on Eight Mile Road. Crosswalks should also be incorporated into the traffic circles proposed on Scott Creek Drive. High visibility crosswalk treatments can consist of raised or textured pavement, in pavement lights, high visibility paint, and curb extensions.

Alternative Mode Access: Potential transit stop locations are shown on Figure 4.7.20. As detailed in the Traffic Calming Guidelines, the San Joaquin Regional Transit District (SJRTD) should review project site plans and identify potential bus stop locations. These locations should take into consideration potential bus stop within the neighboring Westlake at Spanos Park West to minimize excessive circulation about the neighborhoods.

Sidewalks are proposed along all roadways in the project site, with high visibility crosswalks proposed at two locations. No pedestrian connections are proposed connecting Crystal Bay to the neighboring Westlake at Spanos Park West, except along Scott Creek Drive and Eight Mile Road. The provision of pedestrian connections would encourage walking for short trips within neighborhoods, such as to the park, as the walk route is more direct than the drive route.

A shared 8-foot pedestrian/bicycle path is proposed on Street 1 and Scott Creek Drive. These paths will connect to the other bicycle facilities in the area. To minimize conflicts between bicyclists and pedestrians, the following is recommended:

- Incorporate multi-use path design features consistent with the latest edition of the Caltrans Highway Design Manual. Install traffic controls and signing consistent with the latest edition of the Manual of Uniform Control Devices.
- Designate the path as a multi-use facility and provide a recommended 10-foot wide (8-foot minimum) paved path with a 2-foot graded area on either side.

Potential For Inadequate Parking Supply

Parking space requirements are outlined in the Stockton Municipal Code – Chapter 16 Development Code (August 2004). Table 4.7.E.1 shows the parking requirements for the proposed project based on the Municipal Code.

Impact TRAF-11: *The project site plan does not provide sufficient detail to evaluate parking plans for the proposed project. This is considered a significant impact.*

Mitigation Measures TRAF-11: The project applicant shall provide adequate parking as required by City of Stockton Zoning Code prior to the approval of the site plan for each use within the project area. Implementation of this measure would reduce the impact to a *less-than-significant* level.

Table 4.7.E.1: Required Parking

LAND USE	SIZE	CODE PARKING REQUIREMENT ¹	REQUIRED PARKING
Single Family	963 dwelling unit	2 spaces per house (both enclosed in a garage)	1,926
Multi-Family (Apartment)	392 dwelling unit	1 ½ spaces per unit (with 1 covered space per unit) plus 0.25 spaces per unit for guest	686
Total Required Parking			2,612

Source: Fehr & Peers, 2007.

¹Based on Stockton Municipal Code – Chapter 16 Development Code, August 2004.

4.8 HOUSING/POPULATION/SOCIOECONOMICS

The following sections utilize data from the U.S. Census (Census), the San Joaquin Council of Governments (SJCOG), California Department of Finance (DOF), and the City of Stockton General Plan 2003 Housing Element.

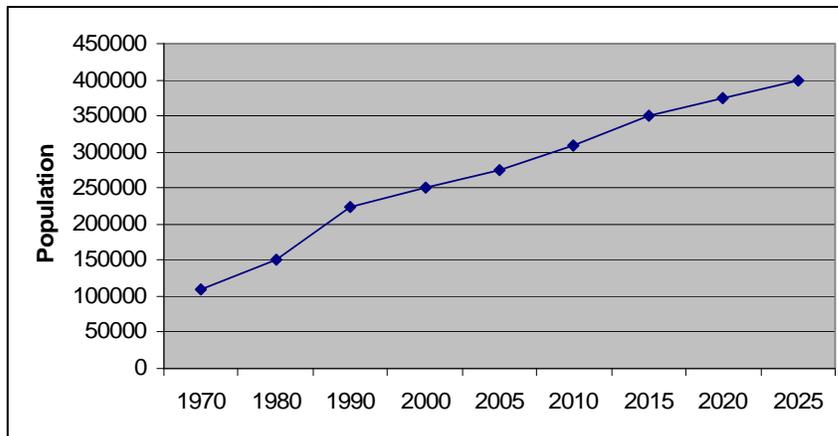
4.8.1 Existing Setting

Population

Stockton is the largest city in San Joaquin County. Located in the northern San Joaquin Valley, San Joaquin County is located immediately east of the San Francisco Bay Area counties of Alameda and Contra Costa. The City of Stockton and San Joaquin County have experienced substantial population growth driven by new immigrants to the United States and by Bay Area commuters seeking lower housing prices in San Joaquin County. Incorporated in 1850, Stockton has experienced increased population growth in the last 50 years, as shown in Table 4.8.A. The most rapid population growth occurred between 1980 and 1990, with an average population increase of 4 percent per year during this decade. The recent Stockton General Plan Housing Element (2003) determined that Stockton grew from 210,943 in 1990 to 261,253 in 2003, a 23.4 percent increase during the time period 1990 to 2003. The average annual growth rate for this time period was approximately 2 percent per year. San Joaquin County grew at a slightly faster rate of 27.6 percent for the time period 1990 to 2003.

In 2003, Stockton had 85,988 households, an 18.6 percent increase from 1990, while the average household size increased from 3.00 in 1990 to 3.11 in 2003. Stockton's average household size is slightly higher than those for the state and County, which were 2.93 and 3.08 in 2003, respectively.

Table 4.8.A: Historic Population Trend for Stockton (1860-2000)



Source: San Joaquin Council of Governments

The majority of Stockton's population has shifted from the southern areas of the city to the north side of town. From 1960 to 1990, northern Stockton has experienced the largest increase in percentage of the City's population, while the downtown and areas south of the Calaveras River have seen a

constant decrease in the percent of city's population they contain.¹⁸ The southern sub areas of Stockton and the downtown have historically had the highest percentages of minority populations (hispanic, asian, and black).¹

SJCOG projects that the population in Stockton will grow 25 percent between 2000 and 2010, approximately 2.5 percent per year. After 2010, the population growth rate is projected to be slightly lower at 2.0 percent per year until 2015, 1.9 percent per year until 2020 and 1.7 percent per year until 2025, as shown in Table 4.8.B. Population growth in Stockton is expected to increase at a rate slightly higher than the rest of San Joaquin County until 2020.

Table 4.8.B: Projected Population Growth (2000-2025)

Area	2000	2005	2010	2015	2020	2025
Stockton*	247,400	279,216	311,033	342,849	374,631	406,482
San Joaquin County	566,600	633,348	700,095	766,843	821,851	900,338

Source: San Joaquin Council of Governments (SJCOG)

*SJCOG population data is different than U.S. Census data due to slight differences in geographic coverage

The project site lies at the northern edge of the existing urbanized area and is currently open agricultural land. There is no residential population on the project site.

Housing

In 2000, the City of Stockton contained 82,125 housing units. The City of Stockton reported an average household size of 3.11 in 2003. Occupancy rates in existing housing units within Stockton were at 95.6 percent with vacancy rates of 4.4 percent. The majority of occupied housing units in Stockton were detached single family homes (60.7 percent) and 29.7 percent of the occupied housing stock consisted of multifamily units, as shown in Table 4.8.C. Attached single family homes constituted 8.0 percent of the occupied housing stock, followed by mobile homes (1.5 percent) and boats, RVs and vans (0.1 percent).

The median home value for an owner occupied house in Stockton was \$119,500 in 2000, according to the Census. Although home price sales have increased dramatically in the Stockton, the median price of homes sold in Stockton is still below the median price of housing in the state. In 2001, the average annual home sales price in Stockton was \$172,274, and increased to \$200,401 in 2002 and \$267,311 in 2003. This represents a 55.2 percent increase in home sales prices from 2001 to 2003.

¹⁸ City of Stockton, 1990. *General Plan General Plan, Background Report*. Adopted January 22, 1990.

The project lies on the fringe of existing urban areas and is currently open agricultural land. There are no households on the project site.

Table 4.8.C: Housing Stock by Type and Vacancy for Stockton, 2000.

	City of Stockton	
	Number	Percent
Total Housing Units	82,125	100%
Occupied Units	78,522	95.6%
Vacant Units	3,603	4.4%
Occupied Units Housing Type	78,522	100%
Single Family		
Detached	47,696	60.7%
Attached	6,288	8.0%
Multifamily		
2 to 4 units	7,838	10.0%
5 plus units	15,483	19.7%
Mobile Homes	1,163	1.5%
Boats, RVs, Vans	54	0.1%

Source: City of Stockton, *General Plan 2003 Housing Element*.

Employment

In 2000, the Census reported there were 89,165 people in the employed civilian workforce and that the median household income was \$35,453 within the City of Stockton. SJCOG expects employment in Stockton to grow at a rate similar to the rest of San Joaquin County, as shown in Table 4.8.D.

Within the Stockton-Lodi Metropolitan Statistical Area, the most significant decline has been in the manufacturing sector, in which the percentage of total employment dropped from over 14 percent in 1990 to 12 percent in 2000 and 10 percent in 2002. The construction, professional and business, transportation, retail, and education sectors have seen increases in the percentage of total employment in the time period between 1990 and 2003. In the City of Stockton, education, health and social services are the largest employment sectors, followed by retail trade and manufacturing.

As of July 2003, Stockton's unemployment rate was 12 percent, slightly higher than San Joaquin County's unemployment rate of 10.2 percent and much higher than the State of California's unemployment rate of 6.6 percent. San Joaquin County is one of California's leading counties for farm products and Stockton's relatively high unemployment rate can be attributed to seasonal variations in agriculturally oriented employment. As of 1999, 24 percent of Stockton's residents lived at or below the poverty level.

Table 4.8.D: Projected Employment Growth (2000-2025)

Year	City of Stockton		San Joaquin County	
	Projected Jobs	Average Annual Increase (%)	Projected Jobs	Average Annual Increase (%)
2000	88,133	NA	201,671	NA
2005	95,291	1.6 %	218,051	1.6%
2010	102,449	1.5%	234,430	1.5%
2015	109,607	1.4%	250,810	1.4%
2020	116,765	1.3%	267,189	1.3%
2025	123,923	1.2%	283,569	1.2%

Source: SJCOG

*SJCOG population data is different than U.S. Census data due to slight differences in geographic coverage

Jobs/Housing Balance

In 2001, the jobs to household ratio were 1.07, reflecting slightly more jobs than housing in the City of Stockton. This is expected to become more balanced as households increase by 17.6% by the year 2008, while jobs increase at a slightly lower rate, 11.2 percent for the same time period. It is expected that the jobs to household ratio will be at 1.01 by 2008, reflecting a balance between jobs and housing within Stockton.

4.8.2 Significance Criteria

The project would have a significant impact on the environment related to population, employment and housing if it would:

HPS-a Result in substantial population growth;

HPS-b Substantially conflict with housing/population projections and policies in the General Plan;

HPS-c Conflict with Stockton's affordable housing policies and objectives;

HPS-d Conflict with Stockton's job/housing balance policies and objectives;

HPS-e Negatively affect the existing supply of housing or create a demand for additional housing;
and

HPS-f Divide or disrupt the physical arrangement of an established community.

4.8.3 Impacts And Mitigation Measures

Less-than-Significant Impacts.

Impact HPS-1: Development of the project site is not expected to conflict with housing/population projections and policies in the General Plan (Significance Criterion HPS-b).

The Stockton *General Plan 2003 Housing Element* projects an increase of 14,625 households in the time period from 2001 to 2008. The proposed project would increase housing units in Stockton by $\pm 1,363$, which would constitute approximately 9 percent of the total projected household growth in Stockton during the time period from 2001 to 2008. Since the proposed project would be within the City of Stockton's projected household growth, the proposed project would not substantially conflict with the housing/population projections and policies in the General Plan.

Impact HPS-2: Development of the project site may conflict with Stockton's affordable housing policies and objectives (Significance Criterion HPS-c).

The project site currently contains no housing units. The proposed project would increase housing units in Stockton by $\pm 1,363$ units. The proposed project provides a variety of housing densities and would not directly conflict with Stockton's affordable housing policies and objectives. The proposed project does not include specific provisions for affordable housing units, but should indirectly improve housing affordability in Stockton by increasing the supply of housing available.

Impact HPS-3: Development of the project site may conflict with Stockton's job/housing balance policies and objectives (Significance Criterion HPS-d).

The project site currently has no housing units and is used for agricultural purposes. The proposed project would increase the housing units in Stockton by $\pm 1,363$ units. This would change the jobs to housing ratio from 1.07 to 1.05, an improvement in the jobs to housing ratio in Stockton.

Impact HPS-4: Development of the project site may negatively affect the existing supply of housing or create a demand for additional housing (Significance Criterion HPS-e).

The project site currently has no housing units. The proposed project would provide approximately 1,363 new housing units. The proposed project would not negatively affect the existing supply of housing or create demand for additional housing, instead the proposed project would positively impact the supply of housing in Stockton.

Impact HPS-5: Development of the project site may divide or disrupt the physical arrangement of an established community (Significance Criterion HPS-f).

The proposed project site is currently open agricultural land on the northwestern edge of urbanized residential areas of Stockton. The site will be surrounded on the east and south by the approved Westlake Villages and is currently bordered by agricultural uses to the west (beyond Bishop Cut) and agricultural uses to the north (beyond Eight-Mile Road). The proposed project would involve the development of $\pm 1,363$ residential units on open agricultural land adjacent to existing residential

areas. The proposed project would not divide or disrupt the physical arrangement of an established community.

Potentially Significant Impacts

Impact HPS-6: Development of the project site may result in substantial population growth (Significance Criterion HPS-a)

The proposed project would add approximately 4,000 individuals to the City of Stockton population. Based on a 2003 population of 261,253, the proposed project would increase the City's population to 265,253. This constitutes an approximate 2 percent increase in the City's population. This represents a significant population growth since this area was not considered in planning projections of 2-4% growth rates. In light of these findings, the project may result in a substantial population growth.

This impact is significant and unavoidable. No feasible mitigation exists to offset this impact.

4.8.4 Level of Significance after Mitigation

The proposed project results in the above significant and unavoidable impact to population and housing. The project will generate a substantial and unanticipated population that has not been considered in planning efforts. Mitigation is not available to offset this impact.

4.9 PUBLIC SERVICES

The following subsections briefly describe the existing public services within the City of Stockton relating to the proposed project.

4.9.1 Existing Setting

City Neighborhood and Community Parks. The nearest neighborhood and community parks to the project site are the Garrigan, Sandman, Laughlin and Corren parks. A 12 acre community park will also be provided in the Westlake Villages development, within ½ mile of the proposed project. The City of Stockton defines neighborhood parks as smaller (5 to 10 acres) local parks and community parks as medium sized parks (10 to 30 acres) which serve larger areas. All of these parks are located on the other side of the I-5 freeway to the east of the project site. The closest neighborhood park to the project site is Garrigan Park, which is accessible by the Bear Creek bike path and is within 1 mile east of the boundary of the project site. The closest Community Park to the project site is Sandman Park, approximately 1 ½ miles southeast of the project site.

The City of Stockton has adopted standards for the amount of parks needed per 1,000 residents, as shown in Table 4.9.A. Based on the criteria established by the City of Stockton, it is possible to determine the current demand for park services for the entire City of Stockton in accordance with the parkland standard. According to the *Stockton General Plan Housing Element (2003)*, the City's population in 2003 was 261,253, which translates into a demand for 783.8 acres of neighborhood and community parks. When compared with the existing amount of parkland (636 acres), there is currently an overall deficiency of 147.8 acres of neighborhood and community parks in Stockton.

Table 4.9.A: City of Stockton Park Standards

Type of Park	Acres/1,000 Residents	Acres/Park	Service Radius
Neighborhood Park	2	5	Up to ½ mile
Community Park	3	15	Up to 1 mile
Regional Park	3	30+	Region-wide

Source: City of Stockton, 2005

Regional Parks. The Oak Grove Regional Park is located approximately 1 mile northeast of the project site. Based on the parkland standard, there is currently a deficit of 1,305 acres of regional parkland for the City of Stockton, as shown in Table 4.9.B. It should be noted that no regional parks are located within the City of Stockton.

Table 4.9.B: Regional Park Facilities and Regional Park Standard Comparison

Park	Acreage
Micke Grove	258
Oak Grove	180
Regional Sports Center	70
Total Acreage	508
Needed Acreage per Parkland Standard	1,828
Regional Park Shortfall	1,320

Source: San Joaquin County, Parks and Recreation Department, 2003.

Community Centers. Five community centers operate within the City of Stockton: McKinley, Seifert, Sierra Vista, Stribley and Van Buskirk. The City of Stockton *General Plan* has established standards for community centers, as shown in Table 4.9.C. The Seifert Community Center is owned by the Stockton Unified School District and the Sierra Vista Community Center is owned by the Sierra Vista Housing Authority and is currently staffed in partnership with the Stockton Boys and Girls Club. The City would currently require four more community centers to meet the one center per 30,000 residents *General Plan* standard. However, the City's *General Plan* provides policies to consider schools as community centers, thereby alleviating the deficiency in community centers.

Table 4.9.C: Community Center Standards

City-owned community centers	One center/50,000 population
Combined City-owned, school district, and housing authority	One center/20,000 population
Combined City-owned, school district, and housing authority	½ square foot per resident
Minimum to preferred size per center	10,000 to 15,000 square feet for multi-purpose centers.
Service Radius	1½ miles

Source: City of Stockton *General Plan*, adopted 1990 and amended 1996.

Bikeways. In May 1995, the City adopted the Bikeways Facilities Master Plan (Bikeway Plan). The Bikeway Plan was amended in January, 1999. The Bikeway Plan defines a classification system for bikeways, describes a proposed bikeway system, recommends policies for promoting bicycling and maintaining the City's bikeways and presents a set of short-term (three-to five-year) implementation projects. An existing Class I bikeway (12-foot width) runs from the Westlake development along Bear Creek and under the I-5 freeway, immediately east of the project site.

Solid Waste/Landfill

The City of Stockton Public Works Department is responsible for the planning and administration of the solid waste management plans for the City. In the City, a majority of solid waste disposal is by means of landfill with material recovery accounting for the rest. As mandated by law, the City complies with the requirements outlined in the California Solid Waste Reuse and Recycling Access Act (PRC 42900 through 42911). The Forward, North County, and Foothill Landfills are the City of Stockton's main landfills. The Forward Landfill receives 85% of the City's waste and is owned and operated by Allied Waste North America. The remaining 15% is sent to the North County and Foothill Landfills which are County owned facilities (Miller, 2003). The Forward Landfill is a Class I, II, and III facility that accepts municipal, construction, agricultural, and industrial wastes, including asbestos, contaminated soils, and biosolids (CIWMB, 2003).

Fire Protection Services

The City of Stockton Fire Department is responsible for fire protection services, water rescues, technical rescues (e.g., building collapse rescues), and response to hazardous materials spills within the City. It also provides emergency medical services, although American Medical Response, a private company, provides transport services. The current firefighting staff size of the Fire Department is 269 (City of Stockton, 2007), and the standard structure fire response time is 3-4 minutes.

Police Protection Services

The City of Stockton Police Department provides protection to the community. The Police Department has centralized offices at 22 East Market Street in the downtown area of the City. There are approximately 428 sworn officers and 223 additional staff working for the Police Department (City of Stockton, 2007). The Police Department has a master plan that estimates future staffing needs to lower crime rates and meet response time standards.

The proposed project would fall under the Police Department's Lakeview District geographical borders, generally to the north at Hammer Lane, South at March Lane, east at the Union Pacific Railroad, and west to the city limits. There are currently seven districts comprising the Police Department.

Schools

The project site is located within the Lodi Unified School District (LUSD). The LUSD is responsible for providing public education to area residents at the elementary, middle, and high school levels. In light of the current vacant condition associated with the project site, there are no students being generated by the project site. An elementary school is planned for the adjacent Westlake Villages development.

The applicant has had preliminary contact with the LUSD. It is expected that the students generated from the Crystal Bay project would be served by the proposed Westlake Village's elementary school, and Manlio Silva elementary school. Project related middle school-aged and high school-aged

students will attend Christa McAuliffe Middle school, and Bear Creek High School (City of Stockton, 2005). Current enrollments are presented in Table 4.9.D.

Table 4.9.D: Current Enrollments

SCHOOL	CURRENT ENROLLMENT	TOTAL CAPACITY
Manlio Silva Elementary School	670	800
Christa McAuliffe Middle School	920	900
Bear Creek High School	2,200	2,100

Source: Lodi Unified School District, 2007

Library

The Stockton-San Joaquin Public Library Department is operated by Stockton as a City department but is funded jointly by the City and County. The library system serves the entire County with the exception of the City of Lodi, which has its own system.

