DRAFT

ENVIRONMENTAL IMPACT REPORT

THE PRESERVE

STOCKTON, CALIFORNIA

EIR FILE #11-05
SCH# 2006092063

LSA

November 2007

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Submitted to:

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LSA Project No. AGS434

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APPENDICES UNDER SEPARATE COVER (CD FORMAT)

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ACRONYM LIST

ACOE	Army Corps of Engineers
ADT	average daily traffic
APN	Assessor's Parcel Number
AQAP	Air Quality Attainment Plan
AWS	all-way stop controlled intersection
C3	row and field crops
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
CNDDB	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
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
EIR	Environmental Impact Report

EPA	U.S. Environmental Protection Agency
EVA	emergency vehicle access
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
fps	Feet per second
GAMAQI	Guide for Assessing and Mitigating Air Quality Impacts
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
LOS	level of service
LTS	less than significant
LUSD	Lodi Unified School District
MBTA	Migratory Bird Treaty Act
MDP	Master Development Plan
MEI	maximally exposed individual
mgd	million gallons per day
mg/L	milligrams per liter
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
NMFS	National Marine Fisheries Service
NOI	Notice of Intent

NOP	Notice of Preparation
NO_2	nitrogen dioxide
NOx	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 21-26	Local Reclamation District 21-26
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
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
SPS	sewer pump station
SPW	Spanos Park West
SR	State Route
SSSC	side street stop controlled intersection

SWPPP	Storm Water Pollution Prevention Plan
SWQCCP	Storm Water Quality Control Criteria Plan
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
$\mu g/m^3$	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, Vesting Tentative Subdivision Tract Map, Development Agreement, and Master Development Plan. Development of The Preserve will include the master planning for the development of 1,404 residential units on ±360 acres, consisting of single family residential lots (933± units), alley-loaded residential lots (246 units), cluster residential (129± units) and condominiums (96± units). In addition, 71.91 acres will be devoted to open space, 40.9 acres will be devoted to parkland, 13.64 acres will be developed as a school site and 0.23 acres will be developed as a temporary fire station. A wetland feature is also planned that will serve to improve the water quality of project runoff and to provide flood control storage. A separate levee improvement project, administered by Reclamation District 21-26, surrounds the site on three sides providing 300-year flood protection. The project will develop a trails system on top of the levees. In addition, the existing dry land levee (along the west side of Trinity Parkway) will be relocated to accommodate the construction of Trinity Parkway. Extension of Trinity Parkway south of Mosher Slough to the extension of Hammer Lane is also required to accommodate the project's traffic and circulation needs.

Project Location

The project is located to the west of I-5 and south of Bear Creek within the City of Stockton jurisdictional boundaries. The project site is bounded on the north by Bear Creek, on the west and south by Mosher Slough, and on the east, by the existing Twin Creeks Estates subdivision, about 1,200 feet west of I-5. Local roadways from the project site will connect with Twin Creeks Estates via Otto Drive, and Spanos Park West via Trinity Parkway.

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 Preserve 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:

- Public Services
- Traffic
- Biological Resources
- Air Quality
- Utilities and Service Systems
- Aesthetics
- Flood Control
- Hazardous Materials/Pesticides

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, land use, public services, housing/population/socioeconomics, aesthetics/light and glare, water supply assessment, hazardous materials/wastes, cultural resources, and utilities and service systems.

1.5 UNAVOIDABLE ADVERSE IMPACTS

Two environmental topics - air quality and traffic - 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 these significant and unavoidable environmental impacts, plus any other significant and unavoidable impacts that may be independently identified by the City of Stockton as Lead Agency.

It is not expected that adjacent or surrounding lands would be subject to growth inducement due to development occurring at the edge of the City of Stockton (City). Numerous obstacles complicate future adjacent development opportunities, including expanding outside the City's Sphere of Influence and Urban Service Boundaries. Development to the west and south (across Mosher Slough), extending into County jurisdiction, and confronting the agricultural designations in the County's General Plan and zoning classifications could become problematic in the current planning horizon.

1.6 PROJECT ALTERNATIVES

The Proposed Project, No Project, Minimum Density, and Higher Density 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.

The proposed project has significant impacts with respect to air quality, and traffic. These impacts are avoided with the No Project Alternative because of 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. Development of the proposed project will improve conditions relating to use of agricultural chemicals. The No Project Alternative is considered an environmentally superior alternative.

Alternative 2: Low Density Residential

The Low Density Residential Alternative would consist of 300 single family dwelling units, 1, 104 fewer homes than the proposed project. The alternative would develop on-acre parcels comprising all low density residential estates. All other project uses would remain the same.

The Low Density Alternative would have fewer significant impacts than the proposed project. Impacts to public services and water supply would be reduced because of fewer individuals. The severity of impacts to air quality, and traffic will likely be reduced to less than significant. Overall the Low Density Alternative is an environmentally superior alternative because of fewer individuals. The severity of impacts to air quality, and traffic will likely be reduced to less than significant. Overall the Low Density Alternative is an environmentally superior alternative because of decreased impacts to air quality and traffic.

Alternative 3: Neighborhood Commercial Alternative

The Neighborhood Commercial Alternative would replace a portion of the housing with a 5 acre commercial development (approximately 50,000 square feet), and increase high density housing to achieve a greater yield. This alternative would construct a maximum of 2,068 dwelling units. All other project uses would remain the same.

The neighborhood Commercial Alternative would have more significant impacts than the proposed project. Impacts to air quality, traffic, public services/utilities, and water supply would be increased because of more individuals and vehicles generated under this alternative. Overall, the Neighborhood Commercial Alternative is not an environmentally superior alternative because of increased impacts when compared to the proposed project.

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			
GEO-1: Expose people or structures to seismic related hazards.	PS	GEO-1: 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. Plans for all structures shall be reviewed by the Director of Community Development prior to the approval of the building plans and building permits. This report will include: An analysis of seismic hazards anticipated at the project site from regional faults. • 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. • The project applicant shall 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 defined in the seismicity report. • It is acknowledged that seismic hazards cannot be completely eliminated, even with site-specific geotechnical investigation and advanced building practices (as provided in the mitigation measure above). However, exposure to seismic hazards is a generally accepted part of living in the seismically active areas of California.	LTS
GEO-2: Result in substantial soil erosion or loss of topsoil.	PS	GEO-2a: Prior to the approval of the improvement plans for site development, the project applicant will submit an erosion control plan to the Director of the 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	LTS

		channels to the maximum extent feasible. The proposed project must comply with applicable State and City codes, regulations and adopted standards. GEO-2b: 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 (RWQCB) regarding compliance with National Pollutant Discharge Elimination System (NPDES) General Construction permit requirements.	
GEO-3: Be located on a geologic unit or soil that is unstable.	PS	GEO-3: A 2005 Geotechnical Services Report prepared by Kleinfelder, Inc. for The Preserve project recommends specific guidelines for the following features; • Concrete Floor Slabs • Exterior Flatwork • Spread Foundations • Post-Tensioned Slabs • Lateral Resistance • Retaining Walls • Asphalt Concrete Pavements • Site Drainage and Landscaping • Soil Corrosion • General Earthwork Adherence to these guidelines and design characteristics shall be implemented in the construction of the project, and evidence of implementation shall be made available to the City of Stockton.	LTS
GEO-4: Be located on potentially expansive soils.	PS	Implementation of Mitigation Measure GEO-3 would reduce this impact to a less-than-significant level.	LTS
4.2 Air Quality			
AIR-1: Long term air quality impacts with localized effects are not expected with project implementation.	LTS	No mitigation required.	LTS
AIR-2: The project is not expected to create objectionable odors.	LTS	No mitigation required.	LTS
AIR-3: The project is not expected to create Hazardous Air Pollutants Impacts.	LTS	No mitigation required.	LTS

AIR 4: The proposed project will contribute to short-term/incremental cumulative air quality impacts. The project is consistent with the Air Quality Attainment Plan.	LTS	No mitigation required.	LTS
AIR-5: The project will generate short term fugitive dust impacts.	LTS	No mitigation required.	LTS
AIR-6: The project is not expected to create short term impact from architectural coatings and asphalt paving.	LTS	No mitigation required.	LTS
AIR-7: Increase in Atmospheric Greenhouse Gas Emissions	LTS	No mitigation required.	LTS
AIR 8: The project will create short term construction equipment exhaust related impacts	PS	Compliance with Regulation VIII and implementation of applicable control measures, indicated in Tables 4.2.I and 4.2.J, will reduce PM10 impacts during construction to a level considered less than significant.	LTS
AIR 9: The project would create long term air quality impacts with regional effects	PS	AIR 1 Project Operations Related Impacts The project applicant shall incorporate the following in building plans: • Solar or low emission water heaters shall be used with combined space/water heater units. • Double paned glass or window treatment for energy conservation shall be used in all exterior windows. • Buildings shall be oriented north/south where feasible.	SU
4.3 Water Resources			
FC-1: The project will not be impacted by a 100-year flood event.	LTS	No mitigation required.	LTS
FC 2: The proposed project will increase the amount of impermeable surfaces which could subject the site to local flooding hazards.	LTS	No mitigation required.	LTS
WQ 1: Project implementation could result in the potential degradation of water quality during project construction and operation.	PS	WQ 1: 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.	LTS
4.4 Biological Resources			
BR 1: Implementation of the project will remove habitat for special status species.	PS	BR-1: The project shall implement the SJMSCP conservation strategy, which includes payment of appropriate fees to SJCOG for conversion	LTS

		of undeveloped lands. Documentation of fee payment shall be provided to the USFWS prior to the start of construction.	
BR 2: Implementation of the project may impact several special status bird species that may nest on the site or immediate vicinity.	PS	BR 2a: The burrowing owl is covered under the SJMSCP. Mitigation measures consistent with those listed in the SJMSCP (listed below) for burrowing owls shall be adhered to where applicable. 1. During the non breeding season (September 1 through January 31) any burrowing owls occupying the project site should be evicted from the project site by passive relocation as described in the California Department of Fish and Game's Staff Report on Burrowing Owls (Oct., 1995). 2. During the breeding season (February 1 through August 31) occupied burrows shall not be disturbed and shall be provided with a 75 meter protective buffer until and unless the TAC, with the concurrence of the Permitting Agencies' representatives on the TAC; or unless a qualified biologist approved by the Permitting Agencies 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 can be destroyed. 3. These Incidental Take Minimization Measures are consistent with the provisions of the Migratory Bird Treaty Act. BR-2b: The tricolored Blackbird is covered under the SJMSCP. Mitigation measures consistent with those listed in the SJMSCP (listed below) for tricolored blackbirds shall be adhered to where applicable. A setback of 500 feet from colonial 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. These Incidental Take Minimization Measures are consistent with the provisions of the Migratory Bird Treaty Act as described in Section 4.4.1-Existing Settings.	LTS

		BR-2c: The Swainson's hawk is covered under the SJMSCP. The following mitigation measures consistent with those listed in the SJMSCP for the Swainson's hawk shall be adhered to where applicable. 1. If a nest tree in the vicinity of the project becomes occupied during construction activities, then all construction activities shall remain a distance of two times the dripline diameter of the tree, measured from the nest. BR-2d: The white-tailed kite is covered under the SJMSCP. Mitigation measures consistent with those listed in the SJMSCP (listed below) for the white-tailed kite shall be adhered to where applicable. 1. Suitable nesting habitat shall be removed between September 1 and February 29, outside of the nesting season. 2. If project construction is to begin during the nesting season (March 1 to August 31), a qualified biologist shall survey suitable nesting habitat within the project area more than 10 days prior to the start of construction. If presence of occupied nests is conformed, a setback of 500 feet from the nest site, marked by brightly colored temporary fencing, shall be maintained until nestlings have fledged or it is confirmed that nesting has failed, as determined by a qualified biologist. BR-2e: The northern harrier is covered under the SJMSCP. Mitigation measures consistent with those listed in the SJMSCP (listed below) for the northern harrier shall be adhered to where applicable. 1. Suitable nesting habitat shall be removed between September 1 and February 29, outside of the nesting season. 2. If project construction is to begin during the nesting season (March 1 to August 31), a qualified biologist shall survey suitable nesting habitat within the project area more than 10 days prior to the start of construction. If presence of occupied nests is conformed, a setback of 500 feet from the nest site, marked by brightly colored temporary	

		fencing, shall be maintained until nestlings have fledged or it is confirmed that nesting has failed, as determined by a qualified biologist.	
BR 3: Construction of the project may impact the giant garter snake.	PS	BR 3: 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 San Joaquin Council of Governments (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	LTS