The library closest to the project site is the Troke Branch at 502 Benjamin Holt Drive, located approximately 8.0 miles south of the project site. The Thornton Branch is located in Thornton, approximately 15 miles north of the project area and is a County Library that serves the unincorporated areas of the County (a population of approximately 10,000 people). The Stockton-San Joaquin County annual library attendance for 2003, was approximately 1,225,000 people.

The Library Department is planning a new branch library to be located at Morada Lane and West Lane, adjacent to the proposed Lodi High School development. This library is intended to serve the northeast Stockton area and would be approximately 7.0 miles southeast of the project area. Currently, there is no northwest branch site planned. Any branch library for the northwest area of Stockton would be based on future need (Stanke, 2003).

Vector Control

This section outlines the design features employed by PACE to eliminate areas in manmade lakes suitable for mosquito reproduction. Design features intended to remove mosquito habitats are integrated into all manmade lakes and water features designed by PACE, effectively preventing mosquitoes from reproducing.

In addition to lake design features, a description of common California mosquito species and mosquito breeding biology are included to help the reader understand how these design features prevent mosquito reproduction. Many of these standards have been successfully used in manmade lakes for many years.

In addition to mosquitoes, a few other types of insects can occasionally generate complaints associated with manmade lakes. These include midges, crane flies, and similar insects that may be mistaken for mosquitoes but do not bite humans. A discussion of several of the more common aquatic insects is also included.

Mosquitoes of California

At least 53 species of mosquitoes occur in California, and all share several important characteristics that affect their ability to breed in a manmade lake. All mosquitoes require standing water in which their larvae and pupae (the immature, aquatic life stages of mosquitoes) can grow. Each species prefers a specific type of water body, and many of the most common and problematic mosquito species do not breed in lakes, but rather seek out small, isolated, stagnant pools of water.

The Encephalitis Mosquito *Culex tarsalis* is among the most common mosquitoes in California and the primary vector for several diseases, including West Nile Virus. This mosquito breeds primarily in newly-created, shallow, vegetated pools; permanent pools of water with fixed depth rarely support abundant populations of this mosquito.

The Southern House Mosquito (*Culex quinquefasciatus*), and in northern California the Northern House Mosquito (*Culex pipiens*) are common mosquitoes generally associated with urbanized areas. These species breed primarily in highly polluted, small bodies of water including trashcans, tin cans, and storm drains, particularly where untreated sewage leaks into storm drains.

The Fish Pond Mosquito (*Culiseta incidens*) is found in a wide variety of aquatic habitats throughout the western US.

The Foul Water Mosquito (*Culex stigmatosoma*) commonly breeds in standing, polluted waters such as sewage, street drainage, and water in containers, and is found in most California counties.

The Western Malaria Mosquito *Anopheles fremontii* is the primary vector of malaria in the western US, and breeds in a wide variety of aquatic habitats. This mosquito is also known as the Rice Mosquito because it often breeds in flooded rice fields. This mosquito is common in the Central Valley of California and is found throughout much of the state.

The Western Treehole Mosquito (*Aedes sierrensis*) is a common pest in wooded residential areas and woodlands. This mosquito is the primary vector for dog heartworm disease and is found throughout the state of California. Western Treehole Mosquitoes breed primarily in holes in trees but may use other breeding sites that contain damp leaf material such as gutters or containers. Eggs of this mosquito are often laid in a damp cavity and do not hatch until the cavity is flooded by winter rains.

There are many other species of mosquito found in California, but many of these rarely cause significant problems for humans. Not all mosquito species will bite humans.

Mosquito Breeding Biology

As indicated in the mosquito species accounts, all species of mosquito require standing water in which to breed and several species might be inclined to lay their eggs in a manmade lake if proper conditions were allowed to develop in the lake. However, the mosquito species that cause problems for humans require conditions that are not typically found in a properly designed and maintained manmade lake, including water that is protected from mosquito predators, nutrient-rich water, and calm water surface conditions. Mosquito larvae and pupae have few defenses against natural predators and survive primarily in places that support few predators. Standing water of reasonable quality can support a wide variety of organisms that prey on mosquito larvae to the extent that few larvae will survive to adulthood. These organisms include the larvae of insects such as dragonflies, aquatic insects such as diving beetles, and fish such as the Mosquitofish (*Gambusia affinis*).

Mosquito larvae and pupae swim poorly and must spend much of their time at the water surface, so most species prefer calm, quiescent conditions. Calm conditions are typically associated with small water bodies with little opportunity for the wind to create surface waves. Shallow, temporary water sources are ideal for mosquito reproduction and are the places where most mosquito larvae are found. Such places include seasonal puddles, containers that collect rainwater, storm drains, and locations where irrigation overflows. Natural locations for mosquito breeding such as seasonal ponds, tree cavities, and springs or seeps similarly support temporary, shallow standing water.

Most problem mosquito species prefer nutrient-rich water for egg laying; the growth of mosquito larvae is faster in nutrient-rich waters. Several species prefer to breed in extremely nutrient-rich locations such as sewage spills, septic tanks, and manure lagoons, but others prefer waters that are nutrient-rich to a lesser degree. Seasonal puddles, containers that capture rainwater, and poorly maintained pools or ornamental ponds can all contain water that is high in nutrients and suitable for mosquito breeding. Properly designed and maintained lakes and water features generally have water that is very low in nutrients.

Manmade lakes and water features typically support abundant populations of fish and other mosquito predators. Most lakes are exposed to winds that create persistent surface ripples. In many smaller water features, pumps actively circulate the water eliminating the calm conditions preferred by mosquitoes.

Design Features that Prevent Mosquito Breeding

All lakes, wetlands, streams, stormwater BMPs, and water features designed by PACE include design features that are specifically targeted at eliminating mosquito habitat and preventing mosquito breeding. Portions of the lake designed to prevent mosquito reproduction include lake edges, shallow vegetated areas, and storm drain inlets. The maintenance of excellent water quality and a fixed water level also help control mosquitoes throughout the lake.

All lake edges are designed to limit the extent of very shallow water by creating a shoreline sloped at approximately 1:1 (horizontal: vertical) or steeper. In most cases, the shoreline is also hardened with concrete or similar material to prevent erosion that might create shallow areas. By creating a permanent, stable, steep shoreline, the shallow water suitable for mosquito larvae is limited to an extremely narrow band that is easily accessed by fish and other mosquito predators, effectively

preventing mosquito reproduction along the majority of the shoreline. The steep lake edge extends to a depth of approximately 18 inches allowing mosquito-breeding habitat to be eliminated while providing a safe environment for people visiting the shoreline.

Shallow vegetated areas are important for lake water quality, aesthetics, and wildlife habitat, and are designed to prevent mosquito reproduction by providing access to all vegetated areas for fish and other mosquito predators.

In all manmade lakes and water features, the extent of emergent vegetation is controlled by designing certain areas to support it and other areas to prevent it. Areas intended to support emergent vegetation are designed with soil at an appropriate depth, while other shallow water areas are lined with a solid material (e.g. concrete or soil cement) to prevent the growth of emergent vegetation. Water deeper than approximately 4 feet generally is too deep to support emergent vegetation, and in all cases, unwanted vegetation is removed during regular maintenance. Typically, all shallow vegetated portions of the lake or water feature are designed to hold at least 6 inches of water. This relatively deep water allows fish access to the base of emergent vegetation, eliminating a potential hiding place for mosquito larvae. Very shallow water of an inch or two deep can support healthy growth of emergent vegetation such as rushes or cattails, but does not allow fish access to the interior parts of the vegetation clumps. Deeper water allows fish to swim into the center of the vegetation to hunt mosquito larvae, eliminating any refuge for mosquitoes within the vegetation. The width of a vegetated area also influences the ability of fish to access all of the vegetation. Generally, vegetated areas within manmade lakes or water features are limited to approximately 20 feet in width. This helps to provide fish access by ensuring that deeper water is in close proximity to all areas of the vegetation. In addition, narrow bands of emergent vegetation do not effectively break up the small wind-driven ripples that occur on all manmade lakes. As these ripples persistently disturb the water amid the vegetation, they render the area unsuitable for many species of mosquito, which require calm conditions in order to breathe.

Storm drain pipes that hold permanent standing water can be a significant source of mosquitoes. Storm drain inlets to lakes and water features are designed to limit the duration of standing water within pipes and prevent mosquito breeding. Mosquitoes will fly a considerable distance into a storm drain to lay eggs in standing water where the storm drain pipes provide a safe predator-free environment. The connection between the storm drain and the lake are especially important because if improperly designed, lake water can back up into the storm drain. All PACE-designed facilities feature inlets that are free of standing water except during rainfall events. Some inlets are designed to drain by gravity, while others include pumps to evacuate low flows and dry-weather flows.

In some situations, storm drain inlets to a manmade lake or water feature can drain by gravity flow into the water. The elevation of the pipe outlet above the lake water surface and the positive slope of the pipe eliminate the potential for standing water in the storm drain. In these cases, typically involving smaller diameter storm drain pipes and relatively small flows, water will flow from the storm drain into a pretreatment wetland where it will be temporarily detained and treated. This water will be detained in the pretreatment wetland until additional flows displace the water.

In other situations, storm drain pipes may enter the lake or water feature at an elevation lower than the normal operating water level. In this type of situation, an inlet is designed that allows larger flows to enter the lake via gravity flow, while smaller flows and any water remaining in the inlet box

following a storm is pumped into a pretreatment wetland. The proper design of the inlet box and presence of a pump prevent persistent standing water in the storm drain or inlet box.

Most manmade lakes and water features designed by PACE feature pretreatment wetlands that provide treatment for stormwater and dry weather discharges before the flows can enter the main water body. Similar pretreatment wetlands are used for both gravity and pumped storm drain discharges to the lake. Pretreatment wetlands are planted with emergent vegetation that enhances water treatment. These pretreatment wetlands are typically separated from the main water body by a concrete berm or curb that helps to retain small flows. Inside this berm water depths are typically 6 inches or deeper, allowing the pretreatment wetland to support fish. The berm helps protect mosquito fish living in the pretreatment wetland from larger predatory fish that may occur in the lake, and in general pretreatment wetlands in existing lakes support dense populations of small fish. The presence of fish in the pretreatment wetlands effectively prevents the survival of mosquito larvae.

All manmade lakes and water features designed by PACE include various features that enhance water quality, and the water quality in these facilities is generally excellent. Low-nutrient water renders properly designed and maintained lakes and water features undesirable for most nuisance mosquito species because most mosquitoes, particularly the mosquito species that cause the most problems for humans, prefer water that is high in nutrients.

Water quality enhancement features in manmade lakes include pretreatment wetlands, biofilters, in-lake circulation, aeration, and wetland vegetation. Each of these features play a role in maintaining the excellent water quality observed in PACE-designed lakes. It is important to note that emergent wetland vegetation in the lakes plays an important role in improving water quality by providing a substrate for attached algae, which absorb nutrients. The plants themselves both capture nutrients and provide a carbon source for microbes vital to nutrient cycling in the lake. The wetland soils under the vegetation are a site of denitrification, which helps remove nitrogen from the lake. Although emergent wetland vegetation can harbor mosquitoes under certain circumstances, its presence in well-designed manmade lakes is important for water quality and helps control mosquitoes by improving water quality.

Manmade lakes, ponds, and ornamental water features function best with a constant water level. Water level fluctuations are a key component of good habitat for several types of nuisance mosquitoes, because fluctuating water levels create temporarily flooded areas that do not support predators, often contain large amounts of organic matter, and may contain plentiful nutrients. Consistent water levels in lakes and water features contribute to mosquito control. In many cases, manmade lakes and water features are subject to water level fluctuation during rainfall events. However, areas around the lake that are subject to temporary inundation are designed to prevent the development of puddles or temporary pools that might support mosquitoes.

Other Nuisance Aquatic Insects

In the same way that mosquitoes spend part of their lives in and out of aquatic environments, other insects have a similar life history and can inhabit manmade lakes or water features. Some of these insects can occur in numbers that can create a nuisance; however, none of them bites humans, transmits disease, or is attracted to humans the way mosquitoes are.

Midges are small flying insects that begin life in the waters and sediments of lakes and rivers. Upon reaching adulthood, midges emerge from the water and embark on courtship flights, typically over or near the lake in which they were born. These courtship flights take the form of groups of midges flying in masses that hover in a location and often occur near dusk. These flights generally happen near the lake, and in some cases occur over lakeside trails frequented by people. These masses of midges are not attracted to people, but when a person happens to walk into the mass of midges it is easy to mistake the courtship flight for an organized attack; a midge looks very much like a mosquito. It is interesting to note that reports of thick swarms of mosquitoes are often due to flights of midges.

Midges occur in clean waters, and abundant midges are an indication of a healthy lake. Although midges represent an important part of the aquatic food chain, in many cases predators do not easily control their numbers. Chemical control of midges with pesticides is generally not feasible or desirable, making the control of midges difficult. Midges are attracted to lights, so careful design of lighting near the lake may offer the best hope for controlling the interaction between people and midges.

Crane flies are large relatives of mosquitoes that, like their biting cousins, start life in lakes. Crane flies rarely occur in large numbers like midges, but due to their large size may be more easily noticed by lake community residents. Crane flies do not bite and are a harmless part of the aquatic ecosystem.

4.9.2 Impact Significance Criteria

Potentially significant impacts associated with public services have been evaluated using the following criteria:

Parks and Recreation

- PR-a** Increase the use of neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.
- PR-b** Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.
- PR-c** Create a shortage of neighborhood parks facilities for new residents, by failing to meet the City of Stockton standard of 2 acres/1,000 residents for neighborhood parks, 3 acres/1,000 residents for community parks and 3 acres/1,000 residents for regional parks.
- PR-d** Fail to create a mechanism through which park maintenance revenues are generated and future maintenance of the park is guaranteed; or
- PR-e** Conflict with General Plan policies regarding park locations, security and safe access.

Community Center

CC-a Satisfy the City's Community Center facility requirements of one center per 30,000 residents (combined city-owned, school district, and housing authority);

Police Protection

PP-a Increase the demand for law enforcement services and interfere with the Police Department's ability to deter crime;

Schools

SCH-a Project-generated students would substantially increase the public school population beyond existing or planned school capacity;

Fire Protection

FP-a The increased demand for fire protection would substantially interfere with the ability of the fire department(s) to provide adequate service to the City and the project;

FP-b The ability of the fire department to provide an adequate response time to emergency calls would be compromised;

Library Services

LIB-a Meet City's requirements for library services for urban conditions;

Solid Waste

SW-a Increase in solid waste sufficient to exceed landfill capacity or substantially shorten the life of the landfill; and

SW-b Generation of solid waste sufficient to overburden the collection agency beyond their ability to service the project.

Vector Control

VC-a Expose project residents to health risks due to transmission of vector-related viruses.

4.9.3 Impacts And Mitigation Measures

Effects Determined to be Insignificant

Community Center

Impact CC-1: The project is not expected to cause inadequate community center facilities, aggravating existing City deficiencies.

Public and private recreation areas will satisfy some of the community center needs of the project's residents. The private areas will not provide the same level of services should the center be publicly owned and operated. However, the Westlake Villages elementary school proposed adjacent to the project site would be open to the general public and would offset this deficiency. Therefore, the conditions included in **Significance Criterion CC-a** are not expected to occur.

Parks and Recreation

Impact PR-1: Development of the project site is not expected to impact recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

The proposed project includes a total of 13.1 acres of parkland that will be dedicated as part of the proposed project. This includes an 8-acre community park, which will include a pool complex, tot-lot, and open areas for play fields. The project will also include five mini parks with a total of 5.1 acres. In addition to the park dedication, the proposed project also includes 8.7 acres of levee/open space adjacent to Bishop cut and a 7.2 acre lake. The inclusion of recreational spaces within the proposed project would reduce the need for future residents to utilize the surrounding neighborhood parks or other recreational facilities and therefore the impacts to existing parks and recreational facilities would be less-than-significant. Therefore, the conditions included in Significance Criterion PR-a are not expected to occur.

Impact PR-2: Development of the project site may require the construction or expansion of recreational facilities that might have and adverse physical effect on the environment.

The proposed project includes recreational facilities. Potentially adverse effects on the environment from the construction of the recreational facilities as a part of the proposed project are identified in this EIR, and mitigations are provided accordingly. Therefore, the conditions included in Significance Criterion PR-b are expected to be insignificant.

Impact PR-3: Development of the project site is not expected to create a shortage of neighborhood park facilities for new residents.

The proposed project includes approximately 1,363 residential units. According to the City of Stockton, the average household size for single-family homes is 3.107 people and 2.550 people for

multi-family homes. Based on the average household size for the City of Stockton, the proposed project would contain approximately 4,000 residents.

The City of Stockton has been requiring that most new development projects adhere to park development standards created for the 2035 General Plan Update program (see Table 4.9.A). This requirement anticipates the near term approval and adoption of the 2035 General Plan, with applicability to future development projects. Park land standards included in the 2035 General Plan program require that local park land dedication and/or park land fees be equivalent to 5.0 acres per 1,000 population generated by the project. The City has exempted the Crystal Bay project from adhering to the 2035 General Plan park land standards, and instead, has granted the use of park land standards included in the adopted 1990 General Plan program. These standards reflect a reduced local park land requirement of 3.0 acres per 1,000 project population. There are several reasons for this exemption, including:

- origination of the Crystal Bay project design/concepts prior to the 2035 General Plan Update;
- relatively small size of the project area (173.8 acres)
- development infill for only remaining undeveloped parcel south of Eight Mile Road;
- relationship to the Westlake Villages project (under construction), as an extension of that project;
- shared lake features with the adjacent Westlake Village project;
- proximity of the community park feature to the Westlake Village Development; and
- 7.2 acre lake/open space feature that has been excluded from park land credit.

Neighborhood Parks. The proposed project, with approximately 4,000 residents, would require approximately 8 acres of neighborhood park space, based on the City of Stockton park standards. The proposed project includes an 8 acre neighborhood park, as well as 5.1 acres of pocket parks.

Community Parks. The proposed project, with approximately 4,000 residents, would require approximately 12 acres of additional community park space, based on the City of Stockton park standards. The adjacent Westlake Villages will provide a 12 acre community park that lies within ½ mile for the proposed project.

Regional Parks. The proposed project, with approximately 4,000 residents, would require approximately 12 acres of additional regional park space, based on the City of Stockton park standards. The City of Stockton regional park standards require a minimum size of 30 acres to form a regional park. The proposed project includes approximately 13.1 acres of park space and 8.7 acres of levee/open space with an integrated trail system, for a total of 21.8 acres of parkland and open space within the project site. Therefore, the conditions included in Significance Criterion PR-c are not expected.

Impact PR-4: Development of the project site should not conflict with General Plan policies regarding park locations, security and safe access.

The park/open space would be within residential neighborhoods and surrounded by residential lots on both sides, which may allow for surveillance some of the park by surrounding residents, depending on the potential for intervening hardscape features and landscaping. The park/open space design includes public streets around and near the park, facilitating policing and surveillance. The proposed project would not conflict with General Plan policies regarding park locations, security and safe access. Therefore, the conditions included in Significance Criterion PR-e are not expected.

Solid Waste/Landfill

Impact SW-1: Implementation of the Crystal Bay project could generate significant volumes of solid waste, which could adversely impact landfill capacity.

During project construction, minor quantities of materials will be generated for disposal at the area landfills. Unlike many development projects that generate significant quantities of waste are generated during site preparation, construction at the project site will not have this effect. With the exception of minor farming facilities that may be present (irrigation facilities, diversion equipment) the site is virtually barren. As the building and development process occurs, wastes will be generated as typical of construction activities. These materials will be removed by commercial haulers and disposed at local landfills. As discussed below, the long term outlook for landfill capacity is favorable. Construction wastes that are generated on a one time basis should not adversely accelerate depletion of landfill capacity.

Consultation with the City’s Solid Waste Manager provided the following solid waste generation rates and estimates. Table 4.9.E., presents the daily solid waste generation estimates.

Table 4.9.E: Daily Solid Waste Generation (pounds per day)

Land Use	Proposed Units	Total People	Daily Generation Factor	Proposed Waste
Proposed Crystal Bay Development				
Residential	1,363	4,000	1.5 lbs./person/day	6,000
Total:				6,000

Source: Miller, 2003

The application of these rates to the population projected for the proposed Crystal Bay project results in an estimated volume of 6,000 pounds per day or 3 tons per day. Assuming a 50% diversion rate, the total landfill capacity required for the proposed project would be 548 tons per year.

The City is guaranteed landfill capacity for residential and commercial until June 2019. This service is provided under the terms of the City's exclusive residential and commercial collection contracts with Waste Management and Allied Waste. These companies would be contractually obligated to provide landfill space for the proposed project. The conditions presented in Significance Criterion SW-a will not occur.