		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 superceded 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. 13. In addition to the above measures, the following avoidance and minimization measures shall also be implemented. 14. All construction shall be conducted during daylight hours. 15. 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.	
BR 4: The discharge of stormwater from the developed project site into Mosher Slough may impact the giant garter snake, anadromous fish, and Delta smelt.	PS	Implementation of Mitigation Measure WQ-1a and WQ-1b will prevent the conditions outlined in Significance Criterion BR a through BR-d from occurring and will reduce impacts to less than significant.	LTS
BR 5: The project may impact wetlands and/or other waters regulated by the	PS	BR 5: The project shall implement the SJMSCP conservation strategy, which includes payment of appropriate fees to SJCOG for conversion	LTS

ACOE, RWQCB, and/or CDFG.		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 0.46 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.	
4.5 Noise			
NOI-1: The project could create on site stationary source noise impact.	LTS	No mitigation required.	LTS
NOI 2: Construction related activities may negatively impact surrounding receptors.	PS	NOI 1: • During all project site excavation and on-site grading, the project contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards; • The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site and; • The construction contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.	LTS
NOI 3: Implementation of the proposed project will increase noise levels on the project site and surrounding areas.	PS	NOI 2: The following mitigation measures shall be implemented for the proposed project: Exterior Noise. The following mitigation measures are required for outdoor active use areas: • A sound barrier with a minimum height of 10 feet shall be required to protect outdoor active use areas such as parks, backyards, patios, and balconies for the following areas: o Within 65 feet of the Trinity Parkway centerline o Within 80 feet of the Otto Drive centerline	LTS

		• A sound barrier with a minimum height of eight feet shall be required to protect outdoor active use areas such as parks, backyards, patios, and balconies for the following areas: o Within 133 feet of the Trinity Parkway centerline o Within 165 feet of the Otto Drive centerline • A sound barrier with a minimum height of six feet shall be required to protect outdoor active use areas such as parks, backyards, patios, and balconies for the following areas: o Within 282 feet of the Trinity Parkway centerline o Within 353 feet of the Otto Drive centerline Interior Noise. To meet the City's 45 dBA CNEL interior noise standard, the following mitigation measures will be required: • Building facade upgrades such as double-paned windows with a Sound Transmission Class higher than standard construction for the proposed residential structures that have no intervening structures for the following areas: o Within 76 feet of the Trinity Parkway centerline o Within 93 feet of the Otto Drive centerline • Air-conditioning systems for the proposed residential structures that have no intervening structures for the following areas: o Within 447 feet of the Trinity Parkway centerline o Within 559 feet of the Otto Drive centerline	
4.6 Land Use			
LU-1: Implementation of the proposed project will not be compatible with all surrounding land uses.	LTS	No mitigation required.	LTS
LU-2: The project may be inconsistent with City General Plan and regional land use plans and policies.	LTS	No mitigation required.	LTS
LU-3: The project may result in a substantial increase in intensity or have growth inducing impacts.	LTS	No mitigation required.	LTS

LU-4: The proposed project will result in a substantial deviation from the character of the previous designations.	LTS	No mitigation required.	LTS
LU-5: Implementation of the proposed project will lead to the conversion of agricultural lands.	LTS	No mitigation required.	LTS
LU-6: Implementation of the proposed project could endanger residents due to potential natural disasters.	PS	LU-1: The owner, developer, or successors in interest shall provide an evacuation plan as a condition of approval. The evacuation plan must identify the following: • Emergency evacuation routes using levee features and bridge access • Local street evacuation routes • Local evacuation access locations • Emergency contact information	LTS
4.7 Traffic and Circulation			
TRAF 1a, b, c, d, e and f: The project would contribute to or result in unacceptable service levels at six signalized intersections under Existing plus Approved Projects plus Project conditions. If the addition of project traffic increases delay by more than 5 seconds, this is considered a significant impact under Streets and Highways Goal 1.9.	PS	TRAF 1a. 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 applicant shall contribute their fair share towards improvements that would result in acceptable service levels at this interchange, reducing the project's impact to a less-than-significant level. However as these improvements are not yet identified nor fully funded, this impact would remain significant-and-unavoidable. TRAF 1b: 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 applicant shall contribute their fair share towards improvements that would result in acceptable service levels at this interchange, reducing the project's impact to a less-than-significant level. .However as these improvements are not yet identified nor fully funded, this impact would remain significant-and-unavoidable.	SU

		TRAF 1c. 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/Kelley Drive intersection. An improved intersection configuration with the goal of providing acceptable service levels will be identified through the PA/ED process. The project applicant shall contribute their fair share towards improvements that would result in acceptable service levels at this interchange, reducing the project's impact to a less-than-significant level. . .However as these improvements are not yet identified nor fully funded, this impact would remain significant-and-unavoidable. TRAF 1d. The project applicant shall construct a second northbound left-turn lane. This improvement would result in acceptable service levels at this intersection and would reduce the effects of vehicle queue spillback from the northbound left-turn lane, reducing the project's impact to a less-than-significant level. Each left-turn pocket should provide 300 feet of vehicle storage. However, as this intersection is located in San Joaquin County Jurisdiction and implementation of this measure cannot be assured by City of Stockton, this impact would remain significant-and-unavoidable.	
TRAF 2a, b, c, and d: The proposed project would contribute to or result in unacceptable service levels at four unsignalized intersections. This is considered a significant impact under Streets and Highways Goals 1.8 and 1.9.	PS	TRAF-2a, b, 2c, and 2d. The project applicant shall construct Trinity Parkway from Otto Drive to Hammer Lane and construct the Otto Drive/Trinity Parkway intersection to include the following: geometry: o Signalization o 1 northbound left-turn lane (300 feet of storage) o 1 northbound through lane o 1 northbound through-right shared lane o 1 southbound left-turn lane (300 feet of storage) o 1 southbound through lane o 1 southbound through-right shared lane o 1 eastbound left-turn lane (200 feet of storage) o 1 eastbound through lane o 1 eastbound right-turn only lane o 1 westbound left-turn lane (100 feet of storage)	LTS

		o 1 westbound through-right shared lane As the approval for any Trinity Parkway construction south of Mosher Slough to Hammer Lane is currently under the jurisdiction of San Joaquin County, the City cannot ensure a completion date for the roadway. Additionally, development of Atlas Tract could precede construction and occupation of projects assumed in the analysis of near-term conditions, such as the proposed Wal-Mart and/or Sam's Club at Park West Place, resulting in near-term conditions on Mariners Drive better than presented in Table 4.7.I. Without development of those projects, up to 370 single family homes could be built on Atlas Tract and LOS D or better would be maintained at the intersections on Mariners Drive during both the AM and PM peak hours, as shown in Table 4.7.L. Should construction of the project precede development of the proposed Wal-Mart and/or Sam's Club at Park West Place, the project applicant shall be permitted to construct up to 370 single-family homes subject to the project applicant retaining a transportation engineering firm from the City's list of qualified firms to perform biannual monitoring of the intersections on Mariners Drive: Otto Drive, Whitewater Lane, Blackswain Place, Sturgeon Road, and Hammer Lane. This monitoring shall include AM and PM peak period intersection turning movement counts and peak hour level of service calculations for review by City staff. Further, the applicant shall install the following improvements at the Otto Drive/Trinity Parkway intersection: o Traffic signal installation o 1 southbound left-turn lane o 1 southbound right-turn lane o 1 eastbound left-turn lane o 1 eastbound through lane o 1 westbound right-turn lane o 1 westbound through lane Subsequent to development of 370 single family homes, the project	

		applicant shall retain a transportation engineering firm from the City's list of qualified firms to perform biannual monitoring of the intersections on Mariners Drive: Otto Drive, Whitewater Lane, Blackswain Place, and Sturgeon Road. This monitoring shall include AM and PM peak period intersection turning movement counts and peak hour level of service calculations for review by City staff. Should any of the intersections operate deficiently (i.e. average conditions of LOS E or F),); the extension of Trinity Parkway would need to occur prior to continued project development. Should excess capacity exist on Mariners Drive, the number of homes that could be accommodated within the available capacity shall be calculated for review and approval by the City. 's Traffic Engineer. This intersection monitoring shall occur biannually until the Trinity Parkway extension from Otto Drive to Hammer Lane is complete and open to traffic. Should occupation of the Wal-Mart and Sam's Club at Park West Place occur prior to issuance of the first building permit for the project, and the Trinity Parkway extension from Otto Drive to Hammer Lane is not complete, the project applicant shall perform the bi-annual monitoring detailed above. Should it be determined there is additional capacity, no more than 370 units may be constructed. Peak hour intersection levels of service with the extension of Trinity Parkway from Otto Drive to Hammer Lane are shown on Table 4.7.L. Construction of the Trinity Parkway extension would reduce the project's impact in the Existing plus Approved Project condition to a less-than-significant level. This measure would also reduce vehicle queuing at the intersections on Mariners Drive.	
TRAF 3: The proposed project would worsen the operation of two freeway segments projected to operate at unacceptable service levels without the proposed project, I-5 south of Hammer Lane, northbound and southbound. This is considered a significant impact under Streets and Highways Goal 1.8 and 1.9.	PS	TRAF 3: Widening of I 5 to provide four mixed flow travel lanes per direction, in conjunction with interchange improvements and the provision of auxiliary lanes would reduce this impact to a less than significant level, as shown in Table 4.7.M. 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.	SU

		Additionally, a PA/ED is currently being prepared for the I-5/Hammer Lane interchange. An improved interchange configuration that would minimize the potential for vehicle queue spill from the off-ramp to the freeway mainline will be identified through the PA/ED process. The project applicant shall contribute their fair share towards improvements that would result in acceptable service levels on I-5 south of the Hammer Lane interchange, reducing the project's impact to a less-than-significant level. . However, because these improvements are not fully funded, implementation cannot be assured and this impact would remain significant and unavoidable.	
TRAF-4a, b, c, d, e and f: The proposed project would increase traffic through 8 intersections projected to operate at an unacceptable service levels prior to the addition of project traffic. If the addition of project traffic increases delay by more than 5 seconds, this is considered a significant impact under Streets and Highways Goal 1.9.	PS	TRAF-4c: The project applicant shall contribute their fair share to intersection improvements that would result in acceptable intersection operations: provide a shared left-turn-right-turn lane and a right-turn lane on the westbound approach. With implementation of this mitigation, the project impact would be to a less-than-significant level, as shown in Table 4.7.R. TRAF-4d: A Project Approval/Environmental Document (PA/ED) is currently being prepared for interchanges on I-5 including the I-5/Otto Drive interchange. An improved intersection configuration with the goal of providing acceptable service levels will be identified through the PA/ED process. The project applicant shall contribute their fair share towards improvements that would result in acceptable service levels at this interchange, reducing the project's impact to a less-than-significant level. .However as these improvements are not yet identified nor fully funded, this impact would remain significant-and-unavoidable. TRAF-4e: 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/Kelley Drive intersection. An improved intersection configuration with the goal of providing acceptable service levels will be identified through the PA/ED process. The project applicant shall contribute their fair share towards improvements that would result in acceptable service levels at this interchange, reducing the project's impact to a less-than-	SU

		significant level. However as these improvements are not yet identified nor fully funded, this impact would remain significant-and-unavoidable. TRAF-4f: Mitigation of this impact would require two left-turn lanes (300 feet each), two through lanes, and a right-turn lane (200 feet) on the northbound approach, two left-turn lanes (300 feet each), three through lanes, and a right-turn lane on the eastbound approach, and two left-turn lanes (300 feet each), three through lanes, and a shared through/right-turn lane on the westbound approach. The project applicant shall contribute their fair share towards this improvement, reducing the project impact to a less-than-significant level. However, as this intersection is located within San Joaquin County and its implementation cannot be assured by the City of Stockton, this impact is significant-and-unavoidable.	
TRAF 5: The proposed project would degrade operations on two freeway segments, I-5 south of Hammer Lane, northbound and southbound. This is considered a significant impact under Streets and Highways Goal 1.8 and 1.9.	PS	TRAF 5: Mitigation of this project impact would require four lanes per direction on I-5 between Otto Drive and Hammer Lane and south of Hammer Lane (see Table 4.7.S). 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.	SU
TRAF-6a through m: The proposed project would worsen the operation of 14 intersections projected to operate at deficient service levels prior to the addition of project traffic. If the addition of project traffic increases the delay by greater than 5 seconds at already deficient intersection, this is considered a significant impact under Streets and Highways Goal 1.9.	PS	TRAF-6b. 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 applicant shall contribute their fair share towards improvements that would result in acceptable service levels at this interchange, reducing the project's impact to a less-than-significant level. However as these improvements are not yet identified nor fully funded, this impact would remain significant-and-unavoidable. TRAF-6c. A Project Approval/Environmental Document (PA/ED) is currently being prepared for interchanges on I-5 including the I-5/Eight	SU