Impact SW-2: The proposed project may generate solid waste sufficient to overburden the collection agency beyond their ability to service the project.

Solid waste service is a competitive business that benefits from an increase in service. As a result of the competition generated by market demand, collection service companies adjust to specific demand requirements. While the collection companies may require additional staff, equipment, etc., to manage the increase in project demand, the effects are beneficial to the individual participating companies. Consequently, the conditions presented in Significance Criterion SW-b will not occur. Implementation of the proposed project will not result in overburdening the regional landfills or collection services.

Potentially Significant Effects

Parks and Recreation

Impact PR-5: Fail to create a mechanism through which future maintenance of the park is guaranteed.

The City of Stockton Municipal Code contains provisions regulating the dedication of parks and the provision of financing for the maintenance of dedicated parkland. The policy specifies that the City will not develop a park unless a maintenance funding mechanism is in place. The primary mechanism is the City Consolidated Landscape Management District. Parks will be developed only when property owners approve an assessment for park maintenance fees and sufficient funds have been accumulated within an area's development fee zone for such improvements. The policy is applicable to the parks, recreation areas, and open space in the proposed project. The following mitigation measures would reduce any impacts related to Significance Criterion PR-d to less-than-significant levels.

Mitigation Measure PR-1a: Prior to recordation of any Final Map, the owner, developer, homeowners association or successor-in-interest shall form a new zone of the Stockton Consolidated Landscape Maintenance District, and approve an assessment providing for the subdivision's proportionate share of the costs to maintain any public parks within the service area for this subdivision or serving this subdivision. Formation of a new zone shall result in the establishment of an assessment that would include, but limited to, costs for: 1) annual maintenance of the park; and 2) administrative costs. The assessment levied shall contain a provision that will allow the maximum assessment to be increased in an amount equal to the greater of: 1) three percent or 2) the percentage increase of the Consumer Price Index for the San Francisco - Oakland - San Jose County Area for All Urban Consumers, as developed by the U.S. Bureau of Labor and Statistics, for a similar period.

Mitigation Measure PR-1b: Prior to the recordation of any Final Map, the proposed project shall include provisions for the establishment of a maintenance entity acceptable to the community Development Director, the Parks and Recreation Director, and the Public Works Director to provide funding for the maintenance of, and if necessary, replacement at the end of the useful life of, the park space. The maintenance entity would also be responsible for improvements including but not limited to, common area landscaping, landscaping in the right of way, sound walls and/or backup walls, and all "improvements" serving or for the special benefit of the proposed project. If the proposed project provides maintenance through a maintenance assessment district, the proposed project shall include the formation of a new zone of the Stockton Consolidated Landscape Maintenance District provided the type, intensity, and amount of the improvements to be maintained are similar to improvements in the zone to which annexation is proposed. Formation/annexation shall require the approval of an assessment that shall be levied on all properties in the subdivision to ensure that all property owners pay their proportionate share of the costs of maintaining, in perpetuity, the improvements serving or for the special benefit of the proposed project.

Mitigation Measure PR-1c: The Owners, Developers and/or Successors-in-Interest (ODS) shall reserve for public use and construct the planned neighborhood parks, mini parks, greenbelt and linear park corridors and storm drain treatment basins located within the project site. Park improvements shall be subject to the approval of the City Parks Facility Planner/Landscape Architect.

Mitigation Measure PR-1d: The ODS shall contribute Public Facility Fees, land or a combination of both in fulfillment of adopted parkland Public Facility Fee requirement

Mitigation Measure PR-1e: All walls shall be located on private property and a separate maintenance easement shall be recorded for such walls. Such easement shall be sufficient to allow for regular maintenance (i.e. graffiti removal) and shall include with width of the support footing as it extends from both sides of the wall.

Mitigation Measure PR-1f: The ODS shall construct a pedestrian/bikeway facility along the I Street and Scott Creek Street. The pedestrian/bikeway path along the street system shall comply with applicable ADA requirements, including a wheelchair linkage to all streets within the project site that terminate at the level.

Mitigation Measure PR-1g: Subdivision improvement plans shall include utility stub-outs to public park sites, subject to approval of the Parks and Recreation Department.

Implementation of the above measures, combined with the concepts proposed in the MDP, will reduce potential park-related impacts to less than significant.

Impact FP-1: Project implementation will increase the demand for fire protection services which could affect the level of service protection and response times.

The proposed project would add 4,000 individuals to the North Stockton area. This would require a subsequent increase in fire fighting personnel to provide adequate fire protection services. A fire station is proposed as part of the adjacent Westlake Villages project, and this should prevent increases to response times and level of service. The new fire station will also provide services to areas outside

of the project site. However, the fire station will need to be staffed which may create a financial burden on the City. New developments tend to generate fewer fire-related calls due to the use of new materials and construction techniques in accordance with current codes. Mitigation is provided to offset this impact.

Mitigation Measure FP-1a: Prior to issuance of building permits, the project applicant shall pay development impacts fees (as applicable) to reduce the burden on fire protection services. Evidence indicating payment of fees shall be provided to the Director of Community Development Department.

Mitigation Measure FP-1b: The applicant will consult with the City's Fire Department regarding adequacy of project plans relating to the safety of structure, safety devices, and emergency vehicle access.

Mitigation Measure FP-1c: The ODS shall install fire hydrants and water distribution facilities which will provide fire flows which are adequate to support the City's existing Class 1 ISO rating and which conform to adopted Building Code Fire Safety Standards.

Implementation of the above mitigation measures will reduce fire protection impacts to less than significant levels.

Impact PP-1: The proposed Crystal Bay project will increase the demand for law enforcement services.

The proposed project would add 4,000 individuals to the North Stockton area. This would require a subsequent increase in law enforcement officers (including CHP officers) to provide adequate police protection services. A police station will be built as part of the North Stockton Gateway project, just north of the project site that will help serve Crystal Bay. However, the proposed project will rely on existing police stations in the interim. Mitigation is provided to offset this impact.

Mitigation Measure PP-1a: Prior to issuance of building permits, the project applicant shall pay development impacts fees (as applicable) to reduce the burden on police protection services. Evidence indicating payment of fees shall be provided to the Director of Community Development Department.

Mitigation Measure PP-1b: The applicant will consult with the City's Police Department regarding adequacy of project plans relating to the safety and defensible space issues.

Mitigation Measure PP-1c: Contractors are responsible for providing licensed uniformed security guards for after hours and weekends to prevent damage or theft of building materials, equipment, and/or appliances. Removal of doors to home appliances until after installation in new homes shall be considered.

Mitigation Measure PP-1d: Construction site perimeter fencing is also essential to prevent criminal activity during construction.

Implementation of the above mitigation measures will reduce police-related/security impacts to less than significant levels.

Impact SCH-1: Project implementation will generate additional students and could affect the capacity of existing schools.

The LUSD relies on student generation rates to estimate the potential students from proposed developments. Table 4.9.F presents LUSD generation rates.

Table 4.9.F: LUSD Generation Rates

Grade Level	Single Family
K-6	0.31
7-8	0.08
9-12	0.15

Source: LUSD, 2003

The composite number used for K-12 is 0.54.

Based on the maximum allowable single family units per the Master Development Plan and generation rates, Table 4.9.G reflects an estimate of the project student generation.

Table 4.9.G: Estimated Student Generation from Crystal Bay

GRADE LEVEL	SINGLE FAMILY
K-6	422
7-8	109
9-12	204
TOTAL:	735

SOURCE: LSA, 2005

A new elementary school facility will be constructed in the adjacent Westlake Villages project to serve the majority of new elementary aged children within that project site and surrounding neighborhoods. Students generated by the proposed project for middle and high school levels will be accommodated by the new Crista McAuliffe Middle School and Bear Creek High School. As a result, the conditions outlined in Significance Criterion SCH-a would not occur.

Mitigation Measure SCH-1: Prior to issuance of building permits, the project applicant shall pay fees (as applicable) to comply with State-mandated impact fees. Evidence indicating payment of fees shall be provided to the Director of Community Development Department.

Mitigation Measure SCH-1b: The ODS shall coordinate with LUSD as required to assure that adequate school facilities will be available concurrently with project-related need for such facilities, consistent with General Plan facilities Goal 2, Policies 7, 8, and 9.

Implementation of the above mitigation measures will reduce school-related impacts to less than significant levels.

Impact LIB-1: Implementation of the proposed project will increase the demand for library services.

The proposed project would result in a higher demand for library services. Currently, the City is planning to construct a branch library to service the northeastern portion of the City. The City's Library Master Plan does not provide provisions for a library in the northwestern section of the City. Consultation with library personnel indicated that providing adequate space within the nearby commercial portion of Spanos Park West would offset any impacts from the proposed project. It is expected that the additional population generated as part of the proposed project may result in the conditions outlined in Significance Criterion LIB-a.

Mitigation Measure LIB-1a: Prior to issuance of building permits, the project applicant shall pay development impacts fees (as applicable) to reduce the burden on community library services. Evidence indicating payment of fees shall be provided to the Director of Community Development Department.

Implementation of the previous mitigation measure will create a less than significant impact on library services.

Vector Control

Impact VC-1: Locating the project development adjacent to sources of mosquito populations could result in health risks to residents.

The County Mosquito and Vector Control District monitors mosquito populations throughout the project area, and provides vector control services to reduce health risks to area residents. Based on their records, the mosquito populations may periodically be at levels that could present a public health problem. Even with aggressive mosquito control operations, mosquito populations may remain higher than considered appropriate or acceptable for the project uses.

A properly designed manmade lake or water feature offers little habitat suitable for mosquito larvae to grow into adulthood. Properly designed lakes offer very little shallow water habitat favored by mosquitoes, contain clean, moving water, and support abundant predators. As a result, the main body of the lake or water feature is an unsuitable site for mosquito reproduction.

Storm drains offer potentially better habitat for nuisance mosquito species, so careful attention is given to the design of storm drain inlets into the lake to prevent standing water within the storm drain. However, the portion of the pipe adjacent to the lake represents only a small percentage of the buried storm drain pipe in a typical development. Careful review of design standards for the entire buried storm drain system should be undertaken to identify locations where standing water might persist and support mosquito reproduction.

Although lakes offer little or no suitable habitat for mosquito reproduction, there is a common misperception that mosquitoes come mainly from open water bodies such as lakes, and that all developments have some mosquitoes. It is common for manmade lakes and water features to be held responsible for any mosquitoes that are present in the surrounding development. Proactive public education programs and control of mosquitoes throughout a development may help reduce the number of complaints about mosquitoes in lakes. Mosquito breeding sites in a typical development include open containers that capture rainwater, poorly maintained birdbaths, saucers beneath potted plants, irrigation leaks, and storm drains that hold standing water. County vector control programs offer educational materials that may be distributed to homeowners in an effort to reduce the number of mosquitoes present in a development.

Manmade lakes are often designed as stormwater treatment BMPs, and are among the best BMPs available in terms of water treatment and vector control. Many common types of stormwater BMPs are subject to mosquito problems due to daily dry weather discharges from storm drain systems. "Dry" BMPs such as Dry Detention Basins, Grassed Swales, and Bioretention facilities are designed based on standards that were developed in humid climates where landscape and lawn irrigation is rare. Therefore, these BMPs are designed to capture water during rains, then completely dry out between storms. The drying prevents mosquito larvae from reaching adulthood. However, in California it is common practice to irrigate all landscaped areas, which results in daily flows in the storm drain. This daily flow will create small but persistent flooded areas in stormwater BMPs that can support surprising numbers of mosquito larvae. Lakes, in contrast, capture nuisance flows in the permanent pool of the lake where predators, water quality, and habitat conditions effectively prevent the survival of mosquito larvae. A manmade lake represents a significant contribution to mosquito control when it is used to replace other stormwater BMPs that are more subject to mosquito problems.

The project site will continue to rely on vector control services provided by the District. Like similar developments in the vicinity, fees collected from property taxes and/or other sources will be used to control mosquito populations.

Mitigation Measure VC-1: Should the District's efforts to control mosquito populations within the project area fail to adequately control the potential health risk to the project population, the Crystal Bay Owner's Association or similar organization shall provide additional resources or financial support to protect project residents from vector-related health risks.

Implementation of the above measure will reduce the potential vector-related health risks to less than significant levels.

4.9.4 Level of Significance after Mitigation

Implementation of the above mitigation measures will reduce the impacts to public services to less than significant levels.

4.10 PUBLIC WATER SUPPLY ASSESSMENT

The City of Stockton Municipal Utilities District has prepared a Water Supply Assessment in conjunction with the proposed project. This Water Supply Assessment is the basis for this section of this EIR and is provided in Appendix F.

4.10.1 Existing Setting

Regulatory Background

The California Water Code requires that land use lead agencies and public water purveyors plan for adequate water supplies to meet existing and future demands. California Water Code Sections 10910-10915 dictate the following: 1) to identify the responsible public water purveyor for a proposed development project, and 2) to request from the responsible purveyor, a "Water Supply Assessment". This assessment is required to demonstrate that the public water purveyor can adequately supply the proposed project and existing and planned future water demand. The California Water Code specifies the information to be addressed in the Water Supply Assessment.

Water Supply

To meet existing demands, the City of Stockton Metropolitan Area (COSMA), relies on both surface water and groundwater. COSMA currently receives all of its surface water through the wholesale purchase of treated water from Stockton East Water District (SEWD) based on the apportionment criteria set forth in the "Second Amended Contract Among the Stockton East Water District, The California Water Service Company, The City of Stockton, The Lincoln Village Maintenance District, and The Colonial Heights Maintenance District Providing For The Sale of Treated Water." The City of Stockton also has negotiated two interim water supply contracts (described below) on the Stanislaus River that are also conveyed through SEWD. COSMA's available "firm" surface water supplies total 134.17 TAF/year in wet or above normal years and 58.17 TAF/year in critical years. Without interim supplies, SEWD supplies in wet and above normal years total 104.17 TAF/year. It should be noted that the COSMA is served using conjunctive use methods where groundwater and surface water are balanced so as not to exceed accepted groundwater yields over a long term period or in any given year. Each surface water source currently delivered to the COSMA (refer to Table 4.10.A and 4.10.B) is discussed in turn, as follows:

New Hogan Reservoir (40,171 AF/year): SEWD and Calaveras County Water District (CACWD) hold a repayment contract with the Bureau of Reclamation (Reclamation) for water stored in New Hogan Reservoir. Since this water is not part of the Central Valley Project, it is not subject to CVP deficiencies in dry hydrologic years, and has no expiration date. Out of this contract SEWD has a right to divert up to 40,171 AF/year and CACWD has a right to divert up to 30,928 AF/year. The 40,171 AF/year is 56.5 percent of the total contract amount with CACWD holding 43.5 percent.

Calaveras County Water District's Transfer (10,000 AF/year) of Unused New Hogan Reservoir Water: SEWD holds a contract with CACWD for transfer of unused water entitlements under Reclamation repayment contract for New Hogan Reservoir. While water under this contract continues

to be delivered at 24,000 AF/year, the contract amount may be reduced to around 10,000 AF/year as competing demands arise from new development in Calaveras County.

Central Valley Project New Melones Reservoir (40,000 AF/year): This Stanislaus River water source is only available in wet and above-normal years. Under a Bureau of Reclamation contract as part of the Central Valley Project, SEWD is entitled to 40,000 AF/year for municipal and industrial uses. The infrastructure to supply this water is complete, but the source is not reliable since the Central Valley Project Improvement Act and other regulatory actions have reduced the quantity of water available from this source.

South San Joaquin Irrigation District (15,000 AF/year): The City of Stockton holds an interim water transfer contract treated and wheeled through SEWD with South San Joaquin Irrigation District (SSJID) for 15,000 AF/year from the Stanislaus River (New Melones). The contract amount is limited to a minimum of 4,000 AF/year in critically dry years. While this contract expires in 2009, COSMUD is pursuing a renewal of the contract. Because SSJID is a senior water rights holder, this supply is considered reliable.

Oakdale Irrigation District (OID) (15,000 AF/year): The City of Stockton also has an interim contract with OID for up to 15,000 AF/year from the Stanislaus River (New Melones) that is wheeled and treated by SEWD to the COSMA. The contract is expected to deliver at least 4,000 AF/year in critically dry years. Because OID is a senior water rights holder on the Stanislaus River, this is considered a reliable source of water. While the contract is due to expire in 2009 (with a possible ten year renewal), the City of Stockton is pursuing a renewal of the contract and OID has indicated in its draft Water Resources Plan that it intends to implement long term water transfer agreements in order to fund improvements to its delivery infrastructure.

Groundwater: As overlying appropriators of groundwater, COSMA water retailers can extract approximately 0.75 AF/(developed) acre/year, on average, of groundwater from the aquifer underlying the COSMA. The source of the groundwater is considered to come from the Eastern San Joaquin sub-basin, a sub-basin of the larger Central Valley Aquifer as identified in State Department of Water Resources Bulletin 118-0. As part of a regional conjunctive use program, the COSMA's use of groundwater is largely dependent on the availability of surface water supplies. In wet years, the COSMA maximizes its use of surface water supplies and only uses groundwater for the higher demand months. In dry and critical years, surface water supplies are subject to cutbacks and groundwater is used more heavily. This method of conjunctively using groundwater and surface water is not uncommon in the Central Valley where the groundwater basins can essentially store water through in-lieu or direct (e.g., direct injection, recharge basins) recharge for use in dry year conditions. Currently, groundwater extractions are at or below the current self-imposed sustainable yield of the groundwater basin. In the Delta Water Supply Project (DWSP) Feasibility Report, the COSMA developed a long term average groundwater extraction goal of 0.60 AF/acre/year, and an absolute extraction limit of 0.75 AF/acre/year. It is assumed that these goals will be placed into effect once Phase 1 of the DWSP is constructed in 2010/11. In the meantime, the 0.75 AF/acre/year is used.

Table 4.10.A: Current SEWD Water Sources And Critical Year Availability

Source	Annual Contract Amount Thousand Acre Feet	Projected "Critical Year" Annual Availability (AF/year)			
		Planning Year			
		2000	2010	2020	2035
Reclamation – New Hogan Water Supplies, SEWD entitlement	Total Yield 84.1 TAF SEWD Entitled to M&I or Ag 40.171 TAF	20,000	12,000	12,000	12,000
Reclamation – New Hogan Waters Supplies, CACWD unused entitlement	CACWD Entitle to 30.928 TAF and are currently using approximately 3 TAF with SEWD using slightly over 24.0 TAF of CACWD's unused portion. This amount is projected to decrease to 10 TAF at buildout of the General Plans of both Calaveras County and the City of Stockton	24,000	24,000	10,000	10,000
Reclamation – New Melones Interim Water Contract and Section 215 "Spill" Water	Total Contract 75 TAF (M&I 40 TAF)	Not Available in Dry Years			
SSJID Transfer – Stanislaus Water	(Interim M&I 15 TAF)	4,000	4,000	0	0
OID Transfer – Stanislaus River (includes contract renewal to 2025)	(Interim M&I 15 TAF)	4,000	4,000	4,000	0
Total	(Firm M&I 104.1 TAF initially to 94.1 TAF at build- out) (Approximate Max Future M&I 180 TAF)	48,000	30,000	26,000	22,000

Source: Water Supply Assessment for the Crystal Bay Master Plan Development and Specific Plan, 2007

Table 4.10.B: Existing (2004) Water Supplies and Demands for the COSMA

Year Type		Demand Reduction	Surface Water (AF/Year)	Ground Water (AF/Year)	Total (AF/Year)
Normal ¹	COSMUD	0%	19,426	15,124	34,550
	Cal-Water		18,247	13,823	32,070
	County		1,378	716	2,094
	Total		39,052	29,663	68,715
Single Dry	COSMUD	15%	16,512	12,855	29,368
	Cal-Water		15,510	11,749	27,260
	County		1,171	609	1,780
	Total		33,194	25,213	58,407
Multiple Dry (Hypothetical 3-year Drought Period)	COSMUD	0%	19,426	15,124	34,550
	Cal-Water		18,247	13,823	32,070
	County		1,378	716	2,094
	Total		39,052	29,663	68,715
	COSMUD	10%	17,484	13,612	31,095
	Cal-Water		16,423	12,441	28,863
	County		1,240	644	1,885
	Total		35,146	26,697	61,843
	COSMUD	10%	17,484	13,612	31,095
	Cal-Water		16,423	12,441	28,863
	County		1,240	644	1,885
	Total		35,146	26,697	61,843
Average over 70-Years	COSMUD	5%	19,426	15,124	34,550
	Cal-Water		18,247	13,823	32,070
	County		1,378	716	2,094
	Total		39,052	29,663	68,715

Source: Water Supply Assessment for the Crystal Bay Master Plan Development and Specific Plan, 2007

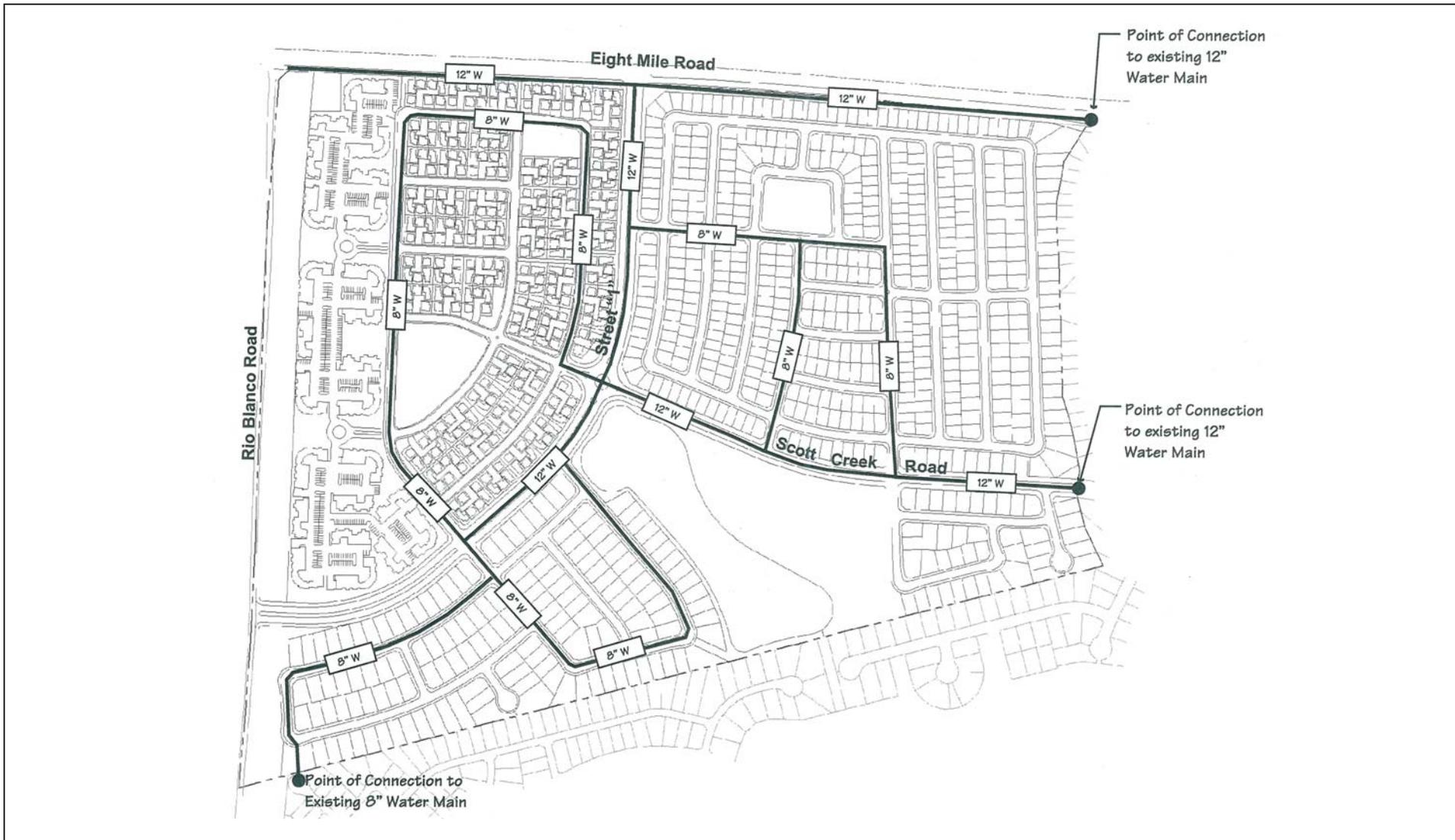
¹Normal year surface water deliveries are restricted to the projected availability of SEWD conveyance and treatment plant capacity (not to exceed 60 mgd).

Future Water Supply

As the region continues to grow and demand for water increases, new water supply sources and management strategies will be developed to accommodate the demand. Table 4.10.C illustrates the forecast water demand for the Stockton General Plan planning area based on land use designations. Figure 4.10.1 presents the conceptual water system plan needed to deliver the water.

Where the public water system's supplies may not be sufficient to meet the demands of a proposed project and all existing and reasonably foreseeable planned future uses, the Water Supply Assessment discusses the water retailer's plans for acquiring additional water supplies.

Delta Water Supply Project (125,900 AF/year): The Delta Water Supply Project (DWSP) includes an application to the State Water Resources Control Board (SWRCB) to divert up to 125,900 AF/year



LSA



FIGURE 4.10.1

SOURCE: Kimley-Horn, 2007

Crystal Bay
Conceptual Water Master Plan

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from the Delta, as well as to construct necessary diversion, conveyance, and treatment facilities. On March 8, 2006, the SWRCB issued an appropriative water right permit for diversion from the Delta of up to 33,600 AF/year (or 30 million gallons per day (mgd)) from the Delta by COSMUD for use within the Place of Use identified in the Water Right Application (DWSP Phase 1).

Table 4.10.C: Projected Future Water Demand Based on Approved General Plan

General Plan Land Use Designation	Unit Demand Factor (acre-feet per acre per year)	General Plan Area (acres)	Municipal Water Demands at Year 2015 (acre-feet per year)
Low-Medium Density Residential	1.5	31,222	47,872
High-Density Residential	3.0	1,368	4,104
Administrative Professional	1.5	841	1,266
Commercial	1.5	3,776	5,749
Performance Industrial/Industrial	1.5	9,582	14,020
Institutional	1.5	6,648	10,235
Park and Recreational	2.0	1,042	2,084
Agricultural/Open Space	---	27,585	—
TOTAL		82,064	85,330

Source: MUD, 2007

4.10.2 Impact Significance Criteria

WSA-a Demonstrate that available water supply can meet the proposed project demand; and

WSA-b Provision for water system modifications sufficient to meet proposed project demand.

4.10.3 Impacts and Mitigation Measures

Effects Considered Less than Significant

Impact WSA-1: Implementation of the proposed project will increase the demand for water supplies. The City may not be able to guarantee a supply of water beyond on a first-come, first-serve basis.

The Water Supply Assessment determined that the COSMUD currently cannot support the proposed Crystal Bay project without the DWSP Phase 1 project based on inadequate surface water entitlements and the infrastructure to divert, treat, and convey potable water along with surface water supplies from SEWD and groundwater. However, in consideration of the significant steps in the environmental review, permitting, and financing of the DWSP it is reasonable to rely on the DWSP for evaluation of water supply. Therefore, once constructed, the DWSP will provide sufficient water supply to meet the water demand anticipated by Crystal Bay as well as all existing and reasonably foreseeable water demands. Therefore, the conditions outlined in **Significance Criterion WAT-a** will not occur.

The following conclusions are included in the Water Supply Assessment:

- The existing near-term and long-term reliable supplies of SEWD surface water supplies and indigenous groundwater supplies can deliver a sustainable reliable water supply without impacting environmental values and/or impacting the current stabilization of the groundwater basin underlying the COSMA.
- The water demands for Crystal Bay and the self-imposed reductions in groundwater use by the COSMA, make it necessary to supplement current surface water supplies from SEWD through the implementation of the DWSP (i.e., current water supplies are insufficient to meet the projected demands of the Crystal Bay project and all other existing and planned future uses in the service area).
- The existing and future (i.e., DWSP Phase 1) conjunctive use program of using surface water and each of the urban water retailer's groundwater supplies has been extensively analyzed as part of the DWSP Feasibility Report and EIR and as part of the WSA. All studies show that sufficient surface water supplies and available groundwater supplies will exist once Phase 1 of the DWSP is operational for the level of water demand contemplated under the Crystal Bay project.
- The project area will be served by water supplies made available through the existing and planned future conjunctive use program within the COSMA urban water retailer's service areas.

Existing Riparian Surface Water Supplies/Augmented Water Availability

A consequence of developing the proposed project is that water rights formerly used on lands within the project area can be used on the project area for project demands, or treated by the COS for use on those same lands. As a result, the demand on existing and planned future water supplies by uses within the project area will be significantly lower from the amounts projected.

Senate Bill 610 does not require a water supplier to identify other water supplies not needed to meet future water demands. However, the COS is providing an assessment of the current water rights now

utilized by the project area lands and how those rights can be used by the COS within the project area. These water rights were not relied upon by the COS in preparing the WSA—existing and proposed future water supplies for the three COSMA urban water retailers are sufficient to meet existing water demands and the water demands of the project and all reasonably foreseeable planned future uses in wet and above-normal hydrologic years and in dry and critical years and under sustained drought conditions without considering these water rights. If at some future date the COS does develop and use these rights, these supplies may be referenced in future WSAs or equivalent evaluations.

All of the project area is entitled to riparian water. The doctrine of riparian water rights confers on the owner of land, contiguous to a watercourse, the right to withdraw water from the water body for reasonable and beneficial use on his land. The riparian water right is a right of property and when the land is conveyed the riparian right passes with it. The riparian right can be lost if the land is severed from, or loses contiguity with, the watercourse; the rule in California is that the riparian right extends only to the smallest tract held under one title in the chain of title leading to the present owner. Rancho Santa Margarita v. Vale (1938) 11 Cal.2d 501. Therefore, in order to determine whether property now has a riparian right every land transaction from the original patent or grant to the present must be examined.

A chain of title review documenting riparian rights for the property was undertaken by Herum Crabtree Brown in 2006. The conclusions reached on the riparian status of each of the properties are illustrated below on Table 4.10.D

Table 4.10.D: Riparian Water Rights

APN	Parcel Acres	Status of Acreage Included in Project
055-31-04	49.9	Riparian to Telephone Cut and Bishop Cut
055-31-05	62.63	Riparian to Telephone Cut and Bishop Cut
055-31-06	61.53	Riparian to Telephone Cut
Total Acreage	174.06	All acreage riparian

All of the total 174.06 acres included in the project are riparian to Telephone Cut and could be served by riparian water from this watercourse on a year-round basis for domestic purposes. Parcels 4 and 5 (112.53 of the 174.06 acres) are also riparian to Bishop Cut. Therefore, the entire project water demand could be met through use of the riparian water right held by the properties.

Riparian water rights are associated with lands immediately adjacent to a natural body of water. These rights allow the owner of the land to withdraw water from the water body for use on that land. If land with riparian water rights is subdivided, the rights may be retained for the entire acreage, even if some parcels are no longer adjacent to the water body, provided that the documents of conveyance state that riparian water rights are retained. Riparian water rights will be retained for the eligible parcels with in the project site, a proposed Community Services District (or other public agency) will take an assignment of those rights from the future property owners, withdraw water from the Delta using these rights, treat and distribute the same volume of water to those same parcels.

Although riparian water rights are not limited to specific volumes of water, the amount of water that may be withdrawn using these rights is a good indicator of what can be diverted without infringement of the rights of other water diverters. The exact historic water use on these land are unknown; however, the acres identified as possessing riparian rights have historically been used for the production of alfalfa, silage and other grains. The average annual water use for production of these crops on Delta lands is generally estimated to be 3 to 4 acre feet per acre, so the 1.6 acre feet annually estimated by the COS to be needed on these properties when developed could be easily supplied by the riparian right without infringement upon the rights of other water users in the Delta.

Although the riparian rights held by the property have historically been used for irrigation purposes only, unlike appropriative rights, no regulatory approval is needed to initiate or change the purpose of use for a riparian right. The California Supreme Court has stated that:

So long as the riparian owner takes no more than his reasonable share and uses it upon his riparian land, without unreasonable waste, other riparian owners below have no right to inquire, how, or by what means, or at what place, he manages to divert his share from the stream. . . *Turner v. The James Canal Company* (1909) 155 Cal. 82, 92.

Riparian water may be used for municipal and industrial uses and various forms of irrigation, such as for landscaping and parks. Riparian water can also be used for recreation, such as maintaining lake levels.

Riparian water diverted pursuant to rights held by the development lands could also be diverted at the intake facility developed for the COS DWSP, located on the southwest tip of Empire Tract adjacent to the San Joaquin River. Although the properties' riparian rights extend to Telephone Cut, and have historically been diverted at this location, the point of diversion for a riparian right can be changed to upstream or downstream of the riparian land provided the change does not injure the rights of other lawful users. The riparian water diverted at the COS DWSP intake facility would also be conveyed to and treated at the planned Stockton WTP to be constructed approximately three miles east of I-5 and 0.5 mile north of Eight Mile Road along Lower Sacramento Road.

Upon completion of the Delta Water Supply Project, Phase 1, and use of existing riparian water rights for non-potable irrigation and lake maintenance purposes, sufficient water supplies will be available for the proposed project and the conditions outlined in Significance Criterion WAT-a will not occur.

Potentially Significant Effects

Impact WSA-2: Project implementation could require extensive modifications to the existing water system to meet proposed project demand.

Development of the proposed project would necessitate water system modifications in order to provide adequate distribution. Most of the water system modifications that would be necessary to support development of the proposed project have already been completed. The remaining

infrastructure needed includes numerous smaller pipes to distribute water at appropriate pressures to all points within the system. It is expected that the water supply infrastructure will be extended from Spanos Park West and development impact fees exacted on new development projects for surface water connections would assist in financing expanded services to the proposed project. The existing water system lines in Spanos Park West have been sized to accommodate additional demand in the North Stockton area. Nonetheless, to prevent the conditions outlined in **Significance Criterion WAT-b** from occurring the following measures are required.

Mitigation Measure WSA-1a: Prior to issuance of building permits, the applicant shall pay all applicable connection fees and/or capital improvement fees required by City ordinance to fund the necessary improvements to the domestic water supply. The Department of Community Development will collect fees in conjunction with building permit issuance. The MUD will oversee water system analysis. The Departments of Planning, Building, and MUD shall verify that conditions are attached to Tentative Maps and that necessary dedications are made or secured prior to approval of Final Map. All conditions set forth in the Annexation MOU will be met by the applicant.

Mitigation Measure WSA-1b: Prior to issuance of building permits, the applicant shall provide evidence of compliance with plumbing, metering, and other water conservation measures in effect, including the 16 BMPs included in the City's Urban Water Management Plan, 1995 Update. The Department of Community Development would collect fees in conjunction with building permit issuance. The MUD will oversee water system analysis. The Departments of Planning, Building, and MUD shall verify that conditions are attached to Tentative Maps and that necessary dedications are made or secured prior to approval of Final Map.

Mitigation Measure WSA-1c: Prior to approval of improvement plans for each development unit, the applicant will perform a water system analysis of the annexation project areas utilizing methodology approved by the Municipal Utilities Department. The Department of Community Development would collect fees in conjunction with building permit issuance. The MUD will oversee water system analysis. The Departments of Planning, Building, and MUD shall verify that conditions are attached to Tentative Maps and that necessary dedications are made or secured prior to approval of Final Map.

Mitigation Measure WSA-1d: Prior to approval of the Final Map, the applicant shall design and construct all on-site and off-site water facilities to comply with the revised City Master Water Plan and the water system analysis. The Department of Community Development would collect fees in conjunction with building permit issuance. The MUD will oversee water system analysis. The Departments of Planning, Building, and MUD shall verify that conditions are attached to Tentative Maps and that necessary dedications are made or secured prior to approval of Final Map.

Mitigation Measure WSA-1e: An Integrated Water Management Plan shall be developed, and provided to the Municipal Utilities Department prior to the submission of utility master plans.

Development of the proposed project would require construction of additional infrastructure to accommodate water delivery. However, the proposed mitigation measures (i.e., Mitigation Measures WSA 1a-1d) would reduce the impacts to a less than significant level.

4.10.4 Level of Significance After Mitigation

Implementation of the mitigation measures outlined above will ensure that the water supply impacts are reduced to less than significant levels.

4.11 UTILITIES AND SERVICE SYSTEMS

4.11.1 Existing Setting

Wastewater/Non-Potable Water

Sewage Treatment

The proposed project will be served by the Stockton sanitary sewer system. A network of gravity flow sewer mains will serve the individual neighborhoods. This network will feed to large mains in Scott Creek Drive, which will ultimately collect into a 15-inch sewer main at the project's eastern boundary with Westlake. Wastewater will be conveyed through Westlake to a lift station off Consumnes Drive near Spanos Park West. From there the wastewater is conveyed to the City's Regional Wastewater Control Facility (RWCF), located on Navy Drive in southwest Stockton via the Westside Interceptor Pipeline. Figure 4.11.1 illustrates the Sanitary Sewer Master Plan.

Existing Collection System

The urban services boundary has been increased to include this project. The existing and new collection system has been divided in to sub-areas or "systems". Wastewater will be collected in a community-wide sewer system, with treatment and disposal through the City's Wastewater Control Facility. The existing tertiary filtration facilities will be upgraded to meet Title 22 requirements and provide other water quality enhancements as well. Upgrades include an effluent polishing wetland. The City is in the process of evaluating additional treatment needs and conducting studies required by the National Pollutant Discharge Elimination System (NPDES). The current upgraded system includes increased filtration and nitrification capabilities, as well as other enhancements required by the permit. Tables 4.11A and 4.11.B illustrates data on current and future wastewater/sewer system requirements.

Table 4.11.A Developments Serviced by the North Stockton Outfall Sewer

DWELLING UNIT EQUIVALENT						
DEVELOPMENT	CURRENT GROSS ACREAGE	ULTIMATE GROSS ACREAGE	CURRENT OCTOBER 2003	ULTIMATE	PERCENT CURRENT COMPLETE	PERCENT ULTIMATE COMPLETE
LeBaron Estates	36	36	135	162	83	83
Spanos Park East	418	418	1,750	1,794	98	98
Spanos Park West	460	460	1,372	2,718	50	50
North Stockton Projects	112	112	225	502	45	45
North Stockton Pipelines Extension - Active Projects	650	650	560	3,628	15	15

DWELLING UNIT EQUIVALENT						
DEVELOPMENT	CURRENT GROSS ACREAGE	ULTIMATE GROSS ACREAGE	CURRENT OCTOBER 2003	ULTIMATE	PERCENT CURRENT COMPLETE	PERCENT ULTIMATE COMPLETE
North Stockton Pipelines Extension - Planned Development Area		2,272		11,363		0
TOTAL	1,676	3,948	4,042	20,164	46	20

Source: Thompson-Hysell, 2003

Table 4.11.B Current and Ultimate Wastewater Flows, gallons per day (gpd)

DEVELOPMENT	CURRENT ANNUAL DRY WEATHER FLOWS	CURRENT INFLOW AND INFILTRATION	ULTIMATE INFLOW AND INFILTRATION	CURRENT PEAK WET WEATHER FLOWS	ULTIMATE PEAK WET WEATHER FLOWS	PERCENT OF ULTIMATE TOTAL
LeBaron Estates	40,500	14,256	14,256	104,036	119,426	1
Spanos Park East	525,000	16,7284	16,7284	1,315,340	1,340,420	8
Spanos Park West	411,600	184000	184,000	1,131,640	1,898,860	11
North Stockton Projects	67,500	44,800	44,800	213,370	371,260	2
North Stockton Pipelines Extension - Active Projects	168,000	260,000	260,000	813200	2,591,960	15
North Stockton Pipelines Extension - Planned Development Area			908,800		8,201,920	48
TOTAL	1,212,600	670,340	1,517,540	3,577,586	14,493,846	100