		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 applicant shall contribute their fair share towards improvements that would result in acceptable service levels at this interchange, reducing the project's impact to a less-than-significant level. .However as these improvements are not yet identified nor fully funded, this impact would remain significant-and-unavoidable. TRAF-6d. The project applicant shall contribute its fair share to provide a third eastbound and a third westbound lane through the intersection. Implementation this improvement would reduce the impact to a less-than-significant level, as shown in Table 4.7.W. TRAF-6e. A Project Approval/Environmental Document (PA/ED) is currently being prepared for interchanges on I-5 including the I-5/Otto Drive interchange. An improved interchange configuration with the goal of providing acceptable service levels will be identified through the PA/ED process. The project applicant shall contribute their fair share towards improvements that would result in acceptable service levels at this interchange, reducing the project's impact to a less-than-significant level. .However as these improvements are not yet identified nor fully funded, this impact would remain significant-and-unavoidable. TRAF 6f. A Project Approval/Environmental Document (PA/ED) is currently being prepared for interchanges on I-5 including the I-5/Otto Drive interchange. An improved interchange configuration with the goal of providing acceptable service levels will be identified through the PA/ED process. The project applicant shall contribute their fair share towards improvements that would result in acceptable service levels at this interchange, reducing the project's impact to a less-than-significant level. However as these improvements are not yet identified nor fully funded, this impact would remain significant-and-unavoidable. TRAF 6g. A Project Approval/Environmental Document (PA/ED) is	

		currently being prepared for interchanges on I-5 including the I-5/Hammer Lane interchange and adjacent Hammer Lane/Mariners Drive intersection. An improved interchange configuration with the goal of providing acceptable service levels will be identified through the PA/ED process. The project applicant shall contribute their fair share towards improvements that would result in acceptable service levels at this intersection, reducing the project's impact to a less-than-significant level. .However as these improvements are not yet identified nor fully funded, this impact would remain significant-and-unavoidable. TRAF 6h. A Project Approval/Environmental Document (PA/ED) is currently being prepared for interchanges on I-5 including the I-5/Hammer Lane interchange. An improved interchange configuration with the goal of providing acceptable service levels will be identified through the PA/ED process. The project applicant shall contribute their fair share towards improvements that would result in acceptable service levels at this interchange, reducing the project's impact to a less-than-significant level. .However as these improvements are not yet identified nor fully funded, this impact would remain significant-and-unavoidable. TRAF 6i. A Project Approval/Environmental Document (PA/ED) is currently being prepared for interchanges on I-5 including the I-5/Hammer Lane interchange. An improved interchange configuration with the goal of providing acceptable service levels will be identified through the PA/ED process. The project applicant shall contribute their fair share towards improvements that would result in acceptable service levels at this interchange, reducing the project's impact to a less-than-significant level. .However as these improvements are not yet identified nor fully funded, this impact would remain significant-and-unavoidable. TRAF-6j. A Project Approval/Environmental Document (PA/ED) is currently being prepared for interchanges on I-5 including the I-5/Hammer Lane interchange and adjacent Hammer Lane/Kelley Drive intersection. An improved interchange configuration with the goal of	

		providing acceptable service levels will be identified through the PA/ED process. The project applicant shall contribute their fair share towards improvements that would result in acceptable service levels at this intersection, reducing the project's impact to a less-than-significant level. .However as these improvements are not yet identified nor fully funded, this impact would remain significant-and-unavoidable. TRAF 6l. The project applicant shall contribute their fair share towards improvements that would result in acceptable service levels at this intersection, reducing the project's impact to a less-than-significant level. Improvement that would result in acceptable service levels include: two left-turn lanes (300 feet each), two through lanes, and a right-turn lane (200 feet) on the northbound approach, two left-turn lanes (300 feet each), four through lanes, and a right-turn lane both the eastbound and westbound approaches. However, as this intersection is located within San Joaquin County and its implementation cannot be assured by the City of Stockton, this impact is significant-and-unavoidable.	
TRAF 7: The proposed project would worsen operations on four freeway segments. This is considered a potentially significant impact under Streets and Highways Goal 1.8 and 1.9.	LTS	No mitigation required.	LTS
4.8 Housing/Population/Socioeconomics			
HPS-1: Development of the project site may conflict with housing/population projections and policies in the General Plan.	LTS	No mitigation required.	LTS
HPS-2: Development of the project site may conflict with Stockton's affordable housing policies and objectives.	LTS	No mitigation required.	LTS
HPS-3: Development of the project site may conflict with Stockton's job/housing balance policies and objectives.	LTS	No mitigation required.	LTS
HPS-4: Development of the project site may negatively affect the existing supply	LTS	No mitigation required.	LTS

of housing or create a demand 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.	LTS	No mitigation required.	LTS
HPS-6: Development of the project site may result in substantial population growth.	LTS	No mitigation required.	LTS
4.9 Public Services			
CC-1: The project may not provide adequate community center facilities, aggravating existing City deficiencies.	LTS	No mitigation required.	LTS
PR-1: Development of the project site may 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 an adverse physical effect on the environment.	LTS	No mitigation required.	LTS
PR-3: Development of the project site may create a shortage of neighborhood park facilities for new residents.	LTS	No mitigation required.	LTS
PR-4: Development of the project site may conflict with General Plan policies regarding park locations, security and safe access.	LTS	No mitigation required.	LTS
SW 1: Implementation of The Preserve 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 maintenance of the park is guaranteed.	PS	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 not be 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 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. 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 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.	LTS

FP 1: Project implementation will increase the demand for fire protection services which could affect the level of service protection and response times.	PS	FP 1a: prior to issuance of building permits, the project applicant shall pay development impact 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. 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.	LTS
PP 1: The proposed Preserve project will increase the demand for law enforcement services.	PS	PP 1a: Prior to issuance of building permits, the project applicant shall pay development impact 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. 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. 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. PP-1d: Construction site perimeter fencing is also required to prevent criminal activity during construction.	LTS
SCH 1: Project implementation will generate additional students and could affect the capacity of existing schools.	PS	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. The project applicant will provide an elementary school as identified in the project description.	LTS
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 impact 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	PS	VC-1: Should the District's efforts to control mosquito populations within the project area fail to adequately control the potential health	LTS

populations could result in health risks to residents.		risk to the project population, The Preserve Owner's Association or similar organization shall provide additional resources or financial support to protect project residents from vector-related health risks.	
4.10 Public Water Supply Assessment			
WSA-1: Implementation of the proposed project will increase the demand for water supplies and could adversely affect long-term water service reliability unless adequate sources are obtained.	LTS	No mitigation required.	LTS
WSA-2: Project implementation could require extensive modifications to the existing water system to meet the 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 improvements to the domestic water supply. WSA 1b: Prior to issuance of building permits, the applicant shall provide evidence to the Director of Municipal Utilities at the City of Stockton of compliance with plumbing, metering, and other water conservation measures in effect, including any provisions outlined included in the City's Urban Water Management Plan, 2005 Update. WSA 1c: Prior to approval of improvement plans for each development unit, the applicant will perform a water system analysis, acceptable to the Director of Municipal Utilities, demonstrating that the water system improvements are sufficient to meet the City of Stockton service standards. WSA-1d: The City-wide Water Master Plan may be required to be amended and approved by the Stockton City Council, if the subject project is approved prior to the adoption of utility master plans for the 2035 General Plan Project.	LTS
4.11 Utilities and Service Systems			
EG-1: The project will 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
COM-1: The project is not expected to	LTS	No mitigation required.	LTS

result in increases in telephone and cable service demand which could interfere with the ability of utility providers to serve the existing customers.			
WW 1: Existing and proposed wastewater conveyance facilities may not have adequate capacity to meet proposed project demand.	PS	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. WW-1b: The City-wide Sanitary Sewer Master Plan may be required to be amended and approved by the Stockton City Council, if the subject project is approved prior to the adoption of utility master plans for the 2035 General Plan Project.	LTS
WW 2: Sewage demand generated by the proposed project could 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, 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.	LTS
EG 2: The proposed project will use large amounts of energy.	PS	EG 1: As feasible, the applicant should install energy reducing fixtures and implement energy reducing measures to decrease the amount of energy used.	LTS
4.12 Aesthetics/Light and Glare			
VIS-1: Development of the project site would substantially damage scenic resources.	LTS	No mitigation required.	LTS
VIS-2: Development of the project site would substantially degrade the existing visual character or quality of the site or its	LTS	No mitigation required.	LTS

surroundings by failing to blend in with the visual character of the surrounding neighborhoods.			
VIS-3: Development of the project site will not have a substantial adverse effect on a scenic vista as viewed from a public vantage point.	PS	VIS-1: The City shall require the project applicant to submit a landscape plan for Trinity Parkway which will provide a visual screen and green buffers between the project and the adjacent existing residential development.	LTS
VIS-4: Development of the project site may create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.	PS	VIS-2: The City shall require the project applicant to submit a lighting plan which includes specifications for lighting along the Trinity Parkway Extension to be focused downwards and away from nearby residences in the Twin Creeks Estates. The City shall ensure that the landscape plan includes landscaped medians on the Trinity Parkway Extension to reduce light spillover from the residential developments and new road.	LTS
4.13 Cultural Resources			
CR 1: Project site development could potentially affect known and unknown resources with cultural significance.	PS	CR 1a: Project personnel shall not collect or move any archaeological material. Fill soils that may be used for construction purposes shall not contain archaeological materials. CR 1b: If deposits of prehistoric or historical archaeological materials are encountered during project activities, all work within 25 feet of the discovery should be redirected and a qualified archaeologist contacted to evaluate the finds and make recommendations. It is recommended that adverse effects to such deposits be avoided by project activities. If such deposits cannot be avoided, they should be evaluated for their eligibility for listing in the California Register of Historical Resources. If the deposits are not eligible, avoidance is not necessary. If the deposits are eligible, they will need to be avoided by adverse effects or such effects must be mitigated. Upon completion of the archaeological assessment, a report should be prepared documenting methods and results, and recommendations. The report should be submitted to the project proponent, appropriate City of Stockton agencies, and the Central California Information Center. Prehistoric materials can include flaked-stone tools (e.g. projectile points, knives, choppers) or obsidian, chert, basalt, or quartzite toolmaking debris; culturally darkened soil (i.e., midden soil often	LTS

		containing heat-affected rock, ash and charcoal, shellfish remains, faunal bones, and cultural materials); and bone tools and stone milling equipment (e.g., mortars, pestles, handstones). Prehistoric sites often contain human remains. Historical materials can include wood, stone, concrete, or adobe footings, walls and other structural remains; debris-filled wells or privies; and deposits of wood, glass, ceramics, metal, and other refuse. CR 1c: If human remains are encountered, work within 25 feet of the discovery should be redirected and the County Coroner notified immediately. At the same time, an archaeologist should be contacted to assess the situation. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods. Upon completion of the assessment, the archaeologist should prepare a report documenting the methods and results, and provide recommendations for the treatment of the human remains and any associated cultural materials, as appropriate and in coordination with the recommendations of the MLD. The report should be submitted to the project proponent, appropriate City of Stockton agencies, and the Central California Information Center. CR 1d: If paleontological resources are encountered within five feet of the ground surface, however, they should be handled according to the accidental discovery section below. There is a possibility of encountering significant paleontological resources in the Modesto Formation sediments of the project area that directly underlie the soils. Paleontological monitoring is recommended if the proposed project plans involve ground disturbance at a depth greater than five feet. Prior to ground disturbing activities, a qualified paleontologist should develop a monitoring plan that takes into account the specific details of construction plans as well as information	

		from any available paleontological, geological, and geotechnical studies, as well as limited subsurface investigations.	
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

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 project. Encompassing approximately 360 acres, the Master Development Plan Area proposes to prepare the project site for the construction single family residential lots, alley loaded residential lots, condominiums, and cluster residential lots on lands that are currently used for agricultural purposes. To accommodate the current residential development of the proposed project, a General Plan Amendment to Mixed Use is proposed. In addition, the amendment would include re-zoning of the site to the M-X District. The Master Development Plan will include the construction of ±1,404 residential units. The plan will also provide ±71.91 acres of open space/levees, 13.64 acres for an elementary school, and 40.9 acres of parkland. A Development Agreement is also required.

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 1-04, dated September, 2006) 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 October 16, 2006. Responses to comments generated by circulating the NOP/Initial Study have been addressed, as appropriate, throughout the document. It should be noted that since the NOP was distributed, a change in the project site plan has occurred. Realignment of the dryland levee located at the eastern boundary of the project site will result in fewer residential units than originally proposed.

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, zone change, Master Development Plan, Development Agreement, 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. A General Plan Amendment to Mixed Use would be required for the 360± acres comprising the residential development, parks, school site and trails. The zoning would be amended to designate the site for M-X District. 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.

As noted in the Development Agreement, the owner shall have the right, and the obligation to develop The Preserve 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 and Master Development Plan, applicable existing City Laws will control the overall design, development, and construction of The Preserve, and all related improvements and appurtenances. These controls also encompass, without limitation, the permitted uses within The Preserve, 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 The Preserve.