Source: Thompson-Hysell, 2003

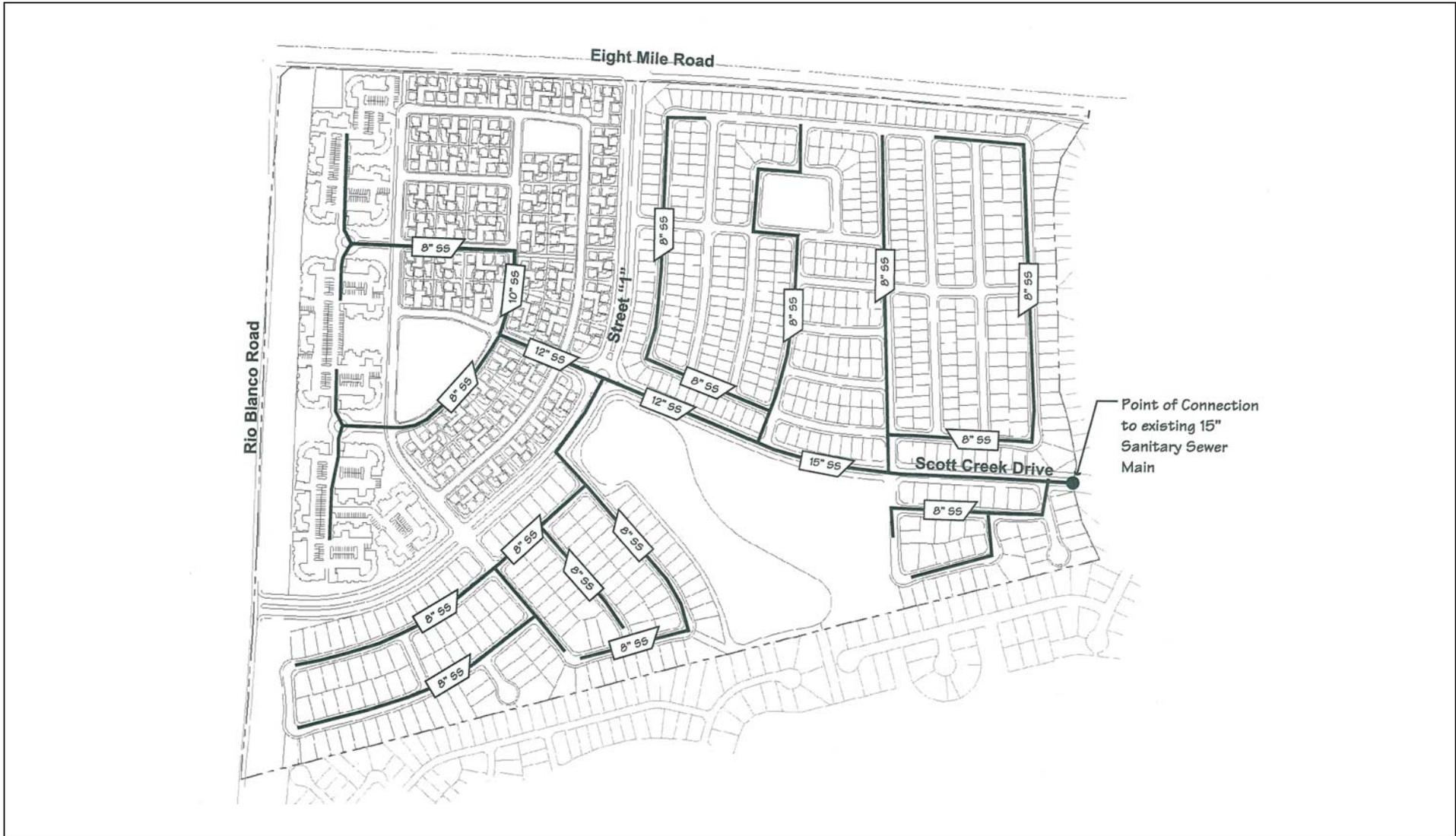


FIGURE 4.11.1

LSA



SOURCE: Kimley-Horn, 2007

P:/AGS438/Graphics/4.11.1.cdr (5/15/07)

Crystal Bay
 Conceptual Sanitary Sewer Master Plan

Non-Potable Water

The existing site currently utilizes non-potable irrigation water for agricultural purposes. This source is delivered from the existing irrigation system serving the project site.

Communication Services

Telephone service to the project area would be provided by AT&T. The communications facilities will be routed underground in public utility easements following the street alignments and will include a mix of fiber-optics, copper cable, and their supporting facilities. Although the trench layout has not been specified, it generally consists of multi-conduit facilities within the backbone streets, in addition to conduit direct buried facilities within the collector and neighborhood streets.

Cable television services to the City of Stockton are provided by Comcast. Cable services are subject to Chapter 12 of the Stockton Municipal Code entitled "Cable Television Franchises Procedures, Specifications, and Terms."

Wireless communications would be provided by a variety of carriers. Section 16-320.020 of the Stockton Municipal code sets forth criteria for the location of wireless communication facilities.

4.11.2 Impact Significance Criteria

Potential significant impacts associated with public utilities and service systems have been evaluated using the following criteria:

Wastewater/Non-Potable Water

WW-a Adequacy of proposed and/or planned system modifications to meet proposed demand; and

WW-b Ability of treatment plant to meet proposed demand.

Communication

COM-a Increase in telephone service demand would substantially interfere with the ability of Pacific Bell to serve the existing customers; and

COM-b Increase in cable television service demand would substantially interfere with the ability of the cable service provider to serve the existing customers.

4.11.3 Impacts And Mitigation Measures

Effects Considered to be Less than Significant

Impact COM-1: The project may result in the increase in telephone and cable service demand which may interfere with the ability of utility providers to serve the existing customers.

Capacity for both telephone service and cable television service would need to be expanded in order to serve the project area. Telephone service to the project area would be provided by AT&T while cable television services will be provided by Comcast. Extension of telephone services and cable television services would occur in conjunction with the installation of other private utility facilities and public improvements. The conditions outlined in **Significance Criteria COM-a** and **COM-b** are not expected.

Potentially Significant Effects

Non-Potable Water

Impact NPW-1: The project will utilize a non-potable water source to accommodate the project demand for non-potable water needs.

Water solely used for irrigation of the various parks, common landscaped areas and planting strips within the public right of way will be supplied by the on-site lake and conveyed in a "purple pipe" (non-potable water) system. The lake system design would include a series of small pumps that would deliver pressurized water into the purple pipe system.

The use of treated lake water for irrigation would have the following benefits: (1) reducing the demand for potable water serving the project; (2) providing another valuable function for the man-made lake; (3) improving the water treatment capability of the lake by increasing lake circulation and reduced lake maintenance through increased water movement and hindering eutrophication.

Three sources of non-potable water may be utilized to maintain the lake water level as well as provide for irrigation of common areas. The first source will be the dewatering of the area adjacent to the levee. A toe drain will be installed at or adjacent to the levee per the Reclamation District 2042 requirements. The toe drain will capture ground water and dewater the site adjacent to the levee. Water captured from the toe drain would be pumped to the lake, and then used to maintain the lake level and provide for irrigation of the common landscaped areas.

The second source of non-potable water would be from the Delta at Bishop Cut. The parcels that comprise the project area have historic riparian water rights to utilize water from the Delta for the irrigation of the property. Water from the Delta would be pumped from the existing facilities, which would be modernized, to the lake and would be used in a similar manner as discussed above. This would also provide for a more consistent water supply in the event that the dewatering of the site does not provide enough.

The final source of non-potable water may be through an agreement with the adjacent Westlake project. If surplus non-potable water is available from Westlake, surplus water from their lake system could be pumped to Crystal Bay. The benefits of this alternative are that permits from the agencies having jurisdiction over the discharge of water and the construction of improvements necessary to release water into the Delta may not be necessary.

Mitigation Measure NPW-1: The owners, developers and/or successors-in-interest shall establish a maintenance entity, acceptable to the City of Stockton to provide funding for the operation, maintenance and replacement costs of the non-potable water distribution system.

Implementation of the above measure will ensure that the non-potable water demands will be accommodated in the long-term.

Wastewater

Impact WW-1: Existing and proposed wastewater conveyance facilities are expected to have adequate capacity to meet proposed project demand.

As mentioned in the Existing Setting, the existing sewer lines in Westlake Villages and Spanos Park West have been sized to accommodate additional demand in the North Stockton area. The project engineer (Kimley-Horn) will submit preliminary sewer plans to the City's Municipal Utilities Department for comment. According to Kimley-Horn, the City has indicated that sufficient sewer line capacity is available to serve the proposed project.

Mitigation Measure WW-1a: Prior to issuance of building permits, the owners, developers, and/or successors-in-interest shall pay the applicable sewer connection fees required for improvements to the City's Regional Wastewater Collection Facilities. The Community Development Department will ensure that sewer connection fees are paid in conjunction with building permit issuance.

Mitigation Measure WW-1b: An assessment of the 14-Mile SPS was prepared for the City that indicates the SPS does not have capacity to meet the needs of the proposed project. Therefore, the developer shall contribute a fairshare contribution to upgrade the 14-Mile SPS to ensure that the system can adequately service the proposed project. Accordingly, the City of Stockton will condition the approval of applicable tentative maps, subdivision improvement plans, and building permits. The Department of Community Development will ensure that connection fees are paid in conjunction with building permit issuance.

Development of the proposed project would require construction of additional infrastructure on-site to accommodate wastewater collection. Payment of sewer connection fees and fairshare upgrades to the 14-Mile SPS as required by the above mitigation measures would reduce the impacts to wastewater conveyance facilities to a less than significant level.

Impact WW-2: Sewage demand generated by the proposed project is not expected to exceed the capacity of the wastewater treatment plant.

The wastewater treatment plant currently has limited excess capacity to serve new projects. With a current capacity of 42 mgd, and peak usage ranging from 32 to 40 mgd (depending on the canning season), approximately 2-10 mgd is available at present for new projects, until the plant reaches capacity. It is the City's policy to provide treatment capacity as it is required. The plant has been designed to accommodate treatment expansion on an incremental or modular basis. Additional

capacity of approximately 6 mgd will be available with the next expansion, for a total of 48 mgd. Each project is served on a first-come, first-served basis. With the expansion capabilities of the wastewater treatment plant, the conditions presented in **Significance Criterion WW-b** will be avoided.

Mitigation Measure WW-2: Prior to issuance of building permits, the applicant shall pay the applicable Sewer Connection Fees required for Improvements to the City's Wastewater Collection Systems. The City of Stockton will include the mitigation measures as stated above as a condition of approval for the applicable tentative maps, subdivision improvement plans, and building permits. The Department of Community Development will ensure that connection fees are paid in conjunction with building permit issuance. The Departments of Community Development and Public Works shall verify that all conditions of approval appear on the actual building plans and that compliance with the conditions is checked in the field during construction and operation, as appropriate.

Implementation of the above mitigation measures will reduce the impact on wastewater treatment facilities to a less than significant impact.

4.11.4 Level of Significance after Mitigation

Implementation of the proposed project will not have a significant impact on utilities and service systems. Potential impacts for utilities and service systems would be mitigated through the collection of connection and/or development fees or through implementation of conservation and monitoring programs.

4.12 AESTHETICS/LIGHT AND GLARE

4.12.1 Existing Setting

Visual Character of the Site

The topography of the area is typical of the San Joaquin Valley and Delta region with elevations around sea level or slightly above. This area is characterized by flat, featureless landforms. Local vegetation occurs primarily along the eastern project boundaries at Bishop Cut. During the growing season, the site is characterized predominantly by row crops. To the east and south, a major residential subdivision is under construction. These characteristics of the project site are fairly typical of the undeveloped northwest Stockton/San Joaquin County region.

There is currently no artificial lighting on the property.

In general, there are no unique aesthetic features, either natural or manmade, that are visually unique on the project site. Features found on the project site are characteristic of those commonly found associated with agricultural uses throughout the region.

Visual Character of Adjacent Uses

Agricultural uses are present to the north and east. These uses are present across Eight Mile Road and Bishop Cut. The golf uses (The Reserve at Spanos Park) are also located north of Eight Mile Road and east of the site. The golf uses present a manmade landscape that is considered to have high aesthetic value due to the extensive use of turf and ornamental landscaping. Residential uses are located directly west and south of the project site at Westlake Villages. The project site is directly bounded to the west by Bishop Cut. The water resources provide high aesthetic value.

Existing Views of the Site

The site is visible from two public viewpoints. They are:

- Eight Mile Road (visible from passing motorists)
- Bishop Cut (visible from boaters)

From Eight Mile Road, the current view extends unobstructed down the length of the site to Westlake Villages.

Impact Significance Criteria

Potential significant impacts associated with visual quality have been evaluated using the following criteria:

- VIS-a** Reduction in scenic quality due to high contrast with existing conditions or elimination of unique landscape features;
- VIS-b** Introduce physical features which are substantially out of character with existing and planned uses in the surrounding area;
- VIS-c** Have a substantial, demonstrative negative aesthetic effect;
- VIS-d** Create substantial sources of light or glare; and
- VIS-e** Create shade/shadow images that adversely impact existing residential development.

Impacts And Mitigation Measures

The proposed project has been evaluated for potentially significant visual impacts that would be attributable to construction of structures, supporting infrastructure, and major landscaping.

Effects Found Not to Be Significant

Impact VIS-1: The project may reduce the scenic quality due to high contrast with existing conditions or elimination of unique landscape features.

The project site is located in an area that has historically been agricultural in character. The surrounding area south of Eight Mile Road, however, is converting to urban uses (e.g. Spanos Park West and Westlake Villages). Unique landscape features are not located within the project boundary. The project will complement the adjacent Westlake Villages residential development. The proposed project will provide continuity to the area by complementing adjacent land uses (**Significance Criterion VIS-a**).

Impact VIS-2: The project may introduce physical features which are substantially out of character with existing and planned uses in the surrounding area.

With the proposed development, topographical features of the site will be retained in a primarily flat or level condition. Riparian habitats associated with Bishop Cut will not be significantly impacted by the proposed project or impacts will be mitigated to less than significant levels. Open space land uses (bike and pedestrian trails) are proposed along the existing levees. These uses provide an appropriate buffer to the more intense urban uses proposed in the project. The project will serve as an extension of Westlake Villages, providing visual continuity to the area. Specifically, soundwalls and fences planned for the project are typical of the Spanos Park West community and will be constructed around the perimeter of Crystal Bay, consistent with surrounding developments. Fences and soundwalls will be decorative and landscaped to soften the interface. Therefore, the project will not introduce physical features which are substantially out of character with existing or planned uses for the area (**Significance Criterion VIS-b**).

Impact VIS-3: The project may have a substantial, demonstrative negative aesthetic effect.

As indicated in the Project Description (Section 3.3), a Master Development Plan has been prepared as a requirement of the request entitlements. The purpose of the Master Development Plan is to present a framework for project development that ultimately enhances site aesthetics and visual amenities. The site has been planned as an extension of Westlake Village, thereby creating a positive effect for the area. (**Significance Criterion VIS-c**).

Impact VIS-4: The project may create shade/shadow images that adversely impact existing residential development.

The proposed structures within Crystal Bay will be a maximum of two stories. Due to these height restrictions, the proposed residences will not create shadows that negatively impact Westlake villages. Therefore, **Significance Criterion VIS-e** will not occur.

Potentially Significant Effects

Impact VIS-5: Implementation of the proposed project could result in potentially significant nighttime light, both during and after construction.

After project buildout, there will be several new sources of light during nighttime hours. Glare from residential structures is not expected to be significant due to the traditional use of non-glare materials in construction, and low-intensity association with residential uses.

The new light sources may negatively impact wildlife species located within, near, or traveling through the project area. However, due to the proximity of Westlake Villages and SPW and associated light sources, impacts to wildlife are not expected to be significant.

Most of the new nighttime light sources would be created by street lighting, and lights from individual residences. While these new light sources are not expected to be significantly different from typical uses in these categories, the change in light conditions from vacant land to urban development will be substantial. Simply stated, the site will have new sources of light where none previously existed.

The Master Development Plan text includes development standards and design guidelines for outdoor lighting and illumination. Implementation of these standards and design guidelines will mitigate the potentially adverse effects of light and glare on the environment. Therefore, the conditions outlined in **Significance Criterion VIS-d** will be avoided. Lighting standards and design guidelines from the MDP are outlined as follows:

All outdoor lighting for the illumination of landscaped areas, buildings, parking areas and pathways shall comply with the standards of the City and the design guidelines included in Chapter Six of the Master Development Plan. General lighting guidelines are as follows:

1. All lighting fixtures located within Crystal Bay shall conform to Pacific Gas & Electric Company and City of Stockton standards.
2. Photocell monitoring equipment should be installed with all lighting equipment, where feasible, to ensure efficient use of energy and minimize unnecessary “on-time”.
3. Site and street lighting should be designed and installed to minimize glare on adjacent properties, buildings, and right-of-way. Additionally, lighting should be installed in such a manner to reduce the effect of ambient lighting and “light pollution.”
4. Within the residential areas of the development, lighting should be located at intersections and along streets for safety and security. Street lighting should conform to standards established by the City of Stockton.
5. Light standards’ bases should be above grade and all electric service should be located below grade.
6. Lights should blend with the architecture of the buildings and structures, and be complimentary to the streetscape design.
7. All lighting shall be reviewed and approved by the Design Review Board.

The following are “Streetscape Lighting Guidelines” presented in the Master Development Plan.

1. Streetlights and traffic signals, as well as other lights in public spaces, should be of simple design.
2. Street lighting throughout Crystal Bay should be consistent on similar streets. All lighting fixtures shall be reviewed and approved by the Design Review Board and the City Engineer.

The following mitigation is also required:

Mitigation Measure VIS-1a: Mitigation may include prior review and approval of building materials and lighting specifications by the Crystal Bay Review Board and City Community Development Director. Downcast lighting should be used where feasible. To ensure compliance with specification set forth by the Crystal Bay Design Review Board and City Community Development Director, the applicant should maintain control over all development within the project site. This can be done through compliance with the Master Development Plan and conditions placed on the covenants, conditions, and restrictions established by the applicant for the development.

Mitigation Measure VIS-1b: Prior to site plan review for development, the applicant shall provide evidence to the Design Review Board that non-reflective building materials will be used. The City’s Community Development Director or Architectural Review Committee shall review and approve building materials and their applications to ensure light and glare effects are minimized.

Implementation of the above listed measure would reduce impacts from glare and lighting to less than significant levels. Consequently, the conditions included in Significance Criterion VIS-d will be avoided.

Impact VIS-6: Implementation of the proposed project will impact views from Eight Mile Road, Bishop Cut and Westlake Villages.

Motorists traveling along Eight Mile Road will have temporary views of the residential development including the landscape/streetscape treatment along Eight Mile Road. These views will be consistent with the adjacent Westlake Villages development. Views from within the adjacent Westlake Villages will be limited to residences along the western edge of that development. These views will also be consistent with the surrounding development.

Boaters using Bishop cut could have views of the multi-family residential development. These views will be buffered by the preexisting levee, and may change due to the tidal influence in Bishop Cut. Figure 4.12.1 illustrates a cross-section of the relationship between the waterway and the proposed multi-family residential uses. As shown, a portion of the future residences will be visible above the top of the levee. This exposure will occur for a distance of 2000-feet adjacent to the slough, and will be intermittent due to a discontinuous building façade. Overall, the view will represent the transition of these lands to urban development.

West of Crystal Bay

The adjacent lands west of the proposed project (across Bishop Cut) are undeveloped and are designated for agricultural use. Since these lands are unoccupied, the visual effects on the agricultural uses are insignificant.