As a result of the relationship of the proposed Preserve project with the proximate 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 documents are referred to as follows:

LSA Associates, Inc. Draft Westlake Villages Environmental Impact Report (EIR 1-04). June 25, 2004. SCH #2004052105. Certified by the City of Stockton in September 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 18, 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:

- Public Services
- Traffic
- Biological Resources
- Air Quality
- Utilities and Service Systems
- Aesthetics
- Flood Control
- Hazardous Materials/Pesticides

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

Project Applicant:	**A.G. Spanos Companies** 10100 Trinity Parkway, 5th Floor Stockton, CA 95219 (209) 478-7954
Lead Agency/City Staff:	Planning **Jenny Liaw** Senior Planner 345 North El Dorado Street Stockton, CA 95202-1997 (209) 937-8627
	Public Works **Gregg Meissner** Senior Transportation Planner 345 North El Dorado Street, Stockton, CA 95202-1997 (209) 937-8270
Project Representative:	**Jim Panagopoulos** A.G. Spanos Construction, Inc. 10100 Trinity Parkway, Suite 440, Stockton, CA 95219 (209) 478-2200
Environmental Consultant:	**Bill Mayer** Principal LSA Associates, Inc. 4200 Rocklin Road, Suite 11B, Rocklin, CA 95677 (916) 630-4600
Engineering:	**Jon Cakus** Mid-Valley Engineering 10100 Trinity Parkway, Suite 440, Stockton, CA 95219 (209) 526-4214

Jon Cakus

Master Development Plan:	Mid-Valley Engineering 10100 Trinity Parkway, Suite 440, Stockton, CA 95219 (209) 526-4214
Traffic:	**Katherine Tellez** Fehr & Peers 3685 Mt. Diablo Boulevard, Suite 301, Lafayette, CA 94549 (925) 284-3200

CHAPTER 3.0 PROJECT DESCRIPTION

3.1 OVERVIEW

The project proposes a General Plan Amendment, Rezoning, Vesting Tentative Tract Map, Development Agreement, and Master Development Plan. Development of The Preserve will include the master planning for the development of 1,404 residential units on ±360 acres, consisting of single family residential lots (933± units), alley-loaded residential lots (246 units), cluster residential (129± units) and condominiums (96± units). In addition, 61.41 acres will be devoted to open space/levees, 40.9 acres will be devoted to parkland, and 13.64 acres will be developed as a school site. A wetland feature is also planned that will serve to improve the water quality of project runoff and to provide flood control storage. A separate levee improvement project, administered by Reclamation District 21-26, surrounds the site on three sides providing 300-year flood protection. The project will develop a trails system on top of the levees. In addition, the existing dry land levee (along the west side of Trinity Parkway) will be relocated to facilitate Trinity Parkway improvements. Extension of Trinity Parkway south of Mosher Slough to the extension of Hammer Lane is also required to accommodate the projects traffic and circulation needs.

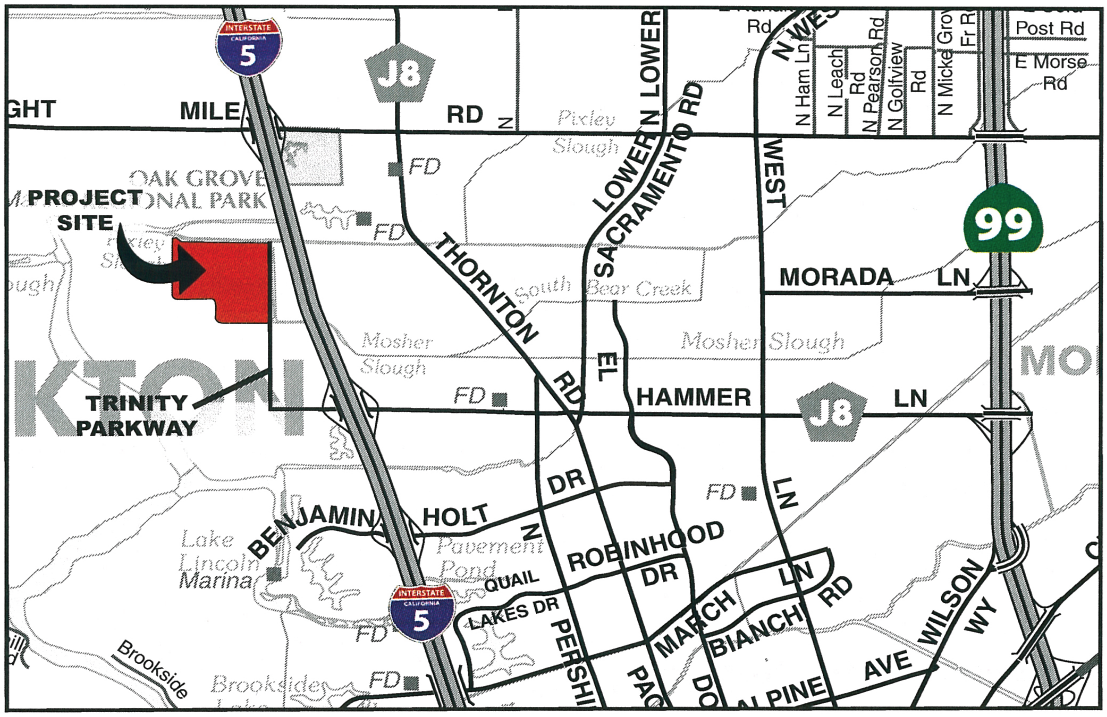
Local and Regional Setting

The proposed Preserve Project is located to the west of I-5 and south of Bear Creek within the City of Stockton jurisdictional boundaries. The project site is bounded on the north by Bear Creek, on the west and south by Mosher Slough, and on the east, by the existing Twin Creeks Estates, about 1,200 feet west of I-5. Figure 3.1.1 shows the project location. Local roadways from the project site will connect with Twin Creeks Estates via Otto Drive, and Spanos Park West via Trinity Parkway. Existing land uses on the development parcel reflect agricultural uses.

The topography of the site is near level with few distinguishing features. Levees surround the project site on the North, West, East, and South. A dry-land levee runs north-south along the eastern edge of the property which will be realigned approximately 300 feet to the west of its current alignment to facilitate Trinity Parkway Phase 2 improvements under a separate project. The site is currently graded due to levee improvements completed under a separate project. Mosher Slough bounds the project on the west and south. Bear Creek bounds the project on the North. The Slough and Creek eventually discharge to the San Joaquin River.

Surrounding Projects

Several major developments have been approved in the vicinity of the project, and more are being proposed. Table 3.2.A Surrounding Planned and Approved Development Projects presents the development activity within the project vicinity.



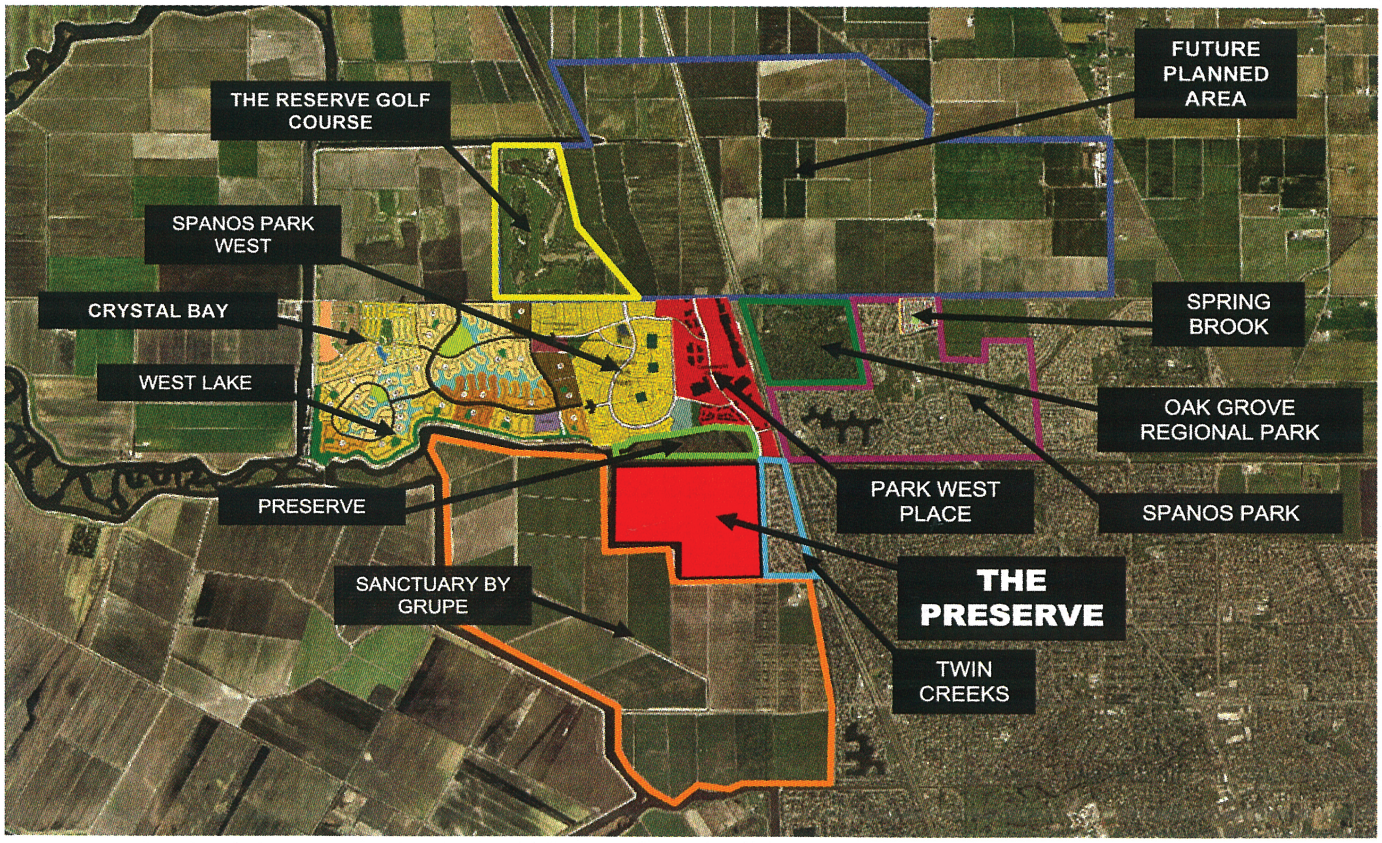


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FIGURE 3.1.1

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The Preserve

Project Location and Surrounding Projects and Features

SOURCE: Mid-Valley Engineering, 2005

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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 (Single Family) 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 high density units.

The Preserve development proposes a mixture of low density and medium density units on the 360± acres. This development would account for about 20 percent of the residential land available for development under the current general plans study area. The average densities in the 2003 Housing Element for RL, RM and RH is 5.7 units, 13.8 units and 23-34.4 per acre respectively. The Preserve densities can be seen in Table 3.3.A.

3.2 PROJECT OBJECTIVES

- Develop a balanced and complete community in terms of land use distribution and densities, housing types and economic development opportunities.
- Promote the development of a sufficient quantity and variety of decent, safe and sanitary housing units to meet the needs of all potential residents.
- Establish a balanced transportation and circulation system that provides for the efficient movement of people and goods while minimizing the impacts of adjacent land uses.
- Provide high quality educational, cultural and recreational opportunities for all residents.

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, Northbrook	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%
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%

NAME	TM #	TM ACREAGE	MAP UNITS	BDG PERMITS ISSUED	LOTS REMAINING	PERCENTAGE COMPLETE
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%
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		**9,059**	**34,409**	**3,007**	**38,627**	

Source: City of Stockton, 5/07

3.3 SPECIFIC PROJECT DESCRIPTION/OPERATIONAL CHARACTERISTICS

Proposed Project / Master Development Plan

The proposed Preserve project is a residential development that includes single-family residential, alley-loaded lots, cluster residential lots, and condominiums as well as providing recreational uses within the parks and open space areas designed to meet the needs of future Stockton residents.

Maintaining flexibility to accommodate future market changes while considering the widest range of development options for all portions of the project site is the fundamental basis for the Master Development Plan. The Master Development Plan, Figure 3.3.1, outlines a potential pattern of development and indicates density ranges within each neighborhood to reflect current market conditions. Because of the inherent flexibility of the M-X zoning designation, several configurations that comply with the criteria established by the M-X Zone are feasible. These concept plans are intended to illustrate a development scenario for each area that meets the objectives of the Master Development Plan. The project proposes to change the existing residential and commercial land use to Mixed Use designations. The Mixed Use designations allow for a variety of land uses, however, The Preserve project proposes only residential and related uses at a variety of densities on the development parcel.

Table 3.3.A, Land Use Summary, indicates the primary land use. The Preserve consists of neighborhoods of traditional detached, attached and small lot single family homes in addition to more progressive housing such as cluster homes, alley homes and condominiums.

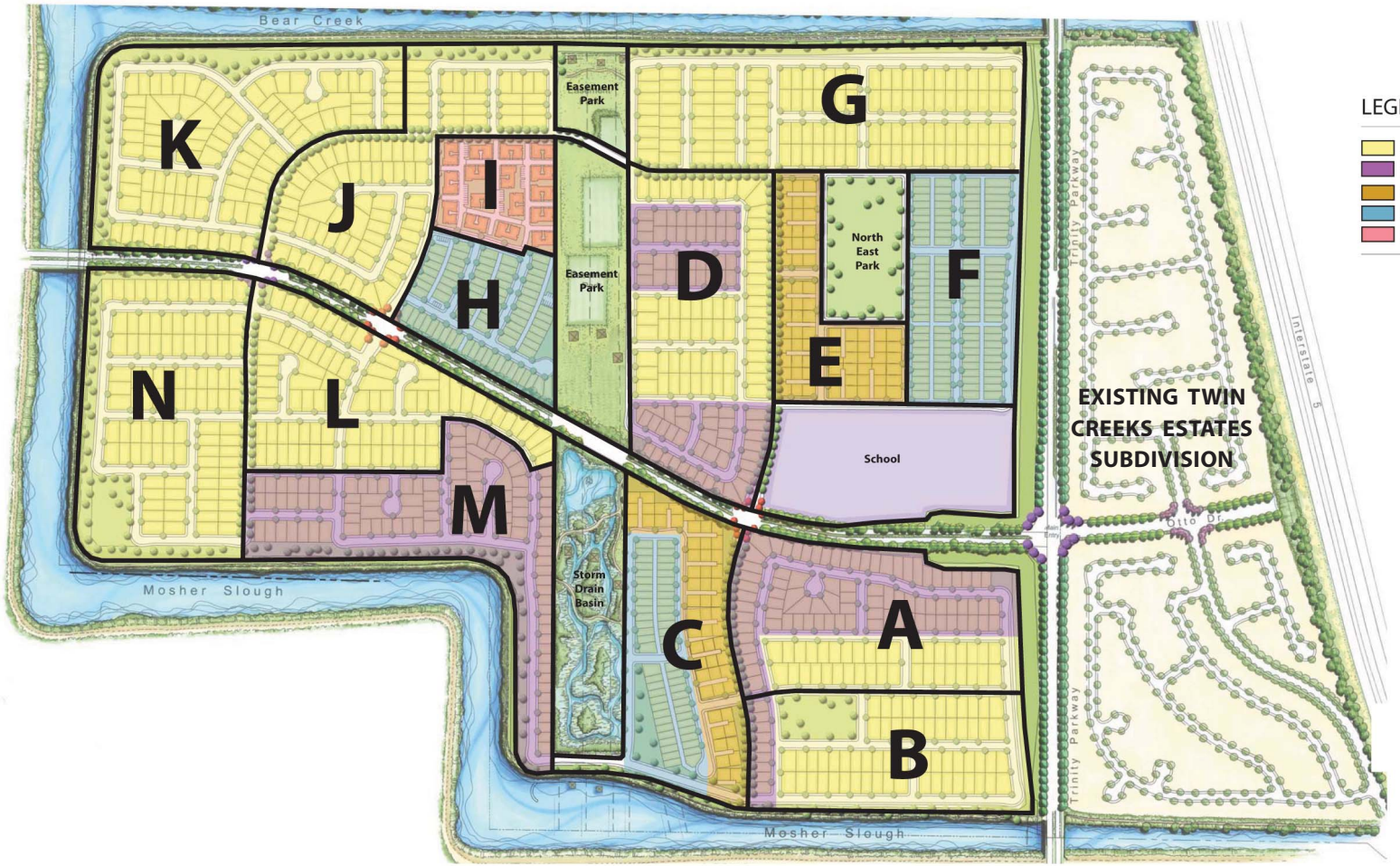

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FIGURE 3.3.1

The Preserve

Conceptual Master Development Plan

SOURCE: The Preserve MDP, 2007

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Table 3.3.A: Land Use Summary

Residential Neighborhoods	Gross Acreages	# of Units/ Primary Use	Density Per Acre	Lot Size
A	18.59	38 Residential Units	6.69	50x100
		84 Residential Units	6.69	45x75
B	12.93	62 Residential Units	5.49	50x100
		9 Residential Units	5.49	45x75
C	14.87	57 Residential Units	7.65	50x56
		57 Residential Units	7.65	33x80
D	21.94	62 Residential Units	6.24	50x100
		74 Residential Units	6.24	45x75
E	9.88	72 Residential Units	7.29	50x56
F	12.08	112 Residential Units	9.27	33x80
G	21.44	120 Residential Units	5.60	50x100
H	9.09	79 Residential Units	8.47	33x80
I	6.59	96 Residential Units	14.57	Condo
J	16.94	86 Residential Units	5.08	50x100
K	19.31	99 Residential Units	5.13	50x100
L	16.11	84 Residential Units	5.21	50x100
M	15.53	111 Residential Units	7.15	45x75
N	18.02	102 Residential Units	5.70	50x100
Totals	213.32	1,404 Residential Units	6.58	
Public Facilities				
Otto Drive	11.75	N/A	N/A	N/A
School	13.86	N/A	N/A	N/A
Trinity Parkway	5.89	N/A	N/A	N/A
Parks				
Linear Levee Park	19.47	N/A	N/A	N/A
Northeast Park	5.09	N/A	N/A	N/A
Southwest Pocket Park	1.35	N/A	N/A	N/A
South Central Park	0.93	N/A	N/A	N/A
Southeast Pocket Park	1.61	N/A	N/A	N/A
Easement park	12.43	N/A	N/A	N/A
Totals	40.88	N/A	N/A	N/A
Open Space				
Perimeter Levee & Sloughs	63.32	N/A	N/A	N/A
Detention Basin	10.50	N/A	N/A	N/A
Totals	71.91	N/A	N/A	N/A
Overall Site Total	**359.69**	N/A	N/A	N/A

Upon full implementation of the proposed Preserve project, a new circulation network will be constructed to serve the proposed project, as well as, the adjacent Spanos Business Park and Spanos Park West. The internal circulation system consists of a main entrance via Otto Drive and Trinity Parkway. Otto Drive would be designed as a minor arterial street extending west across the project site to provide future vehicular connection to serve the future Shima Tract. Otto Drive would also connect to internal streets within The Preserve that would serve the residential neighborhoods. Trinity Parkway would be extended to the south from Mosher Slough intersecting with Hammer Lane. Hammer Lane would be extended to the west to connect with the Trinity Parkway extension. Figure 3.3.2 provides a design of the circulation system.

Characteristics associated with each project component are presented below.

Residential Land Use. The development program for The Preserve consists of neighborhoods of detached and attached residential units. Half of the land is dedicated to traditional detached single-family homes and small-lot single-family homes. The other half of the land is dedicated to more progressive housing products designed to minimize the impacts to the project site while maximizing density opportunities. These more progressive development styles include cluster homes, alley-loaded homes and condominiums. The housing units within The Preserve have a range of densities as depicted in Table 3.3.A.

Open Space. The Preserve includes 61.41 acres of open space. Additionally, levees, green spaces and easements within the project will account for open space areas within The Preserve. The levees will serve as a natural barrier and provide pedestrian and bike trails. Other permitted uses for open space include natural resource areas, preserves, protective buffers, public or private utility buildings, structures and facilities (as needed for infrastructure services) and recreational facilities.

Public Park. Approximately ±40.9 acres of public parkland areas will be provided in The Preserve. Permitted uses within these parks include picnic facilities, playground apparatus, playing fields and courts and ancillary buildings and parking.

Enhanced Atlas Tract Levee System/Dryland Levee Relocation
Along the eastern boundary of Reclamation District 2126, Atlas Tract has an existing easement for levee purposes. The easement is in favor of "Sacramento & San Joaquin Drainage Ditch Easement ("I.N. 91062831").

The Easement is occupied by a dryland levee which connects the Bear Creek project levee at the north east corner of RD 2126 to the Mosher Slough project levee at the southeast corner of RD 2126. The dryland levee was built in the 1950's and has provided flood protection to the existing residential areas east of the levee, south of Bear Creek and north of Mosher Slough. In 1991, the current easement was modified to accommodate the conditions of the previously approved Tentative Map over properties of RD 2126. RD 2126 has recently completed construction of new levees along the north, west and south side of the Atlas Tract parcel. The new levees are built to the standards of height and width that provide over 100-year flood protection for the entire Preserve area. The new levees were geotechnically tied-in (bonded to) the existing Bear Creek and Mosher Slough project levee previously described above.

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FIGURE 3.3.2

The Preserve

Conceptual Circulation Plan

SOURCE: The Preserve MDP, 2007

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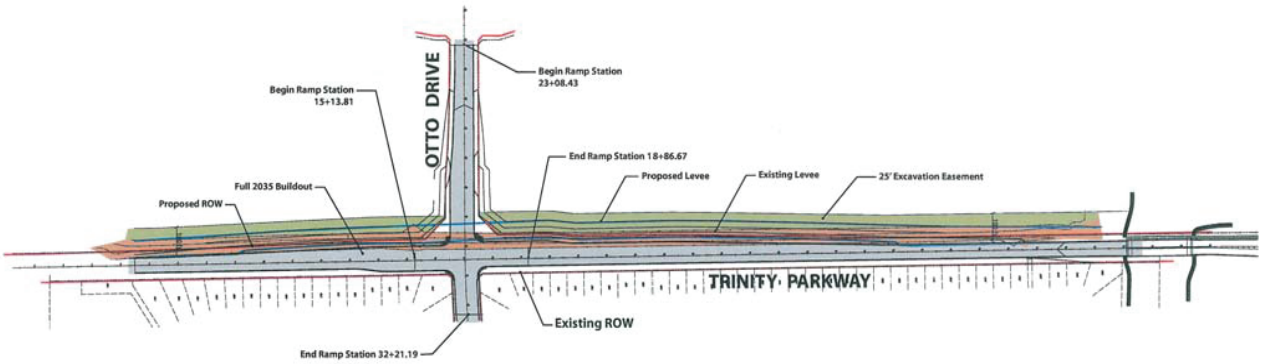
The new RD 2126 levees have been certified by FEMA for a Letter of Map Revision (LOMR), resulting in the removal of the Atlas Tract parcel from the flood plain and allow residential development within RD 2126. The landowners are currently processing a Master Development Plan and Tentative Map with the City of Stockton in order to obtain entitlement to develop the property.

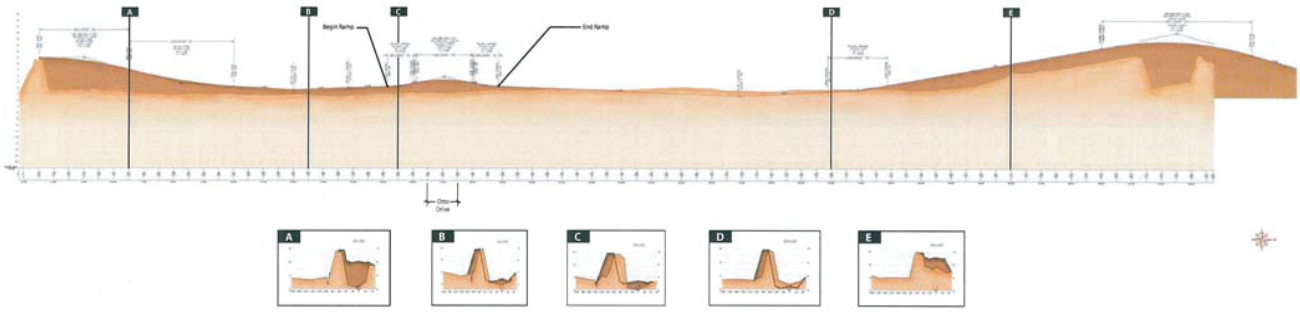
To maintain flood protection both east and west of the proposed Trinity Parkway extension, the City is proposing to realign the existing dry land levee approximately 300 feet to the west of its current alignment to facilitate Trinity Parkway Phase 2 improvements. At the Otto Drive intersection, Trinity Parkway will be elevated slightly in anticipation of the future entrance into the proposed project. Also in this location, the levee will flare into the Atlas Tract property as needed to wrap around the future entrance into the proposed development. Trinity Parkway will also be elevated at the southern end of the roadway to meet the height elevation of the new Atlas Tract levee system and future Mosher Slough-Trinity Parkway bridge. The Trinity Parkway Phase 2 project (which includes the realignment of the dry land levee) has been approved by the City of Stockton and will be reviewed by the Corps of Engineers in conjunction with the 408 Permit process. Figure 3.3.3 displays the dryland levee relocation.