North of Crystal Bay

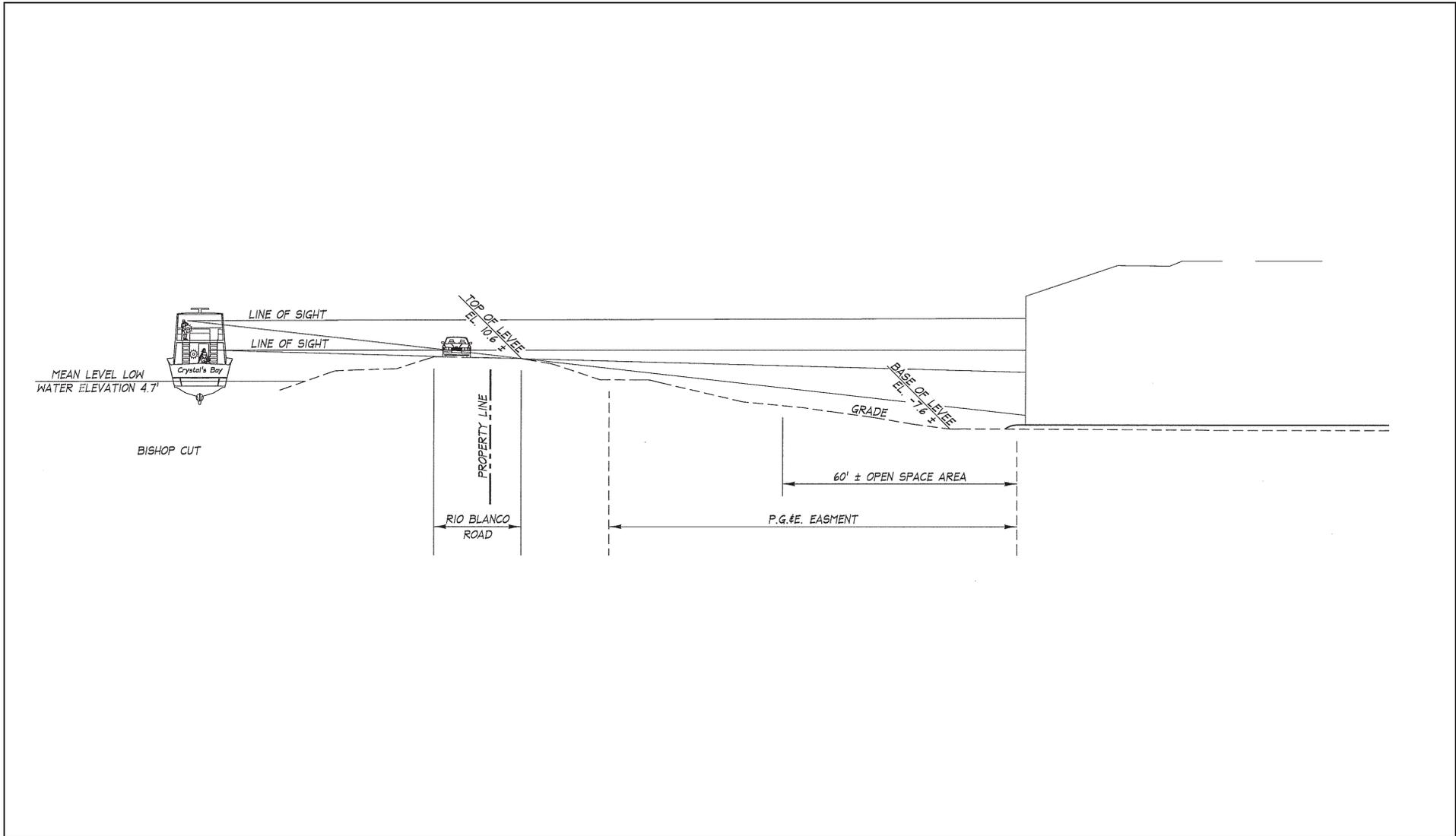
Visitors to The Reserve at Spanos Park golf course will also have views of the residential development. These views will be consistent with the Westlake Villages and SPW developments and are not considered significant.

The adjacent lands north of the proposed project (across Eight Mile Road) are undeveloped and are designated for agricultural use. Since these lands are unoccupied, the visual effects on the agricultural uses are insignificant.

The following standards and design guidelines are proposed in the MDP.

Landscape Buffers

Landscape buffers are required along the entire project frontage at Eight Mile Road, and on both sides of the arterial and collector streets in Crystal Bay. No buildings or parking areas are allowed within these buffer areas. Monument signs, entry treatments, pathways, lighting, and street furniture are allowed in the buffer area. These buffers are measured from the face of curb to the property line of the adjoining parcel (typically the public right-of-way), and in some cases is expanded by an additional landscaping parcel owned and maintained by the HOA.



LSA



FIGURE 4.12.1

Crystal Bay
Levee Cross Section

SOURCE: Kimley-Horn, 2007

Landscape Requirements

- The landscape plans for all development projects proposed for the Project shall conform to the design guidelines contained in Chapter Seven of this Master Development Plan.
- Street tree landscape plans shall reflect the tiered hierarchy of the roads and streets in Crystal Bay and shall reinforce the identity and character of the roadway network as defined by this Master Development Plan. The street tree planting scheme shall conform to the plant materials list include in Chapter Seven.
- A landscaped area, five feet (5') wide, shall be placed at the end of the parking bays, extending to the end of the parking spaces. A maximum of ten (10) stalls between tree well shall be provided at all single row parking, and a maximum of five (5) stalls between tree wells at double row parking areas.
- Accent trees should be used to delineate parking aisles and serve to guide traffic and frame the entrance to parking areas, as well as denote pedestrian access points. These trees should be distinct in form and flower and should contrast to some extent with the species selected to provide shade in the same parking area.
- The street tree landscape plan shall identify the species and location of all trees to be planted during the installation of the backbone infrastructure for Crystal Bay. Subsequent development proposals within Crystal Bay shall also be required to include a Street Tree Landscape Plan. These plans shall be subject to the review and approval of the Design Review Board.
- Landscape Plans for any development in Crystal Bay shall consider service lines, traffic safety sight line requirements, and structures on adjacent properties to avoid conflicts as the landscape elements mature. Street trees and trees planted in landscaped areas near public walkways or street curbs shall be selected and installed to prevent reasonable damage to sidewalks, curbs, gutters, and other public improvements. Tree species with invasive root systems shall not be allowed near water lines or sewer lines. All landscape plans shall be subject to the review and approval of the Design Review Board.
- Automatic irrigation systems shall be installed in all public areas, rights of way, commercial/office mixed use areas and residential areas. Irrigation Plans shall include low volume spray heads and drip emitters when practical. Irrigation Plans shall be compatible with reclaimed water systems or other water conservation techniques as appropriate.
- The Plant Palette included in Chapter Seven of this Master Development Plan shall be used to prepare the Landscape Plans for all areas of development within Crystal Bay. Plant materials not included on the palette included in Chapter Seven shall be subject to the review and approval of the Design Review Board.
- Landscape maintenance practices shall include irrigation at regular intervals necessary to promote plant health, pruning, clearing of debris and weeds, removal and replacement of dead or dying plant materials, and repair and replacement of non-functioning or damaged irrigation equipment. Areas of lawn or ground cover shall be trimmed or mowed on a regular schedule. Fertilization, cultivation and pruning of trees shall be part of the regular maintenance program. Stakes, guy wires, and tree ties shall be checked regularly for proper function and removed once the plant

material is established according to the intent of the landscape plans. Ties are to be positioned correctly as necessary to avoid damage to tree trunks or branches.

- Development projects within Crystal Bay shall include design characteristics of the project that incorporate the concept of "defensible space", such as increased lighting, low-level landscaping to reduce cover for intruders and entrances and windows facing on main access ways.
- All development plans for projects proposed within Crystal Bay shall be reviewed and approved by the Design Review Board and the Site Plan Review Committee of the City of Stockton. The Master Developer, or his successors in interest, shall implement all crime deterrence measures as required by the City. Compliance with these requirements shall be noted on project building and landscape plans and shall be monitored through site inspection by City staff prior to the issuance of certificates of occupancy.

Landscape Maintenance Requirements

With the exception of the 8-acre neighborhood park, all landscaped areas, view corridor areas, access corridors/alleys, pocket parks, and open space areas (including the lake) within Crystal Bay shall be maintained by the Master Developer, by a Commercial Tenant Owner's Association, or by another maintenance entity acceptable to the City of Stockton. The 8 acre public park shall be maintained by the City Consolidated Landscape Maintenance District and any publicly accessible pocket parks or open space can also be maintained by the District.

Equipment and Utility

All utilities that provide service to Crystal Bay shall be placed underground.

- Equipment and mechanical devices shall not be located in any required setback area or side yard except for electrical, telephone or fiberoptic lines installed by the service provider.
- Equipment areas shall be screened by structures or landscape materials that are compatible with the architectural character of the building or structure as determined and approved by the Design Review Board.
- Storage of recreational vehicles, trailers, boats, or their component parts, loose rubbish, garbage, garbage receptacles, tents, or building materials shall not be allowed within residential villages/neighborhoods if publicly visible. Sport Utility Vehicles are exempted.
- Building materials for use on the same premises may be stored on a lot or parcel during the time that a valid permit is in effect for construction on that site.

Implementation of the standards set forth in the Master Development Plan will minimize the effects on visual resources.

4.12.4 Level Of Significance After Mitigation

The development and design standards outlined in the Master Development Plan provide measures to offset potential visual resource impacts. Implementation of the standards set forth in the Master Development Plan will create a less than significant impact on visual resources.

4.13 CULTURAL RESOURCES

A technical cultural resources study was prepared for this site by LSA Associates, Inc. entitled *A Cultural and Paleontological Resource Study for the Spanos Parcel Project*, May 2005. For confidentially purposes, the document is available for review (by permission) at the City of Stockton, Community Development Department.

4.13.1 Environmental Setting

Cultural Setting

Prehistory

The Stockton area was probably settled by native Californians between 12,000 and 6,000 years ago. The Paleo-Archaic-Emergent cultural sequence developed by Frederickson (1974) is commonly used to interpret the prehistoric occupation of Central California. The sequence is broken into three broad periods: the Paleoindian period (10,000-6,000 B.C.); the three-staged Archaic period, consisting of the Lower Archaic (6,000-3,000 B.C.), Middle Archaic (3,000-1,000 B.C.) and Upper Archaic (1,000 B.C.-A.D. 500); and the Emergent period (A.D. 500-1,800).

The Paleo period began with the first entry of people into California. These people probably subsisted mainly on big game, minimally processed plant foods, and had no trade networks. The Archaic Period is characterized by increased use of plant foods, elaboration of burial and grave goods, and increasingly complex trade networks (Bennyhoff and Frederickson, 1994; Moratto, 1984). The Emergent Period is marked by the introduction of the bow and arrow, the ascendance of wealth-linked social status, and the elaboration and expansion of trade networks, signified in part by the appearance of clam disk bead money (Moratto, 1984).

Ethnography

Ethnographically, the project area may have been the territory of the Plains Miwok or the Northern Valley Yokuts. According to Wallace (1978), the location belonged to the Plains Miwok: Levy (1978) depicts the location of the project area in Northern Valley Yokuts territory. Bennyhoff (1977) places the location of the project area on the boundary of the two groups. The ethnographic affiliation of this region is a subject of controversy (Wallace 1978:462).

Northern Valley Yokuts territory extended from a line midway between the Mokelumne River and the Calaveras River south to near where the San Joaquin River makes a big bend toward the east (Wallace 1978:462). The western limit has been identified as the eastern side of the Coast Range (Milliken 1994) while the eastern limit extended to the juncture of the San Joaquin Plain and the foothills of the Sierra Nevada (Wallace 1978:462, 466). Yokuts settlements were typically placed on low mounds near the banks of large water courses like the San Joaquin River. This elevated position helped keep the inhabitants, their houses and possessions above the spring flood waters. The abundant riverine environment allowed a sedentary lifestyle and influenced succeeding generations to remain at the same sites (Wallace 1978:466).

Plains Miwok territory covered both banks of the Cosummes and Mokelumne rivers, and included both banks of the Sacramento River from approximately Rio Vista in the south, reaching almost to Sacramento in the north (Levy 1978:398). The foothills of the Sierra formed the eastern boundary (Bennyhoff 1977:165). Linguistically, the Plains Miwok were part of the Eastern group of the two subdivisions of Miwokan speakers (Levy 1978:398, 399). Plains Miwok settlements were located along the banks of the Sacramento, Cosumnes, and San Joaquin rivers and their tributaries. Dwellings were circular thatched structures, with some underground structures belonging to wealthier individuals (Levy 1978:408-409).

Stockton History

Captain Charles M. Weber purchased the land that would become Stockton from William Gulnac in 1845. Originally known as Tuleberg, Weber changed the name in 1849 in honor of Commodore Robert F. Stockton (Hoover et al., 1990:350).

During the California Gold Rush, various trails led from Stockton to the gold fields and Weber recognized early that the City would become profitable as a supply and shipping center for gold miners. With the opening of the Southern Mines, Stockton grew rapidly in importance and size, and soon became a flourishing trade center (Marschner, 2000). Miners made their way to Stockton by boat up the San Joaquin River or over the Livermore Pass. Commerce grew and freighting and staging activities developed along with the cattle and agriculture industries. With the establishment of churches and schools, Stockton became a permanent settlement. By 1850, 5,000 people lived in Stockton. The City was incorporated and became the county seat (Hoover et al., 1990). In 1851, Stockton was nearly destroyed by fire. Subsequent fires in 1856 and 1862 resulted in the need for more permanent structures, and stone and brick establishments were built in the commercial district, including a new city hall that was erected in 1852 (Costello and Marvin, 1999:13-14).

In the 1860's, the City began making civic improvements that included road construction, street improvements, and sewer works, in addition to building more churches, schools, and volunteer fire companies. By the mid 1860's, residential neighborhoods were also being developed. In the 1880's and 1890's, grain mills and warehouses were constructed, along with manufacturing plants and lumber yards, near the Stockton Channel. More farmlands were developed to provide for the growing population (Costello and Marvin, 1999:14-15).

The first inland seaport in California opened in Stockton in 1933 and by the late 1930's, Stockton was known for its boat building industry which included the paddle-wheel steamers the Delta King and Delta Queen that navigated the San Joaquin River from 1850 to 1938. Local shipyards were active during World War II, filling government contracts; by 1943, fifty firms were supplying the wartime effort. The late 1940's saw a growth of residential and commercial areas to the north of Stockton and by the 1970's, the population almost quadrupled (Hillman and Covello, 1985:5-9).

Today, with a population of 260,000, Stockton remains the focal point for agribusiness in the San Joaquin Valley. The rich farmland of the San Joaquin/Sacramento River Delta supports varied agriculture, including potatoes, corn, sunflowers, tomatoes, asparagus, and wine grapes. Stockton is also known as a major transportation hub and a popular water recreation areas that has over 1,000 miles of waterways for boating and water sports (City of Stockton, 2003).

Delta History

Although provisioning the gold mines contributed to Stockton's early development, it was agriculture that would provide for the City's long term growth and success. Farmers were drawn to the Delta area's fine silt and deep peat soils when the gold rush began to wane. The only obstacle was the over abundance of water.

In 1850, Congress passed the Swamp and Overflow Land Act which gave all states any unsold federal land that was swamp or subject to overflowing. Under the act, states were to ensure that the lands would be drained, reclaimed, and used for agricultural purposes. Delta ownership was passed from the federal government to the state, and by 1855, California had passed the Reclamation District Act providing for the sale of the swamp and overflow lands.

Major attempts to reclaim sections of the Delta did not begin until the completion of the transcontinental railroad in 1869. A ready source of labor became available when the railroad's Chinese labor force found themselves without work. They made their way to the Delta, where they built the first levees around a number of islands. In the late 1870's, the clamshell dredge was invented which soon replaced human labor in building levees.

By the 1920's, 1,100 miles of levees were protecting 420,000 acres of what may be the most productive farmland in the world. Because of its contribution to California's agricultural development, the Delta levee system is listed in Historic Civil Engineering Landmarks of Sacramento and Northeastern California along with other significant civil engineering achievements, the majority which may be considered Local Historic Civil Engineering Landmarks (American Society of Civil Engineers, 1976:26).

Agriculture continues to be San Joaquin County's core industry (Locke, 2003). San Joaquin County ranked sixth in the state in agricultural production in 2002. It ranked number one in California in the production of English walnuts, cherries, asparagus, apples, pumpkins, grain corn and in the top five in a number of crops including potatoes (University of California Cooperative Extension, San Joaquin county 2003).

Paleontological Setting

The project area lies on the northern San Joaquin Valley. The fertile soils of this valley have an average depth of between 5 to 6 feet within and adjacent to the project area (McElhiney 1992). The sediments underlying the soil are Quaternary alluvium generally derived from the east by the erosion of the Sierra Nevada Range. This alluvium consists of Modesto Formation sediments underlain by Early Tertiary marine sediments.

Modesto Formation

The project area and much of the San Joaquin Valley lies on late Pleistocene alluvial sediments of the Modesto formation (Wagner et al. 1991). These arkosic (sandy) alluvial sediments are transported from the Sierra Nevada Range.

Sediments of this age, similar to those within and adjacent to the project area, have produced significant vertebrate fossils from the Rancholabrean land mammal age (Marchand and Allwardt 1977). Such fossil remain include sloth, dire wolf, saber-toothed cat, camel, bison, mammoth, horse, rodent, bird, reptile and amphibian fossils (Savage 1951; Stirton 1951, Bell et al. 2004).

Undifferentiated Early Tertiary Marine Deposits

Modesto Formation sediments are underlain at extreme depth (hundreds of feet) by Early Tertiary (between 65 million and 25 million years) marine sediments (Wagner et al. 1991). Little is known about these marine deposits at any point near the project area as they are buried deep beneath the surface. Such deposits will not be encountered by the project.

Field Review

The Spanos Parcel (Crystal Bay project site) was surveyed in May and June of 2003 as part of the cultural and paleontological resources studies for the Paradise (Westlake) Village Development Project (Kelley and Huster 2003). LSA archaeologist John Kelley conducted a cursory pedestrian review of the project area on January 25, 2005, concentrating on archaeologically sensitive areas. The project area consisted of wet, furrowed fields with visibility limited to approximately 10% due to grasses and forbs.

Areas of exposed ground, including irrigation ditches and farm roads, were reviewed for possible archaeological deposits. Rodent backdirt was reviewed and small areas of ground were periodically exposed by trowel and examined for archaeological deposits. The current survey was documented in field notes, maps, and photographs.

The records search indicated that the project area is park of P-39-004492, the Southern Bishop Tract Farm (Kelley and Huster 2003). The main elements of the farm, including the 1910 to 1920 era farm house and barn, two collapsed sheds, a debris pile, and various pieces of farm equipment including tractors and trailers, have been removed since they were recorded in 2003. The farm, which includes the Spanos Parcel, is not eligible for listing in the National or California registers since it no longer retains integrity to convey its historical significance.

A section of the eastern slope of the Bishop Cut levee is adjacent to the project area. The levee is a part of the Delta levee system, which is a Local Historic Civil Engineering Landmark (American Society of Civil Engineers 1976:26). The levee was substantially raised and widened in 1991-92 as part of a 100 year flood control program (Neudeck 2005). The levee is not eligible for listing in the National or California registers under any of the four significance criteria because it no longer retains the integrity necessary to convey its significance.

Five buildings are depicted adjacent to the east side of the Bishop Cut on the USGS 1952 *Terminous, Calif.*, 7.5-minute topographic quadrangle. Intensive survey of the area of the buildings did not identify any remains. No other cultural resources were identified in the project area as a result of this study.

Two vertebrate fossil localities are recorded within five miles of the project area. These localities are from geologic formations similar to the Modesto Formation. Late Pleistocene Modesto Formation deposits within and directly adjacent to the project area have a high potential to contain significant fossil resources. No paleontological resources (fossils) were identified within or adjacent to the project area by this study. The soils within the project area report to be at least 5 feet in thickness (McDlhiney 1992) and there is a low potential of encountering paleontological resources within them.

4.13.2 Impact Significance Criteria

Potential significant impacts associated with cultural and paleontological resources have been evaluated using the following criteria:

- CR-a** The proposed project would result in damage to important cultural resources;
- CR-b** The proposed project would result in damage to potentially important cultural resources (i.e., unevaluated milling feature sites);
- CR-c** The proposed project would result in damage to previously undiscovered cultural resources;
and
- CR-d** The proposed project would result in direct or indirect destruction of a unique paleontological resource or site or unique geological feature.

Under CEQA only those cultural resources deemed important (e.g., California Register of Historic Places [California Register] or National Register of Historic Places [National Register]-eligible) can be significantly affected (i.e., impacted) with project implementation.

A cultural resource is evaluated under four California Register criteria to determine its historical significance. A resource must be significant at the local, state, or national level in accordance with one or more of the following criteria:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- Is associated with the lives of persons important in our past;
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic value; or,
- Has yielded, or may be likely to yield, information important in prehistory or history.

Additionally, the Society of Vertebrate Paleontology has identified vertebrate fossils, their taxonomic and associated environmental indicators, and fossiliferous deposits as significant nonrenewable paleontological resources. Botanical and invertebrate fossils and assemblages may also be considered as significant.

4.13.3 Impacts and Mitigation Measures

Potentially Significant Effects

Impact CR-1: Project site development could potentially effect known and unknown resources with cultural significance.

The farm identified during the field survey has been removed from the site. Therefore, construction activities will not impact the previously identified structures. However, artifacts associated with these structures and era may exist below the surface.

In addition, although paleontological resources were not identified on the site, two vertebrate fossil localities have been identified within five miles of the project site and contain the same geological formations as the project site. (**Significance Criteria CR-a through CR-d**).

Mitigation Measure CR-1a: Project personnel should not collect or move any archaeological material. Fill soils that may be used for construction purposes should not contain archaeological materials.

Mitigation Measure CR-1b: If deposits of prehistoric or historic archaeological materials are encountered during the project activities, all work within 50 feet of the discovery should be redirected and a qualified archaeologist contacted to evaluate the finds and make recommendations. It is recommended that such deposits be avoided by project activities. If such deposits cannot be avoided, they should be evaluated for their significance in accordance with the California Register. If the resources are not significant, further protection is not necessary. If the resources are significant, they will need to be avoided by adverse effects or such effects must be mitigated. Upon the completion of the archaeological evaluation, a report should be prepared documenting the methods, results, and recommendations. The report should be submitted to the Central California Information Center and appropriate City agencies.