On-Site Storm Water Management and Flood Protection. The facilities that comprise the onsite storm water management program include a series of drainage ditches and a pump station operated by Reclamation District 2126 that were constructed to convey and discharge drainage of the Plan Area into Mosher Slough as part of the levee improvement project. The proposed The Preserve residential development project will require (1) storm water treatment, (2) detention, and (3) pump station because of the levee condition. These objectives can be achieved through an integrated "recirculating" wetlands system and storm water pump station. The entire system, independent of the residential storm drain pipe conveyance and collection system would consist of: (1) storm drain outflow chamber / junction box to the wetlands, (2) dry-weather flow pump in the outflow chamber, (3) constructed wetlands system excavated below the normal ground elevation, (4) storm water pump station, (5) wetlands recirculating pump and return force main pipeline, and (6) primary stormwater force main to slough and outlet structure. The primary feature is a proposed approximately 10.5-acre wetland located in the PG&E easement that will provide stormwater treatment, stormwater conveyance, flood storage, wildlife habitat, and recreational opportunities. The wetland will be the primary structural stormwater BMP for the tract and will provide flood detention during large storm events. The amount of temporary detention storage provided by the wetland will allow the stormwater pump station capacity to be reduced below the City required peak 10-year peak discharge rate for storm water pump stations. A conceptual Stormwater Treatment and Pump Station Plan has been prepared for the project and details regarding the plan are included in the Water Quality section of this EIR.

The conceptual wetland drainage system design is based on criteria set forth in the applicable City of Stockton Municipal Codes (e.g. Pump Station Design Guidelines) and the City of Stockton Storm Drain Master Plan. Additional references used for the plan include the County of San Joaquin Hydrology Manual (1997), City of Stockton Department of Public Works Storm Drain Design Sheet, and the Improvement Standards for San Joaquin County (May 1997).



DETAILED PLANVIEW



TRINITY PARKWAY PROFILE & CROSS SECTIONS

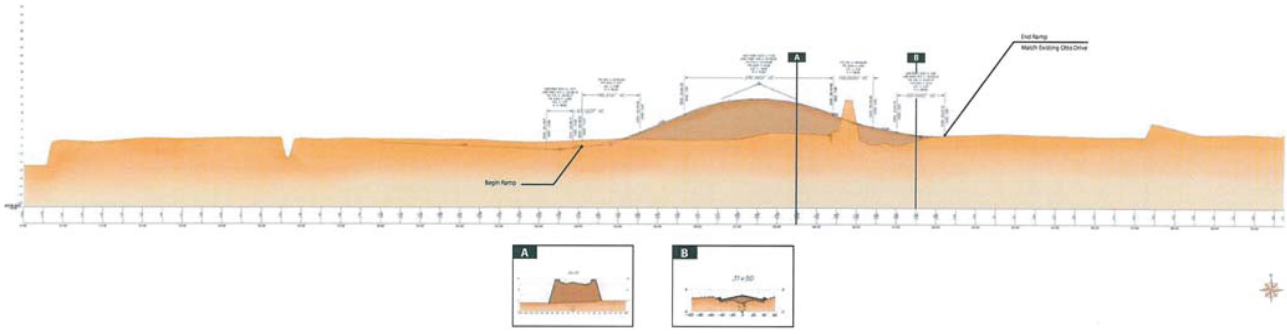


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FIGURE 3.3.3

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The Preserve
Dryland Levee Relocation

SOURCE: Mid Valley Engineering, 2007

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Urban Design/Landscape Plan. The guiding concept for The Preserve is the creation of a residential housing plan with a variety of products that provide for a high quality mixed use development made up of a variety of residential uses that are complimentary to each other while promoting urban design concepts.

The Preserve will be predominately residential in nature, with a generous amount of recreational facilities, parks and open space integrated into the overall development. The Master Development Plan includes a circulation network that will logically serve future development to the east and south, and additional traffic generated by future development of the Shima Tract. The development program reflects land uses that are responsive to the demands of the known market while complying with the policies and programs of the General Plan of the City.

The Landscape Plan and Landscape Guidelines create the structure for The Preserve by establishing a hierarchy of use areas defined by specific design elements. The Landscape Guidelines, which supports the components of the Circulation Plan, serves to unite all the parcels and land uses to illustrate a conceptual design theme that establishes the project as a multi-product residential development of significant quality.

The Landscape Concept is a combination of design quality, materials, and consistency that unifies the overall development with the roots of the Stockton community and the rich heritage of the Delta.

Consistent and common design elements should be used throughout the Project. The elements of the overall development will be features that stem from the landscape guidelines contained in this Master Development Plan. All landscape design elements shall be subject to review by the Design Review Board. The landscape elements have been carefully selected to provide a unified design fabric for The Preserve. Figure 3.3.4, Overall Landscape Concept Plan, illustrates the overall landscape framework that will unite all the parcels and eventual land uses envisioned for the project.

The proposed project is designed to comply with the City of Stockton Mixed Use General Plan designation and zoning district (Stockton Municipal Code Section 16-075) and Master Development Plan guidelines and standards (Stockton Municipal Code Section 16-200). These designations are intended to provide a range of land uses on large parcels. The Mixed Use designation is intended to encourage the development of a mixture of compatible land uses including low to low-medium density family residential, commercial uses and public and quasi-public facilities. Supporting this Mixed Use concept is a Master Development Plan (Appendix B) that describes the proposed uses, development concepts, design and development standards, and intensities for each proposed use. The circulation system concepts, infrastructure requirements, and other key development features are included in the Master Development Plan, as shown in previous Figure 3.3.1.

PARK AND STREET TREE PALETTE

Acer rubrum	Maple	15-GAL
Largerstromia fauriei 'Tuscarora'	Crape Myrtle	15-GAL
Platanus acerfolia 'Bloodgood'	London Planetree	15-GAL
Pinis canariensis	Canary Island Pine	15-GAL
Pistacia chinensis	Chinese Pistache	15-GAL
Koelreuteria bipinata	Chinese Flame Tree	15-GAL
Cinnamomum camphora	Camphor Tree	15-GAL
Fraxinus velutina 'Modesto'	Modesto Ash	15-GAL
Jacaranda mimosifolia	Jacaranda	15-GAL
Ginkgo biloba 'Fairmont'	Ginkgo	15-GAL
Liquidamber styraciflua	Liquidamber	15-GAL
Robina ambigua	Locust	15-GAL
Umbellularia californica	California Bay Tree	15-GAL

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FIGURE 3.3.4

N

The Preserve

Prpoposed Landscape Plan

SOURCE: Mid-Valley Engineering, 2006

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Specifically, the Master Development Plan includes detailed information in the form of text and diagram(s), organized in compliance with the Stockton Municipal Code Section 16-200 regarding Master Development Plans. The following information is provided at a minimum:

A. Proposed land uses. The distribution, location, and extent (e.g., density, intensity, etc.) of land uses proposed within the area covered by the Master Development Plan, including open space areas.

B. Infrastructure. A description of the major components of public and private facilities, including circulation/transportation, energy, sanitary sewage, solid waste disposal, water, storm water drainage, and other essential facilities proposed to be located within the Master Development Plan Area and needed to support the proposed land uses.

C. Land use and development standards. Criteria, guidelines, and standards by which development would proceed, and standards for the conservation, development, and utilization of natural resources, where applicable.

D. Implementation measures. A program of implementation measures and environmental mitigation measures, including regulations, programs, public works projects, and financing measures necessary to carry out the proposed land uses, infrastructure, and development and conservation standards and criteria.

E. Relationship to General Plan. A discussion of the relationship of the Master Development Plan to the objectives, policies, general land uses, and programs of the City's General Plan.

F. Additional information. The Master Development Plan shall contain any additional information determined to be necessary by the Community Development Director based on the characteristics of the area to be covered by the plan, applicable policies of the General Plan, or any other issue(s) determined by the Community Development Director to be significant. A Development Agreement to implement the Master Development Plan will be processed concurrently with the Master Development Plan.

The Master Development Plan, and this companion EIR, establish the criteria for evaluating and processing future specific proposals for development within The Preserve. The primary intent and purpose of the Master Development Plan are to create the framework for a comprehensive development and provide effective design solutions where the residential uses interfere with the proposed recreation and institutional uses within The Preserve, while remaining consistent with the policies, general land uses and programs of the City's General Plan. The Master Development Plan, Development Agreement, and companion EIR, provide information that is required to establish the appropriateness of The Preserve 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 The Preserve 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 taking into account the specific facts and conditions as disclosed by the project application.

Several findings are required before the Planning Commission and City Council may approve The Preserve 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:

A. The Master Development Plan is consistent with the objectives, policies, general land uses, programs and actions of the City's General Plan;

B. The Master Development Plan adequately addresses the physical development characteristics of The Preserve site;

C. The development standards identified in the Master Development Plan would serve to protect the public convenience, health, safety, and general welfare;

D. Development of The Preserve site would ensure a compatible land use relationship with the surrounding neighborhood;

E. The Master Development Plan is in compliance with applicable requirements of the City's Planning and Development Code, other local ordinances, and State and Federal Law; and

F. The Master Development Plan is in compliance with the provisions of the CEQA and the City's environmental guidelines.

The adopted Master Development Plan shall be reviewed by the Community Development Director every five (5) years to ensure compliance by the developer and/or the developer's successor in interest.

Building Permits approved for projects in The Preserve shall be valid for a period of one year from the date of approval by the City. Requests for extensions to the approved permits shall be made to the Community Development Director for consideration prior to the expiration of the approved permit. Extensions may be granted by the Community Development Director in one (1) year increments. Failure to initiate construction during the period the permits are valid and proceed with reasonable due diligence shall be cause for termination of the approved permits and a re-submittal of the required application forms and attachments shall be required.

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 The Preserve 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 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 for The Preserve.

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 The Preserve 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.

Key Design Elements

The primary design concept for the project is to create a high quality community, integrating a range of residential uses within the development. The development plans that follow the Master Development Plan respect the functional relationships between the varied housing products proposed for The Preserve in order to establish a high quality living environment. The following guidelines apply to The Preserve Project:

A. All buildings, structures and site improvements should be carefully integrated with the landscape.

B. Development plans that are intended to implement the Master Development Plan shall treat common features throughout the overall project area, such as the road and street landscaping or signage programs, in a manner consistent with the development standards and design guidelines included in this Master Development Plan.

C. Private development within any portion of the project area should emphasize pedestrian and bicycle connections with other portions of the project area.

D. Project-specific development plans should emphasize the treatment of the roads and streets, particularly the spine roads and entry gateways, as important public use areas.

Vehicular Circulation System

The circulation network, both vehicular and pedestrian, establishes the skeletal framework for the project area. All of the land uses would be interrelated by the circulation network that would also determine the form of the individual parcels. The following general guidelines are intended to establish the character of the circulation network:

A. Project-specific development shall identify a clear hierarchy of roads and streets based on the projected volume of traffic and the functional relationship of the proposed land uses.

B. Roads and street widths, centerline curves, medians and landscaped treatments, may deviate from the City standards in order to improve 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 Design Review Board and the City Engineer.

C. Entrances into neighborhoods from the collector streets are limited in number and shared between adjacent neighborhoods, when feasible, to reduce curb cuts and potential conflicts along streets. Public open space and park areas should front onto public streets and roads.

D. The primary intersections and neighborhood entries should incorporate decorative paving materials, monument signs, or other design patterns intended to celebrate 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.

E. Pedestrian trails have been incorporated into residential neighborhoods to provide connections to major circulation roads, public transportation facilities and with other pedestrian and bicycle connections within The Preserve.

F. The pedestrian circulation system should provide a link from residential development to the levee trail, public recreational facilities, schools and parks within The Preserve, and to trails along Trinity Parkway leading to the Spanos Park retail/office development.

G. Pedestrian walkways within the public rights-of-way of local streets will be a minimum of four feet (4') in width and constructed according to Stockton City Standards.

H. Combination pedestrian and bicycle paths will be a minimum 8 feet (8') in width. Such paths should be at designated locations to the compatible with the City of Stockton Existing and Future Bikeway Plan. The locations of these paths shall be shall be reviewed and approved by the Design Review Board and the City Engineer.

I. 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.

J. 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') unless the sidewalk is

meandering. The design of the walk and parkway areas shall be reviewed and approved by the Design Review Board and the City Engineer.

Pedestrian and Bicycle Circulation System

A system of paths for pedestrians and bicyclists would provide access to and between important destinations within the project area, such as the residential neighborhoods, the elementary school and parks. The pedestrian and bicycle circulation system would also provide links to areas outside The Preserve, including the commercial power center site in Spanos Park West, and the Marina to the northwest. The basic components of the proposed circulation system include an eight-foot (8') wide pedestrian and bicycle path located within landscaped corridors adjacent to the Otto Drive. A twelve-foot (12') wide path located along Trinity Parkway and along the top of Reclamation District levee along Disappointment/Pixley Slough and Mosher Slough will provide a connection to the paths within the proposed development and ultimately to the Class I bike path on the south side of Eight Mile Road. Pedestrian access would be provided within the villages by concrete sidewalks separated from the roadway system and a minimum of four feet (4') wide.

The pedestrian and bicycle circulation system would be compatible with the City of Stockton Existing and Future Bikeways Plan. The exact locations of the elements of the pedestrian/ bikeway system will be subject to the review and approval of the Design Review Board. See Figure 3.3.5 for the proposed addition of the bikeway system to the City of Stockton Bikeway Plan.

Additionally, traffic calming and pedestrian enhancement features would be incorporated as key elements of the roadway system. Traffic circles are slated for key intersections on the collector roadways. Also included will be high-visibility crosswalks (stamped concrete & sidewalk bulb-out) to further reduce traffic speeds and increase pedestrian safety.

Building Requirements

The residential development program for The Preserve consists of 15 villages. Twelve (12) of the villages (A, B, D, E, G through L, N and O) would be conventional market-rate housing units developed within the range of densities described in Table 3.3.A. Of these residential villages, three (3) villages C, F and M) would be developed as medium density residential developments. Use intensities proposed in any village shall not fall short of or exceed five hundred (2,500) square feet per family unit.

Maximum allowable lot coverage will vary by housing product. Lot coverage includes all buildings, accessory buildings, structures and covered patios. The following maximum lot coverage restrictions shall apply:

Traditional 5,000 Lot 60%
Small Lot Traditional 60%
Cluster Homes 65%
Alley Homes 70%
Condominiums 75%

LSA

FIGURE 3.3.5

The Preserve

Future Bikeway Plan

SOURCE: Mid-Valley Engineering, 2007

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As stated in Table 3.3.A, the residential density within any Village would range between 5.08 and 9.27 units/acre. The medium and lower density development has been intermixed throughout the project, permitting the entire range of development within the project similar proximity and equal enjoyment of the many project amenities. In addition to residential uses, other permitted uses within the villages would include Public and Private Recreational Facilities, Day Care/Pre-school, Public School Facilities, Parks and Open Space. Each village would represent individual neighborhoods, with a variety of architectural character.

Phasing

Future development within The Preserve will occur in phases responding to market demand and other economic factors as determined by the owner, developer, and/or successor-in-interest. Subsequent project phasing would only occur upon the condition that road improvements, wastewater collection, water supply, storm drainage, and other infrastructure improvements necessary to adequately serve the users of the subsequent project phases proposed within The Preserve are either fully constructed and operational, or would be constructed concurrently as part of the development which they would serve.

Development within The Preserve would commence under an initial phase consisting of: mass grading and dewatering of the project site; construction of the spine road right-of-way including stub-outs serving future phases, and; construction of required improvements including pedestrian and vehicular access into the project site.

The following provides a more detailed description of the anticipated project phasing, based on the primary land uses included in the Master Development Plan:

Phase IA:

Grading/Site preparation: 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, site clearing and grubbing, installation of the necessary equipment for site dewatering, trucking construction materials off-site and on-site, excavation, shaping and installation of all associated piping and equipment for the stormwater drainage facility.

Major/Backbone Infrastructure:

The first phase of the project infrastructure consists of: grading and installation of the main collector road, Otto Drive from Trinity Parkway to its western terminus at Bear Creek; Street "L", the primary collector road from Otto Drive to the north and a companion road network to the south including the storm drainage, water, sewer, gas, electricity, cable, telephone, and fiber optics, or any other utility, that would ultimately be installed within the right-of-way of the named streets.

The In-Tract portions of the subdivision will be built in the alphabetical order of the neighborhoods with three neighborhoods of different housing types being built at the same time. The parks in the neighborhood will be built concurrently with the phase of development.

3.4 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 (#11-05). In accordance with CEQA, prior to taking action on the proposed rezoning and Master Development Plan, the Stockton City Council must certify the Final Environmental Impact Report and adopt applicable CEQA Findings and the Mitigation Monitoring Program.

Mixed Use Zoning District. The project applicant has requested a rezone (City File #Z-13-05) from City of Stockton's Low Residential (RL) and Commercial (CG) zoning to Mixed Use (M-X) zoning district of the City's development code (Figure 3.4.1). The M-X zoning district establishes the specific land uses and specific development standards. In order to implement the M-X zoning district, the applicant must submit a Master Development Plan for approval. The zone change/rezone requires a Planning Commission recommendation and City Council approval.

General Plan Amendment. The applicant has requested a General Plan Amendment on the project site to eliminate the existing Commercial designation (City File GPA# 11-05). The current General Plan designation is Low-Medium Density Residential with Commercial and the proposed General Plan will consist of Low-Medium Density Residential only (Figure 3.4.2).

Master Development Plan. This Conceptual Master Development Plan (City File MDP# 6-05) includes detailed information in the form of text and diagrams (See previous Figure 3.3.1). 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#9-04) 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 Preserve project and will ensure that the applicant will develop The Preserve 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 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 and specify that additional environmental review will be required to address the ultimate development plan for The Preserve.

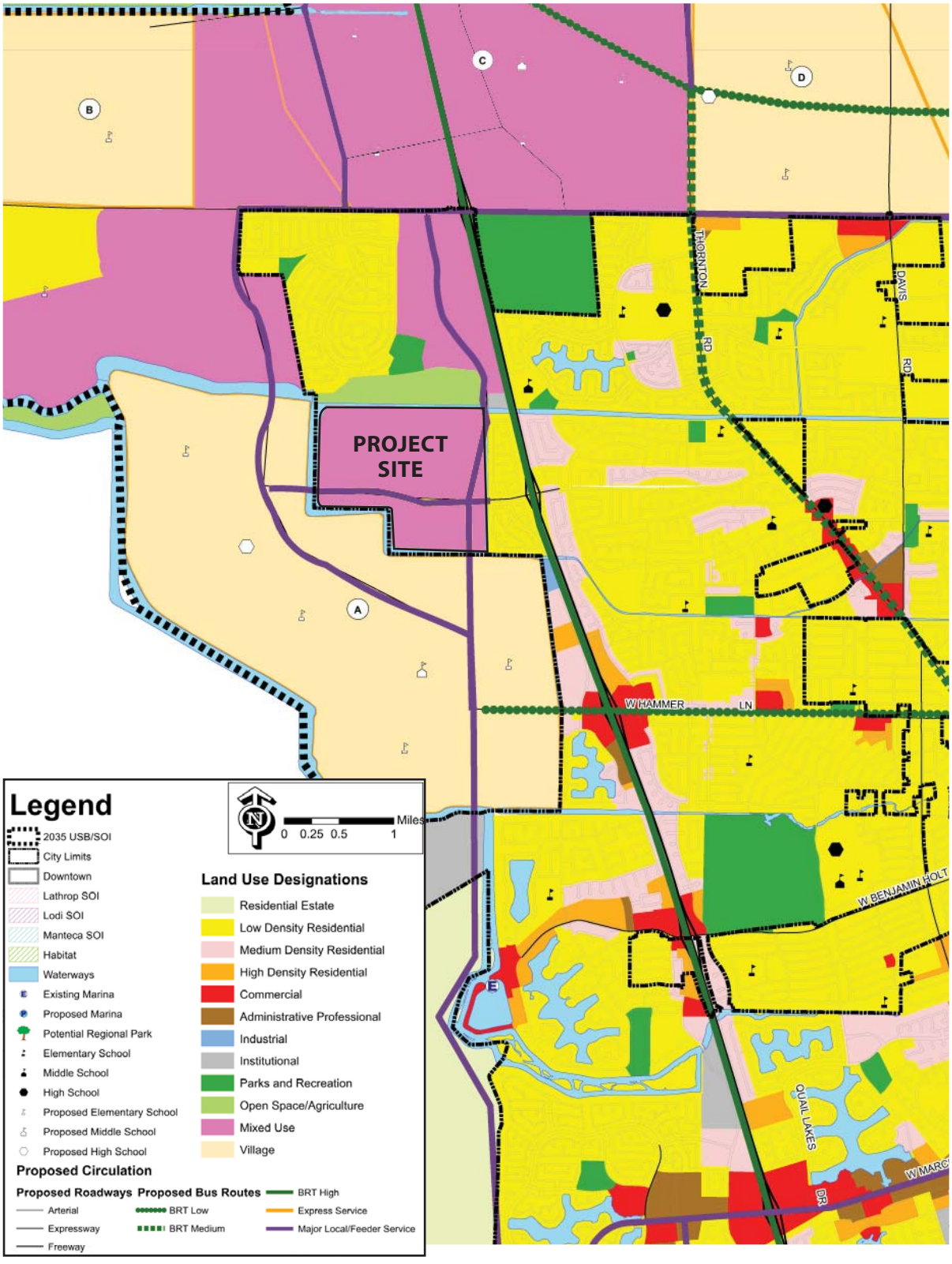

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FIGURE 3.4.1

The Preserve
Proposed General Plan Designations

SOURCE: The Preserve MDP, 2007

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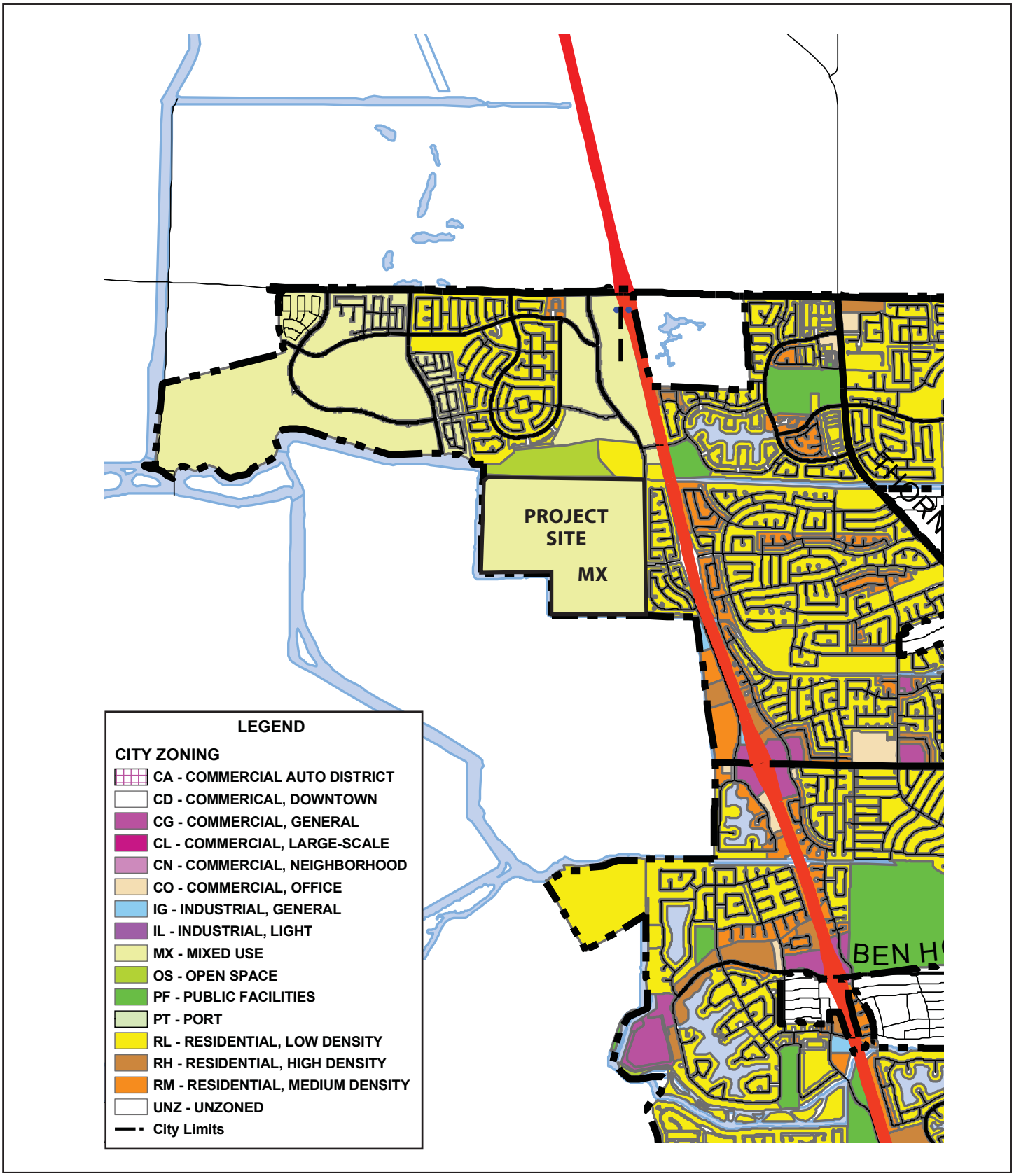

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FIGURE 3.4.2

The Preserve
Proposed Zoning

SOURCE: The Preserve MDP, 2007

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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.