Prehistoric materials can include flaked-stone tools (e.g., projectile points, knives, choppers) or obsidian, chert, or quartzite toolmaking debris; cultural darkened soil (i.e., midden soil often containing heat affected rock, ash and charcoal, shellfish remains, and cultural materials); and stone milling equipment (e.g., mortars, pestles, handstones). Historical materials might include wood, stone, concrete, or adobe footings, walls and other structural remains; filled wells or privies; and deposits of wood, metal, glass, ceramics, and other refuse.

Mitigation Measure CR-1c: During grading of other invasive site construction activities, the contractor shall comply with Section 7050.5 of the California Health and Safety Code. The code states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area

reasonably suspected to overlie adjacent remains until the coroner of the County in which the human remains are discovered has determined whether or not the remains are subject to the coroner's authority. If human remains are encountered, work should halt within 50 feet of the find and the County Coroner notified immediately. The contractor shall also immediately notify the Community Development Director and the Secretary of the Cultural Heritage Board. At the same time, an archaeologist should be contacted to evaluate the situation. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission with 24 hours of this identification. The Native American Heritage Commission will identify a Native American Most Likely Descendent to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.

Mitigation Measure CR-1d: If paleontological resources are identified within the project area, all work within 50 feet of the discovery should be redirected and a qualified paleontologist should be contacted to evaluate the finds and make recommendations. If the paleontological resources are found to be significant, they should be avoided by project activities. If avoidance is not feasible, adverse effects to such resources should be mitigated. Upon completion of the paleontological evaluation, a report should be prepared documenting the methods, results, and recommendations. The report should be submitted to the UCMP and appropriate City agencies.

Because the farmhouse and associated structures have been removed, impacts to this resource will not occur. Implementation of the mitigation measures will mitigate impacts to unknown cultural or paleontological resources.

4.13.4 Level of Significance after Mitigation

Implementation of mitigation measures will mitigate impacts to unknown cultural or paleontological resources.

4.14 HAZARDOUS MATERIALS/WASTES

4.14.1 Environmental Setting

A visual site survey was conducted for the Westlake Village project site, which included the Crystal Bay project area, on June 10, 2004. No major areas were identified as containing improperly stored and/or disposed hazardous materials and wastes.

A government records search, prepared by Environmental Data Resources, Inc. for the Westlake Villages project, indicates that no spills, accidents, or releases of hazardous materials or wastes have been reported for the Crystal Bay project site. The records search also indicates that the operator of the project site is not registered as a generator of hazardous wastes.

4.14.2 Impact Significance Criteria

HAZ-1 Development of the project would create a substantial hazard to the public or environment due to the release of hazardous materials or wastes.

4.14.3 Impacts And Mitigation Measures

Potentially Significant Effects.

Impact HAZ-1: Due to the existing conditions of the site, the environment and construction workers could be exposed to hazardous wastes and materials.

The government records search did not identify any major spills or accidents on the site or project vicinity. Nor were any hazardous materials or wastes discovered as a result of the visual site survey.

It is not expected that the proposed land uses (residential and recreation) will introduce hazardous materials to the environment or the general public. Hazardous substances may be used in conjunction with construction activities. To prevent the accidental release of these substances, mitigation is provided below to offset potential impacts.

Mitigation Measures HAZ-1: A Spill Prevention and Containment Plan (SPCP) will be prepared prior to the commencement of any construction activities. The SPCP will identify any and all hazardous materials that will be used or stored on site, and will also identify any hazardous wastes that might be generated by the proposed project. The SPCP will detail proper measures to handle and/or transport hazardous materials. The plan will also present procedures to contain or initiate cleanup of any spills. The phone number of the appropriate government agency will be contained on the plan in the event of any release of hazardous substances.

Implementation of the above mitigation measure will reduce this impact to a less than significant level.

4.14.4 Level Of Significance After Mitigation

Implementation of the mitigation measures will reduce potential impacts to a less than significant level.

4.15 ENERGY

Environmental Setting

Energy resources currently used through the project area consists of petroleum products used by vehicles traveling along Eight Mile Road, boaters traveling through Bishop Cut, and farm vehicles/tractors on rural farms. Other energy sources are electricity used for signals and illumination at the Eight Mile Road off ramp, and electricity and natural gas used at the current rural farms/residences on the project site.

Electricity

The Plan Area is within a Pacific Gas & Electric Company service area. PG&E currently serves the existing agricultural operations on the project site and the Spanos Park West development. Additionally, PG&E will serve the Westlake development immediately to the east of Crystal Bay. Two substations provide electrical power to the area around the proposed project, including the Stagg Substation at Feather River Drive and March Lane and the Eight Mile Substation located west of Interstate 5 and north of Eight Mile Road.

Natural Gas

PG&E currently provides service to Spanos Park West and will also serve the Westlake development. The facilities are sized to accommodate service to Crystal Bay. Lines will be extended west from the existing points of connection at Scott Creek Drive and Eight Mile Road. There are also existing gas facilities in Eight Mile Road at the western intersection of Mokelumne Drive.

Impact Significance Criteria

Potential significant impacts associated with energy have been evaluated using the following criterion:

- EN-a:** Increased demand for gas or electricity requiring new production facilities and infrastructure to supply the development; and
- EN-b:** Encouragement of activities that result in the use of large amounts of energy or fuel, or the project uses energy in a wasteful manner.

Impacts and Mitigation Measures

Effects Considered to be Less than Significant

Impact EN-1: The project will not result in increased demand for gas or electricity requiring new production facilities and infrastructure to supply the development Electricity and Natural Gas Services.

In light of the agricultural character of the project site, project implementation will require the construction of new facilities and infrastructure to serve the proposed land uses. Development of the

proposed project would require the installation of additional transmission and distribution lines. Typically, in accordance with Public Utilities Commission Electric Rules 15.1 and 16, Gas Rules 15 and 16, subdivider/utility company cost-sharing agreements are executed to provide for the installation of facilities required to serve new developments (LSA, 2001). It should also be noted that formal approval from the California Public Utilities Commission may be required when relocating electric transmission and substation facilities.

According to planning staff at PG&E, there is adequate capacity available to serve the proposed project with electrical and natural gas service. Consequently, the conditions outlined in **Significance Criterion EN-a** would not occur.

Potentially Significant Effects

Impact EN-2: The proposed project will use large amounts of energy.

The estimated average monthly gas and electrical demands for the residential development within the proposed project is presented in Table 4.15.A.

Table 4.15.A: Average Monthly Gas and Electric Demand for Residential Development

LAND USE	PROPOSED UNITS (MAXIMUM)	THERMS	KW	TOTAL
Proposed Crystal Bay				
Natural Gas	1,363	37		50,320 Therms
Electricity	1,363		600	816,000 Kw

Source: Spanos Park West 1988 SEIR

As shown in Table 4.15.A, the proposed project will need approximately 50,320 therms of natural gas and 816,000 million kilowatts of electricity. While this will significantly increase consumption of electricity and natural gas, utility providers have indicated that the existing system has the capacity to accommodate the increase in electrical service. The conditions outlined in **Significance Criteria EN-2** would not occur.

Mitigation Measure EN-1a: As feasible, the applicant should install energy reducing fixtures and implement energy reducing measures to decrease the amount of energy used.

Mitigation Measure EN-1b: The project shall incorporate principles of passive solar design. Passive solar design is the technology of heating, cooling, and lighting a building naturally with sunlight rather than with mechanical systems because the building itself is the system. Basic design principles are large south-facing windows with proper overhangs, as well as tile, brick, or other thermal mass material used in flooring or walls to store the sun’s heat during the day and release it back into the

building at night or when the temperature drops. Passive solar also takes advantage of energy efficient materials, improved insulation, airtight construction, natural landscaping, and proper building orientation to take advantage of the sun, shade, and wind.

Mitigation Measure EN-1c: The project shall install reflective, *EnergyStar*[™] cool roofs. Cool roofs decrease roofing maintenance and replacement costs, improve building comfort, reduce impact on surrounding air temperatures, reduce peak electricity demand, and reduce waste stream of roofing debris.

Mitigation Measure EN-1d: All residences shall be constructed to meet the requirements of the *EnergyStar*[™] program for new homes. Such residences improve energy efficiency by a minimum of 15 percent as compared to residences that simply meet the Title 24 requirements. The additional efficiency is typically accomplished through the use of tight construction, energy-saving windows, improved insulation, and super-efficient heating/cooling systems.

Mitigation Measure EN-1e: Although there is not a formal *EnergyStar*[™] program for non-residential buildings, all buildings to be constructed by the project could be constructed to meet the same standards as those that apply to the residential program.

Mitigation Measure EN-1f: The project shall incorporate the use of the following in all development, to the extent feasible:

- Installation of motion detectors or dimmers to control lighting;
- Installation of efficient security, street, and parking lot lighting (e.g., high pressure low sodium fixtures);
- Installation of reflective window film or awning on south and west facing windows;
- Installation of ceiling and wall insulation

Implementation of the proposed mitigation measures outlined above would reduce the impact on energy service facilities to a less than significant level.

Level of Significance after Mitigation

Potential impacts to energy resources will be less than significant with the above mitigation.

CHAPTER 5.0 GROWTH INDUCEMENT

At one time, the City considered expanding its planning area to encompass some of the predominantly agricultural lands north of Eight Mile Road. The City prepared an EIR on the Special Planning Area Study. In 1993, the City's Planning Commission considered, but did not certify, the Final EIR and rejected the SPAS General Plan Amendment. Any extension of the City's boundaries north of Eight Mile Road would require the City to re-evaluate the impacts of this action and reconsider its previous decision.

The City's General Plan acknowledges that this area of northern Stockton is a growth area and has set into motion the service and infrastructure requirements necessary to accommodate growth. This effort is being conducted independent of the proposed project plans. For this reason, the project is not considered growth inducing to lands north of Eight Mile Road.

Incompatibility of the agricultural land uses on the Crystal Bay site the proposed project will likely hasten this conversion. The infrastructure design outlined in the Master Development Plan also facilitates the extension of utilities and services to the Crystal Bay site, thereby accelerating land use conversion.

CHAPTER 6.0 ALTERNATIVES

CEQA requires that an EIR include a discussion of reasonable project alternatives that are “capable of eliminating any significant adverse environmental effects or reducing them to a level of insignificance, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly” (CEQA Section 15126 (d)(3)).

Additionally, the CEQA Guidelines, Section 15126 (d), state, “If the environmentally superior alternative is the ‘no project’ alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.”

This section describes the impacts of each of the project alternatives. For each alternative, the alternative is described, a discussion of environmental impacts associated with that alternative is provided, and the responsiveness of each alternative to the project objectives is analyzed. Table 6.1.A provides a comparative summary of impacts associated with each alternative.

6.1 PROJECT OBJECTIVES

The overall goal for the Crystal Bay project is to construct a quality residential development that offers opportunities to live and work within a planned community setting. Further, it is the goal of the applicant to implement a diverse residential community by providing a community with multiple on-site amenities.

The project applicant's objectives for the proposed project include:

- To create a well-designed residential community that is integrated with adjoining residential and commercial development and to provide connectivity with the Delta.
- To facilitate the design and development of a community with neighborhoods diverse in population and activity.
- To provide amenities such as parks, trails, and lakes to enhance project livability.
- To build high quality residential units combining the best of modern development practices with architectural styles and detailing consistent with traditional neighborhoods.
- To create a safe, secure environment with walkable neighborhoods that meet the needs of a diverse market sector.
- To design streets and a circulation system resulting in neighborhoods that balances the scale between pedestrians and vehicles and connectivity with the Delta.

- To promote open space within neighborhoods to provide a convenient and safe destination for children to play and families to gather.
- To develop a lake that provides a focal point and recreation opportunities that would also be utilized for enhancing the environment by improving water quality and reducing water demand; and
- To provide a system of pathways/sidewalks that would be available to the public, providing accessibility, recreation opportunities, and connectivity to the Delta, as an amenity to be enjoyed by the community.

Table 6.1.A: Alternatives Matrix

ISSUE AREA	ALTERNATIVE 1 - NO PROJECT	ALTERNATIVE 2 - LOW DENSITY	ALTERNATIVE 3 - ALL CONVENTIONAL
Geology and Soils	less	same	same
Air Resources	less	less	less
Water Resources	less	same	same
Biological Resources	less	same	same
Noise	less	same	same
Land Use	less	similar	similar
Traffic and Circulation	less	less	similar
Population, Housing, and Socioeconomics	less	similar	similar
Public Services	less	less	less
Water Supply Assessment	less	same	same
Utilities and Service Systems	less	similar	similar
Aesthetics/Light and Glare	less	same	same
Cultural Resources	less	same	same
Hazardous Materials/Wastes	more	same	same
Reduces Significant Effects of the Project	yes	no	No
Meet Project Objectives:			
To create a well-designed residential community that is integrated with adjoining residential and commercial development and to provide connectivity with the Delta.	No	No	Yes
To facilitate the design and development of a community with neighborhoods diverse in population and activity.	No	No	No
To provide amenities such as parks, trails, and lakes to enhance project livability.	No	Yes	Yes

ISSUE AREA	ALTERNATIVE 1 - NO PROJECT	ALTERNATIVE 2 - LOW DENSITY	ALTERNATIVE 3 - ALL CONVENTIONAL
To build high quality residential units combining the best of modern development practices with architectural styles and detailing consistent with traditional neighborhoods.	No	Yes	No
To create a safe, secure environment with walkable neighborhoods that meet the needs of a diverse market sector.	No	No	No
To design streets and a circulation system resulting in neighborhoods that balance the scale between pedestrians and vehicles and connectivity with the Delta.	No	No	Yes
To promote open space within neighborhoods to provide a convenient and safe destination for children to play and families to gather.	No	No	Yes
To develop a lake that provides a focal point and recreation opportunities that would also be utilized for enhancing the environment by improving water quality and reducing water demand; and	No	No	Yes
To provide a system of pathways/sidewalks that would be available to the public, providing accessibility, recreation opportunities, and connectivity to the Delta, as an amenity to be enjoyed by the community.	No	No	Yes

*Notes: More: Impacts with this alternative are more than the proposed project; Similar: Impacts are similar to the proposed project
Same: Impacts are the same as for the proposed project; Less: Impacts are less than the proposed project*

6.2 PROPOSED PROJECT SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

Based on the discussion contained in this EIR, there are four significant and unavoidable impacts that will occur from the proposed Crystal Bay project. These include the following:

- Total emissions of the proposed project would be higher than the 10 tons/year thresholds for ROG and established by the SJVAPCD. No feasible mitigation is available to offset this impact. Cumulative fugitive dust issues will also be significant and unavoidable.
- All cumulative traffic related impacts cannot be mitigated.
- Unanticipated population growth in an undeveloped area.
- Conversion of prime agricultural land to urban uses.

6.3 ALTERNATIVES CONSIDERED

The following alternatives to the proposed project are considered in this DEIR:

- Alternative 1 - No Project Alternative
- Alternative 2 - Low Residential Density

- Alternative 3 - All Conventional Housing

Alternative 1: No Project Alternative

The CEQA-required No Project Alternative would retain the site in its current condition, namely agricultural and fallow lands. With this alternative, no further site improvement activity would occur. No development would occur on site and current General Plan land use and zoning designations would remain in place.

Geology and Soils

Implementation of the No Project Alternative would not affect the geophysical conditions associated with the site. Similarly, the geophysical conditions of the site would not adversely affect the site's agricultural/ open space uses (i.e., seismic and other geophysical concerns would not be hazardous to site uses).

Generally, the soils on the project site are capable of accommodating the proposed project. Engineering techniques will be required, however, to mitigate impacts from expansive soils and high ground water levels. Therefore, the No Project Alternative does presents advantages regarding geology and soils and is an environmentally superior to the proposed project.

Comparable Impacts: Less than the Proposed Project
Reduces Significant Impact: No

Air Resources

The No Project Alternative would not require any site improvements or construction, nor create any new uses that generate stationary and mobile source emissions. Therefore, the No Project Alternative would not further contribute to air quality exceedances or adversely affect the County's attainment status. It should be noted that the existing exposed earth conditions could have an effect on air quality from dust emissions due to long-term soil exposure to wind erosion.

Total emissions of the proposed project would be higher than thresholds established by the SJVAPCD for ROG. Similarly, on a cumulative basis, the project generates fugitive dust and emissions during construction.

Since the No Project Alternative does not have long-term impacts on air quality, this alternative is considered environmentally superior when compared with the proposed project.

Comparable Impacts: Less than the Proposed Project
Reduces Significant Impacts: Yes

Water Resources

The No Project Alternative would still propose changes to the surface or subsurface water resources associated with the site or the region. The development of the adjacent land into Westlake Village will still require, in the interim, the parcel to be used for storage of runoff waters diverted from the existing drainage ditch (between Westlake Village and the project site). Earth excavated from the detention basin will be stock-piled adjacent to the basin creating a 10-foot high mound. Groundwater resources have been utilized for crop irrigation and have had a long-term effect on the water table. Surface water conditions, including water quality conditions, would not change.

Implementation of the proposed project will result in changes to the subsurface water resources. High water table conditions on the project site complicate earthwork, site development, and lake construction. To resolve the high water table issues, dewatering will be required resulting in the lowering of the water table sufficient to prepare the site for development. Waters removed from the subsurface will be pumped into Bishop Cut during construction. The geotechnical study prepared for the project recommends installing a permanent dewatering system to ensure that localized onsite flooding does not occur. It is likely that these dewatering activities would permanently lower water table elevations as experienced at SPW.

Project development will change surface water resources. Increases in runoff are expected due to changes to the hydrology and watershed. The No Project alternative would still require the development of a detention basin and the rerouting of the existing drainage ditch. Although all project related impact will be mitigated to a less than significant level, both the proposed project and the project alternatives will create changes to the existing water conditions. Therefore, the No Project Alternative is not considered environmentally superior.

Comparable Impacts: Same as the Proposed Project

Reduces Significant Impacts: No

Biological Resources

Implementation of the No Project Alternative would retain the undeveloped, agricultural conditions with limited biological habitat value. Although existing conditions on the project site provide limited habitat value, a number of special status species have the potential to or are known to occur on the project site. The proposed project would eliminate habitat for these species. Payment of fees for the loss of habitat and compliance with applicable laws and permitting requirements would reduce these impacts to less than significant levels.

Although impacts to biological resources will be less than significant with the proposed project, the No Project Alternative will not eliminate potential habitat. For this reason, the No Project Alternative is considered more advantageous regarding the impacts on biological resources and therefore is considered environmentally superior.

Comparable Impacts: Less than the Proposed Project

Reduces Significant Impacts: No

Noise

Noise conditions on the project site would remain at current levels for the No Project Alternative. Therefore, the site conditions would not contribute towards any local noise level increases.

Implementation of the proposed project will introduce stationary and mobile noise sources that will cause incremental increases in noise levels. However, none of the increases will exceed City noise standards for existing sensitive receptors, and are not considered significant. Within the project, noise effects can be mitigated for residential uses along Eight Mile Road.

All noise-related impacts can be mitigated for the Proposed Project, however, the ambient noise environment will increase through project implementation. Therefore, the No Project Alternative presents an advantage when compared with the proposed project and, therefore, is considered environmentally superior.

Comparable Impacts: Less than the Proposed Project
Reduces Significant Impacts: No

Land Use

With the No Project Alternative, the project site would not be annexed within the City's boundaries. The existing City General Plan land use and County zoning designations would remain in place (Low-Medium Density Residential and Commercial-Recreation/C-R). Current agricultural land uses on site would remain unchanged.

The No Project Alternative would be considered compatible with most adjacent uses. The existing on site land uses do not conflict with the City's General Plan policies and guidelines.

Consequently, the No Project Alternative presents advantages when compared with the proposed project and is considered environmentally superior with respect to land use conditions.

Comparable Impacts: Less than the Proposed Project
Reduces Significant Impacts: Yes

Traffic and Circulation

No off-site traffic impacts would occur from this alternative, although the deficiencies identified in the Existing Plus Approved Projects and Cumulative Without Project scenarios would still occur.

With the proposed project, the project uses would generate traffic that would affect peak hour traffic conditions and intersection congestion, along surrounding roadways and intersections. However, these traffic impacts are mitigable.

As a result of the proposed project having an adverse effect on levels of service and congestion, the No Project Alternative is considered advantageous when compared with the proposed project and, therefore, is environmentally superior.

**Comparable Impacts: Less than the Proposed Project
Reduces Significant Impacts: Yes**

Table 6.3.A: Project Alternatives Mitigation Summary

IMPACT	DESCRIPTION	NO PROJECT
TRAF 1	Potential for unacceptable intersection operations – Existing Plus Approved Project Plus Project Scenario	No Mitigation Required
TRAF 2	Potential for unacceptable interchange operations – Existing Plus Approved Project Plus Project Scenario	No Mitigation Required
TRAF 3	Potential for Unacceptable Operations at Site Access Intersections	No Mitigation Required
TRAF 4	The proposed project would result in unacceptable service levels at the Eight Mile Road/I-5 interchange.	No Mitigation Required
TRAF 5	Potential for unacceptable interchange operations – Cumulative Conditions	No Mitigation Required
TRAF 6	Inconsistencies with the Eight Mile Road Specific Plan	No Mitigation Required
TRAF 7	Potential for Increase in Transit Demand	No Mitigation Required
TRAF 8	Potential to Conflict with General Plan Policies – Non-Motorized Transportation	No Mitigation Required
TRAF 9	Potential for Inadequate Site Access	No Mitigation Required
TRAF 10	Potential for Inadequate Elementary School Circulation.	No Mitigation Required
TRAF 11	Potential for Lack of Adequate Parking at Marina Site	No Mitigation Required

Source: Fehr & Peers, 2003

Population, Housing, and Socioeconomics

The No Project Alternative would not generate additional population, provide additional housing or employment opportunities, or otherwise affect socioeconomic conditions. Since there would be no site development, there would be no housing or population generation. The long-term forecasts for City population, housing, and employment projections would remain unaffected by the project site.

Site development will generate unexpected population growth, which will create impacts to public services, traffic, etc. In light of these impacts, the No Project Alternative is considered advantageous when compared with the proposed project and, therefore, is environmentally superior.

**Comparable Impacts: Less than the Proposed Project
Reduces Significant Impacts: Yes**

Public Services

The No Project Alternative will not require an increase in public services to serve the project site. Current service levels would remain unaffected, and the demand for services would remain at current levels.

The proposed project will require an increase in public services due to the increase in population. However the proposed project does provide adequate parklands based on City standards. Therefore, the No Project alternative is not considered advantageous when compared with the proposed project and is not environmentally superior.

Comparable Impacts: Less than the Proposed Project
Reduces Significant Impacts: No

Water Supply Assessment

The No Project alternative will not consume additional water supplies. The proposed project will create additional demands on water consumption. A majority of the utility requirements of the proposed project can be provided within the forecasted infrastructure. In addition, the project does not require lengthy extension of infrastructure or service lines to serve the site. These systems will be extended from Spanos Park West and are available to serve the site. The No Project alternative will not require additional water supplies, therefore, the No Project alternative is considered advantageous and is environmentally superior.

Comparable Impacts: Less than the Proposed Project
Reduces Significant Impacts: No

Utilities and Service Systems

The No Project Alternative will not require the extension of utilities or service systems to serve the site. Similarly, the No Project alternative will not require treatment of wastewater. The No Project alternative will not affect other public utilities, including telephone, electricity, and cable television services.

The proposed project will generate sewage for treatment at the wastewater treatment plant. A majority of the utility requirements of the proposed project can be provided within the forecasted infrastructure. In addition, the project does not require lengthy extension of infrastructure or service lines to serve the site. These systems will be extended from Spanos Park West and are available to serve the site. Similarly, other public utilities can be provided for the proposed project without adversely impacting those services. Significant impacts to utilities are not expected. However, the No Project alternative will not require the extension of any utilities or generate additional utility needs, therefore, the No Project alternative is environmentally superior.

Comparable Impacts: Less than the Proposed Project
Reduces Significant Impacts: No

Aesthetics/Light and Glare

Aesthetics and light and glare conditions will remain unchanged with the No Project Alternative. The current agricultural uses on the site would be retained. The site will continue to be absent of light and glare.

With the proposed project, the aesthetic character will be substantially changed to reflect conditions associated with an intense residential subdivision. The project is designed to complement the adjacent Westlake Village development and therefore, impacts are not considered to be significant.

Night-time light will increase as the site is developed with new residential uses. However, the lighting associated with the residences will be mitigated and reduced through the Master Development Plan concepts.

Although impacts to visual resources created by the proposed project will be mitigated, the No Project alternative retains the rural character of the site and is considered environmentally superior.

Comparable Impacts: Less than the Proposed Project
Reduces Significant Impacts: No

Cultural Resources

The No Project Alternative will not have an effect on known or unknown historic and prehistoric resources.

Comparable Impacts: Less than the Proposed Project
Reduces Significant Impacts: No

Hazardous Materials/Wastes

Under the No Project Alternative, agricultural production activities would continue on site with the potential to degrade the environment. As part of the proposed project, the chemicals use in agriculture will be discontinued.

Development of the project will improve site conditions with respect to hazardous materials/wastes, despite the use of household landscaping chemical materials. Therefore, the No Project Alternative is not considered advantageous and is not environmentally superior.

Comparable Impacts: More than the Proposed Project
Reduces Significant Impacts: No

Conclusion

The proposed project has significant impacts with respect to air quality, land use, population, and traffic. All these impacts are avoided with the No Project Alternative due to the absence of development. With the proposed project, impacts for most other environmental issue areas are either

less than significant or can be adequately mitigated. For these areas, the No Project Alternative often presents reduced levels of impact. The No Project Alternative is considered an environmentally superior alternative.

Alternative 2: Low Density Residential

The Low Density Alternative would consist of single family homes at a density of one unit per acre. This alternative would have 1,270 fewer units than the proposed project, resulting in 173 single family homes. All other project uses would remain the same.

Geology and Soils

Implementation of the Low Density Alternative would create the same geophysical issues as the proposed project. Like the proposed project, structures proposed for Low Density Alternative would have to meet building standards for the region. Engineering techniques required for the proposed project to offset impacts of expansive soils and high water table elevations would also be necessary for the Low Density Alternative.

With appropriate measures, geophysical conditions present on site are capable of accommodating the proposed project and the Low Density Alternative. Since there are no geophysical conditions that cannot be mitigated, the Low Density Alternative does not present any advantages regarding geophysical resources, therefore, is not considered environmentally superior to the proposed project.

Comparable Impacts: Same as the Proposed Project
Reduces Significant Impacts: No

Air Resources

Construction of the project at lower densities would result in approximately 12,700 fewer daily trips. The reduced number of vehicle trips will likely generate lower levels of pollutants when compared to the proposed project. The Low Density Alternative would result in similar levels of pollutants generated on site during construction due to complete site development.

Under the Low Density Alternative, the decreased number of vehicles and vehicle trips will reduce the pollutants emitted by operation of project. As such, the Low Density Alternative is considered advantageous to the proposed project and environmentally superior, since pollutant levels will likely be reduced. However, significant impacts will remain likely with this alternative.

Comparable Impacts: Less than the Proposed Project
Reduces Significant Impacts: No

Water Resources

Implementation of the Low Density Alternative would require the same measures in preparing and maintaining the project site. Under the Low Density Alternative, onsite lakes would be created, the site would be permanently dewatered, and the drainage ditch would be relocated. These actions are the same under the proposed project. Therefore, the Low Density Alternative is not considered advantageous to the proposed project and is not environmentally superior.

Comparable Impacts: Same as the Proposed Project
Reduces Significant Impacts: No

Biological Resources

Implementation of the Low Density Alternative would require complete development of the project site. Impacts to plants, wildlife, and habitat would be equivalent to the proposed project. Therefore, the Low Density Alternative is not considered advantageous to the proposed project and is not environmentally superior.

Comparable Impacts: Same as the Proposed Project
Reduces Significant Impacts: No

Noise

Implementation of the Low Density Alternative would require the same measures to prepare and operate the site. Although the number of vehicles and trips on project roadways would be decreased under this alternative, mitigation would still be necessary to offset noise impacts for homes along Eight Mile Road. It is expected that the same mitigation measures would be required for the Low Density Alternative. Therefore, the Low Density Alternative is not considered advantageous to the proposed project and is not environmentally superior.

Comparable Impacts: Same as the Proposed Project
Reduces Significant Impacts: No

Land Use

Implementation of the Low Density Alternative would require the same measures to prepare and operate the site. A General Plan Amendment and rezoning would be necessary to annex the project site to within the City's boundary. Agricultural land would be lost and high-density housing would not be provided. Therefore, the Low Density Alternative is not considered advantageous to the proposed project and is not environmentally superior.

Comparable Impacts: Similar to the Proposed Project
Reduces Significant Impacts: No

Traffic and Circulation

Construction of the project at lower densities would result in 900 daily trips (12,700 fewer daily trips than the proposed project). In the Existing Plus Approved Project Plus Low Density scenario, the deficient intersections identified with the addition of project traffic would remain inadequate. All project impacts identified in the Cumulative scenario would remain significant. No additional impacts would occur with development of the Low Density Alternative. The mitigation measures developed to address the significant off-site traffic impacts of the proposed project would also mitigate impacts for the Low Density Alternative.

Comparable Impacts: Less than the Proposed Project
Reduces Significant Impacts: No

Population, Housing, and Socioeconomics

The Low Density Alternative would add 280 individuals to the population. This represents 3,948 fewer individuals than the proposed project, however, the population growth would still be significant. Additionally, the Low Density Alternative would not provide any affordable, high density housing which is in conflict with City policies. For these reasons, the Low Density Alternative has similar impacts to the Proposed Project and is not environmentally superior.

Comparable Impacts: Similar to the Proposed Project
Reduces Significant Impacts: No

Public Services

The Low Density Alternative will add 280 individuals to the population. Demand for fire, police, parklands, and library services would be reduced accordingly.

The Low Density alternative provides advantages for public services when compared with the Proposed Project due to less demand on libraries, parklands, police and fire. For these reasons, the Low Density alternative is environmentally superior.

Comparable Impacts: Less than the Proposed Project
Reduces Significant Impacts: No

Water Supply Assessment

If the project is approved within 24 months, the Water Supply Assessment indicates that water supplies will be available to serve the proposed project. This impact would be similar for the Low Density Alternative. Therefore, the Low Density Alternative is not environmentally superior to the proposed project.

Comparable Impacts: Same to the Proposed Project
Reduces Significant Impacts: No

Utilities and Service Systems

Under the Low Density Alternative, the demand for utilities would be decreased; however, the Low Density Alternative does not provide significant advantages to the proposed project and is not environmentally superior.

Comparable Impacts: Similar to the Proposed Project
Reduces Significant Impacts: No

Aesthetics/Light and Glare

Like the proposed project, the Low Density Alternative would change the undeveloped, agricultural nature of the site to a developed, urban condition. The Low Density Alternative would create similar light and shadow conditions when compared with the project. Therefore, the Low Density Alternative is not considered advantageous for aesthetics and light/glare when compared with the proposed project and is not environmentally superior.

Comparable Impacts: Same as the Proposed Project
Reduces Significant Impacts: No

Cultural Resources

Development of the site with the Low Density Alternative would create the same impact to cultural resources. Therefore, this alternative is not considered advantageous with respect to cultural resources when compared with the proposed project and is not environmentally superior.

Comparable Impacts: Same as the Proposed Project
Reduces Significant Impacts: No

Hazardous Materials/Wastes

The same conditions exist for the Low Density Alternative as the proposed project.

Development of the Low Density Alternative will present the same conditions as the proposed project and is not considered advantageous and is not environmentally superior.

Comparable Impacts: Same as the Proposed Project
Reduces Significant Impacts: No

Conclusion

The Low Density Alternative would have fewer impacts than the proposed project but does not eliminate adverse impacts. Impacts to public services would be reduced due to fewer individuals and vehicles generated under this alternative. The severity of impacts to air quality, land use, traffic, and

population, while similar to the proposed project, will likely be reduced. Overall the Low Density Alternative is an environmentally superior alternative.

Alternative 3: All Conventional Housing

The All Conventional Housing Alternative would consist of approximately 700 single family homes at a density of four unites per acre. All other project uses would remain the same.

Geology and Soils

Implementation of the All Conventional Housing Alternative would create the same geophysical issues as the proposed project. Like the proposed project, structures proposed for All Conventional Housing alternative would have to meet building standards for the region. Engineering techniques required for the proposed project to offset impacts of expansive soils and high water table elevations would also be necessary for the All Conventional Housing alterative.

With appropriate measures, geophysical conditions present on site are capable of accommodating the proposed project and the All Conventional Alternative. Since there are no geophysical conditions that cannot be mitigated, the All Conventional Alternative does not present any advantages regarding geophysical resources, therefore, is not considered environmentally superior to the proposed project.

Comparable Impacts: Same as the Proposed Project

Reduces Significant Impacts: No

Air Resources

Construction of the All Conventional housing Alternative would result in approximately 50% fewer daily trips. The reduced number of vehicle trips will likely generate lower levels of pollutants when compared to the proposed project. The All Conventional Housing Alternative would result in similar levels of pollutants generated on site during construction due to complete site development.

Under the All Conventional Housing Alternative, the decreased number of vehicles and vehicle trips will reduce the pollutants emitted by operation of project. As such, the All Conventional Housing Alternative is considered advantageous to the proposed project and environmentally superior, since pollutant levels will likely be reduced. However, significant impacts will remain likely with this alternative.

Comparable Impacts: Less than the Proposed Project

Reduces Significant Impacts: No

Water Resources

Implementation of the All Conventional Housing Alternative would require the same measures in preparing and maintaining the project site. Under the All Conventional Housing Alternative, onsite lakes would be created, the site would be permanently dewatered, and the drainage ditch would be

relocated. Therefore, the All Conventional Housing Alternative is not considered advantageous to the proposed project and is not environmentally superior.

Comparable Impacts: Same as the Proposed Project
Reduces Significant Impacts: No

Biological Resources

Implementation of the All Conventional Housing Alternative would require the same measures in preparing and maintaining the project site. Under the All Conventional Housing Alternative, the site would be graded, and drainage canals would be filled. Therefore, the All Conventional Housing Alternative is not considered advantageous to the proposed project and is not environmentally superior.

Comparable Impacts: Same as the Proposed Project
Reduces Significant Impacts: No

Noise

Implementation of the All Conventional Housing Alternative would require the same measures to prepare and operate the site. Although the number of vehicles and trips on project roadways would be decreased under this alternative, mitigation would still be necessary to offset noise impacts for homes along Eight Mile Road. It is expected that the same mitigation measures would be required for the All Conventional Housing Alternative. Therefore, the All Conventional Housing Alternative is not considered advantageous to the proposed project and is not environmentally superior.

Comparable Impacts: Same as the Proposed Project
Reduces Significant Impacts: No

Land Use

Implementation of the All Conventional Housing Alternative would require the same measures to prepare and operate the site. A General Plan Amendment and rezoning would be necessary to annex the project site to within the City's boundary. Agricultural land would be lost and high-density housing would not be provided. Therefore, the All Conventional Housing Alternative is not considered advantageous to the proposed project and is not environmentally superior.

Comparable Impacts: Similar to the Proposed Project
Reduces Significant Impacts: No

Traffic and Circulation

Construction of the project at lower densities would result in 7,000 daily trips. In the Existing Plus Approved Project Plus All Conventional scenario, the deficient intersections identified with the

addition of project traffic would remain inadequate. All project impacts identified in the Cumulative scenario would remain significant. No additional impacts would occur with development of the All Conventional Housing Alternative. The mitigation measures developed to address the significant off-site traffic impacts of the proposed project would also mitigate impacts for the All Conventional Housing Alternative.

Comparable Impacts: Similar to the Proposed Project
Reduces Significant Impacts: No

Population, Housing, and Socioeconomics

The All Conventional Housing Alternative would add 2,177 individuals to the population. This represents 2,052 fewer individuals than the proposed project; however, the population growth would still be significant. Additionally, the All Conventional Housing Alternative would not provide any affordable, high density housing which is in conflict with City policies. For these reasons, the All Conventional Housing Alternative has similar impacts to the proposed project and is not environmentally superior.

Comparable Impacts: Similar to the Proposed Project
Reduces Significant Impacts: No

Public Services

The project will add 2,052 fewer individuals to the population than the proposed project. Demand for fire, police, parklands, and library services would be reduced accordingly.

The All Conventional Housing Alternative provides advantages for public services when compared with the proposed project due to less demand on libraries, parklands, police and fire. For these reasons, the All Conventional Housing Alternative is environmentally superior.

Comparable Impacts: Less than the Proposed Project
Reduces Significant Impacts: No

Water Supply Assessment

If the project is approved within 24 months, the Water Supply Assessment indicates that water supplies will be available to serve the proposed project. This impact would be the same for the All Conventional Housing Alternative; therefore, the All Conventional Housing Alternative is not environmentally superior to the proposed project.

Comparable Impacts: Same to the Proposed Project
Reduces Significant Impacts: No

Utilities and Service Systems

Under the All Conventional Housing Alternative, the demand for utilities would be decreased, however, the All Conventional Housing Alternative does not provide significant advantages to the proposed project and is not environmentally superior.

Comparable Impacts: Similar to the Proposed Project

Reduces Significant Impacts: No

Aesthetics/Light and Glare

Like the Proposed Project, the All Conventional Housing Alternative would change the undeveloped, agricultural nature of the site to a developed, urban condition. The All Conventional Housing Alternative would create similar light and shadow conditions when compared with the project. Therefore, the All Conventional Housing Alternative is not considered advantageous for aesthetics and light/glare when compared with the proposed project and is not environmentally superior.

Comparable Impacts: Same as the Proposed Project

Reduces Significant Impacts: No

Cultural Resources

Development of the site with the All Conventional Housing Alternative would create the same impact to cultural resources. Therefore, this alternative is not considered advantageous with respect to cultural resources when compared with the proposed project and is not environmentally superior.

Comparable Impacts: Same as the Proposed Project

Reduces Significant Impacts: No

Hazardous Materials/Wastes

Development of the All Conventional Housing Alternative will present the same conditions as the proposed project and is not considered advantageous and is not environmentally superior.

Comparable Impacts: Same as the Proposed Project

Reduces Significant Impacts: No

Conclusion

The All Conventional Housing Alternative would have fewer impacts than the proposed project but does not eliminate adverse impacts. Impacts to public services would be reduced due to fewer individuals and vehicles generated under this alternative. The severity of impacts to air quality, land use, traffic, and population, while similar to the proposed project, will likely be reduced. Overall the All Conventional Housing Alternative is an environmentally superior alternative.

CHAPTER 7.0 IRREVERSIBLE ENVIRONMENTAL CHANGES

A number of irreversible changes will occur with approval of the proposed project. These are summarized as follows:

- Undeveloped agricultural lands will be committed to urban development.
- Permanent dewatering of the site may lower ground water levels.
- Air quality will be incrementally degraded. Project emissions will contribute towards the exceedance of ROG levels over the long term operation of the project. On a cumulative basis, construction will adversely affect fugitive dust levels and construction pollutants, and contribute to the non-attainment status of the County.
- Additional impermeable surfaces and increases in runoff will occur. New sources for potential surface water pollution will be introduced.
- Potential habitat will be lost with implementation of the project. Jurisdictional waters may also be impacted.
- Incremental increases in ambient noise levels will occur.
- Inconsistencies with existing General Plan policies. Agricultural lands will be irretrievably lost.
- Additional traffic will be generated by site land uses, and incremental increases in local and regional congestion will occur.
- A new population base and housing supply will be introduced into an area previously undeveloped.
- Water supplies for consumption, sewage treatment, and other utility resources will be permanently committed to the project site.
- Increased levels of public services will be required to serve the proposed project.
- The current undeveloped, graded character of the site will be committed to residential, and support uses. Light effects will incrementally affect the night sky.
- The potential for disturbing potentially unknown historic and prehistoric cultural resources will occur with site development and occupation.

CHAPTER 8.0 UNAVOIDABLE ADVERSE IMPACTS

Implementation of the proposed project will result in a number of potentially significant impacts on the environment. The majority of those potentially significant impacts, with mitigation measures, will be reduced to levels below significance. However, the following impacts cannot be completely mitigated, and the impacts will remain significant and adverse:

- Impacts on air quality due to the exceedance of ROG and NO_x during the long term operation of the project, potential cumulative effects from project construction activity on fugitive dust and pollutant emissions and inconsistency with the Air Quality Attainment Plan.
- The project will generate unexpected population growth.
- Feasible mitigation does not exist to offset all traffic-related cumulative impacts.
- The project will convert prime agricultural lands to urban uses.

In light of the adverse impacts identified, a Statement of Overriding Considerations is needed prior to project approval.

CHAPTER 9.0 REFERENCES

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CHAPTER 10.0 PERSONS CONSULTED

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Lodi Unified School District

Pacific Gas and Electric

San Joaquin County

San Joaquin County Air Pollution Control District

San Joaquin County Council of Governments

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