Vesting Tentative Map. A tentative map (City File #28-05) has been filed that is consistent with the Master Development Plan layout. Tentative maps require City Planning Commission approval.

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 3.3.B summarizes the proposed permits and approvals required by the City and other regulatory agencies.

Table 3.3.B: Summary of Permits and Approvals

Decision Maker	General Plan Amendment (11-05)	Zone Change (Pre-Zoning) (Z-13-05)	Master Development Plan (MDP #6-05)	Development Agreement (DA #9-04)	Site Plan Review	Tentative Map (TM #28-05)	Storm-water Discharge Pump Station	Section 401* permit; NPDES Permit	Streambed Alteration*	Habitat Conservation Plan Amendment (SJMSCP)	Air Quality Permit
City Council	A	A	A	A							
City Planning Commission	R	R	R	R		A					
Development Review Committee				R		R					
Community Development Director					A						
Lodi Unified School District											
Regional Water Quality Control Board							A	A			
California Department of Fish and Game									A		
State Reclamation Board/RD 21-26							A				
SJCOG										A	
San Joaquin Valley Air Pollution Control District											A

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

CHAPTER 4.0 ENVIRONMENTAL ANALYSIS

INTRODUCTION

The following documents serve as major references or as background studies for this DEIR and are, therefore, incorporated by reference in the DEIR. 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.

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

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

Other documents related to the proposed project are as follows:

Aksland Avenue/Trinity Parkway Bridge and Roadway Improvements. A Mitigated Negative Declaration was approved by the city of Stockton in 2004 that provides for a bridge crossing over Bear Creek as well as extending a two-lane roadway from the bridge to Otto Drive. An addendum was prepared that addresses construction of a four-lane roadway while continuing to restrict vehicular travel to two lanes.

The Preserve Levee Improvement. The Reclamation District (RD) 2126 approved a Mitigated Negative Declaration in May 2006 allowing reconstruction of the existing levees to provide flood protection to The Preserve for enhanced flood protection. An Addendum was approved that allows reconfiguration of the interior drainage ditch system to accommodate a new storm drain outfall into Mosher Slough.

Trinity Parkway Extension Phase II. A Mitigated Negative Declaration was approved by the City of Stockton on July 31, 2007 allowing for the extension of Trinity Parkway as a four lane roadway from Otto Drive to Mosher Slough. This proposed extension will ultimately provide vehicular service into the Shima Tract to the south. The existing dryland levee will be relocated to the west.

Mosher Slough Bridge/Trinity Parkway/Hammer Lane. This environmental document also addresses, at a "program" level, the potential effects from constructing the Mosher Slough/Trinity Parkway Bridge, and the southerly extension of Trinity Parkway into the Shima Tract. These improvements are needed for both the Preserve and Sanctuary projects and will be constructed to serve the transportation need depending on the respective traffic demand. For the Preserve project (i.e., proposed project), technical biological and cultural resource surveys were conducted for the ultimate extension of Trinity Parkway/Hammer Lane through the Shima Tract. It should also be noted that, for the Shima Tract (the Sanctuary project), the EIR evaluated the bridge and extension of Trinity

Parkway to Hammer Lane in conjunction with the Master Development Plan circulation plan.

Format for Environmental Analyses

The purpose of this chapter is to present information on the various environmental topics that are relevant to The Preserve 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 The Preserve 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 facilitates 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

This section is based on information contained in the Geotechnical Investigation of The Preserve, by Kleinfelder and Associates included in Appendix D.

4.1.1 Existing Setting

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. Elevation ranges from sea level to 800 feet within the valley plain. The valley has been filled with a thick sequence of marine and non-marine sediments from the late Jurassic to Holocene era. The uppermost stratum of the Great Valley represents, 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 the Sierra Nevada Mountains to the east. Granitic and metamorphic rock outcroppings along most of the western, southwestern, southern southeastern flanks; and volcanic rocks and deposits protrude 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 is located on the eastern margin of the delta and it is estimated that the historic eastern boundary of tidal wetlands runs along the eastern border of the site from north to south. There are some indications of ancient channels near the site based on tonal contrasts on aerial photography, although no clear indications were identified on site.

The site is nearly flat except for the levees, drainage channels and roadway embankments. The natural ground surface ranges from an elevation of +2.7 feet at the east edge to about elevation -2.1 feet at the southwest corner. The existing levees along Bear Creek and Mosher Slough provide flood protection for the site and vary in top elevation from 6 to 10.4 feet. Internal drainage is provided by a series of shallow ditches, which include toe drains for most of the levees.

Topography from 1907-1908 indicates that prior to reclamation the Pixley and Disappointment Sloughs were the defined drainage for the site. Mosher Slough and the Bear Creek channel are artificial channels cut through low-lying tidal wetlands. Site topography from 1952 and 1953 indicates that the site was much the same as it is today, although marshy areas were shown adjacent to the east.

Geologic Conditions

The project site is located in the north central portion of the San Joaquin Valley in an area characterized by delta fluvial and alluvial fan deposits. The site is underlain by partly consolidated, locally cemented silt and sand sediments of the Modesto Formation of Pleistocene age derived primarily from glacial outwash. Peat or organic soil deposits overly the Pleistocene aged Modesto Formation on the site and are indicated to be less than 5 feet thick. It is likely that surficial organic matter has been substantially oxidized by cultivation. Deposits of loose-soft mineral soils and more than 5 feet of peat are expected to be very limited in lateral extent and thickness; however, thicker deposits associated with remnants of ancient channel cannot be precluded.

At greater depth the area is underlain by progressively older layers of sediment with crystalline basement rocks present at more than 1000 meters depth. The sediments generally dip very gently to the west with slight unconformities marking different generations of deposition.

Groundwater

Owing to the low elevation of the site, adjacent bodies of water and the typically granular nature of underlying soils, groundwater levels are approximately 5 feet below the existing ground surface. Groundwater levels measured in the borings ranged from about 4 to 6 feet below estimated natural ground surface with a gentle southwesterly gradient. However, changes in ground water conditions could occur at the site in the future due to variations in rainfall, groundwater withdrawal, construction activities, or other factors not apparent at the time during which the boring samples were taken.

Seismic

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 and earthquake events on several active faults may subject the site to significant ground shaking. The closest faults are the Great Valley (20 miles to the west), Antioch (24 miles to the west) and Greenville (27 miles to the west) faults, as shown in Table 4.1.A. As such, the site would be subject to potentially strong seismic ground shaking in the event of an earthquake on one of the nearby faults.

Table 4.1.A: Active Faults

Fault	Approximate Distance From Site (Miles)	Maximum Credible Event (Richter Magnitude)	Ground Acceleration Due to Maximum Credible Earthquake (g)
Foothills Fault Zone	32 9 (east)	6.5	0.08
Antioch Fault	24 (west)	6.75	0.13
Greenville Fault	27 (west)	7.25	0.15
Calaveras Fault	38 (west)	7.5	0.13
San Andreas Fault	64 (west)	8.25	0.10
VacaFault	27 (west)	NA	NA
Great Valley	20 (west)	NA	NA

Source: LSA, 1985 and Kleinfelder 2003

Soils

Subsurface soils and conditions encountered in reference and test borings can be divided into three general units: 1) underlying competent mineral soils; 2) surficial native soils; and 3) levee fill.

The underlying competent mineral soils encountered in all borings consists of compact to dense clayey and silty sand, sandy silt and sand and stiff-hard silty sandy clay. These soils were encountered at depths of 1 to 5 feet below natural ground surface (about 11 to 15 feet below the top of levees) and reach depths of at least 52 feet below ground surface (bgs).

The surficial natural soils are distinctly different between the cultivated areas and the relatively virgin ground underlying levee fill. In cultivated areas inside the levees the upper native soils unit typically consist of stiff-very stiff silty and sandy clay. These soils are dark brown or black, a typical indicator of organic content; however, significant organic material content was not visually evident. Compaction, oxidation and desiccation of surficial soils associated with agricultural operations has resulted in increased soil strength and bearing characteristics.

Areas of the site with clayey soils are considered to have expansive characteristics and are prone to differential movement due to heaving or shrinking related to moisture changes.[1]

The upper native soils unit underlying levee fill are weaker than elsewhere; loose-soft clayey silty sand and peaty silt were encountered in the borings. Weak and/or disrupted soils are present at the surface in cultivated areas and in the internal drainage/irrigation channels.

Levee fill encountered in the on-site boring is variable in consistency and composition, ranging from very loose to semi compact clayey and silty sand to very soft to stiff sandy clay. With typical levee construction using materials dredged from adjacent channels, levee materials are expected to typically reflect the adjacent natural, near surface soils profile.

Existing Polices and Regulations. The following General Plan Policies relate to Geology, Soils and Seismicity:

Urban Growth and Overall Development
Goal 4: Promote and maintain environmental quality and the preservation of agricultural land while promoting logical and efficient urban growth.

Policy 2: Urban growth shall be geographically limited by such environmental hazards as flood vulnerability and unstable soil characteristics.

General Safety Issues
Goal 1: Protect the community from injury and damage resulting from natural catastrophes and hazardous conditions.

[1] Kleinfelder and Associates, 1985. Geotechnical Investigation of parcel 1, 2, and 3 of The Preserve.

Policy 1: Development shall only be permitted in those areas where the potential danger to the health and safety of people can be mitigated.

Seismic and Other Geologic Hazards
Goal 1: Protect the community from the hazards of expansive soils, seismic dangers and other geologic activity.

Policy 4: Recognize the limitations of expansive and peat soils in designating areas for urban growth and development.

Policy 6: Development proposed within areas of potential geologic hazard shall not be subject to nor contribute to hazardous conditions.

Open Space
Goal 1: Preserve and enhance open space areas for the preservation of natural resources including plant life, habitat for fish and wildlife species, ecologically sensitive areas, and historic and cultural resources.

Policy 2: Urban development adjacent to the Delta and the related waterways should give special consideration of 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.

4.1.2 Impact Significance Criteria

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

GEO-a Expose people or structures to substantial risk of loss, injury, or death involving:
-Rupture of a known active or potentially active fault;
-Strong seismic ground shaking;
-Seismic-related ground failure, including liquefaction; or
-Landslides.

GEO-b Result in substantial soil erosion or loss of topsoil.

GEO-c Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

GEO-d Be located on expansive or corrosive soils, which could cause substantial damage to building foundations, pavements, utilities, and/or other improvements.

4.1.3 Impacts And Mitigation Measures

Potentially Significant Effects

Impact GEO-1: Expose people or structures to seismic related hazards.
Ground shaking from earthquakes in the general region could cause damage to people and property unless properly mitigated. The amount of ground shaking depends on the magnitude of the earthquake, the distance from the epicenter, the type of earth materials between the site and the fault rupture, and the structural design of the site. Ground shaking potential is estimated on a worst-case basis by assessing the maximum expected earthquakes and designing for peak accelerations that may be generated. The project is required to meet the California Building Code (CBC), incorporating the 1997 edition of the Uniform Building Code (UBC), and City design requirements and guidelines. The adverse effects of seismically-induced ground shaking on the potential development and users can be reduced to generally accepted levels by completing the project design and construction in conformance with current best standards for earthquake resistant construction in accordance with the CBC and City Code.

Mitigation Measure GEO-1: 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. Plans for all structures shall be reviewed by the Director of Community Development prior to the approval of the building plans and building permits. This report will include:

An analysis of seismic hazards anticipated at the project site from regional faults.

- 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.
- The project applicant shall 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 defined in the seismicity report.
- It is acknowledged that seismic hazards cannot be completely eliminated, even with site-specific geotechnical investigation and advanced building practices (as provided in the mitigation measure above). However, exposure to seismic hazards is a generally accepted part of living in the seismically active areas of California.

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

Impact GEO-2: Result in substantial soil erosion or loss of topsoil.
Implementation of the proposed project would require grading for proposed roadways, infrastructure and buildings pads. Within the site, increased erosion may occur on unprotected rough graded surfaces if they are exposed to rainfall and surface runoff.

Mitigation Measure GEO-2a: Prior to the approval of the improvement plans for site development, the project applicant will submit an erosion control plan to the Director of the 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 comply with applicable State and City codes, regulations and adopted standards.

Mitigation Measure GEO-2b: 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 (RWQCB) 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. The conditions included in Significance Criterion GEO-b will be avoided.

Impact GEO-3: Be located on a geologic unit or soil that is unstable.
The project site is located on soils that exhibit characteristics associated with unstable soils. The geotechnical report prepared identified specific design features to address this impact.

Mitigation Measure GEO-3: A 2005 Geotechnical Services Report prepared by Kleinfelder, Inc. for The Preserve project recommends specific guidelines for the following features;

- Concrete Floor Slabs
- Exterior Flatwork
- Spread Foundations
- Post-Tensioned Slabs
- Lateral Resistance
- Retaining Walls
- Asphalt Concrete Pavements
- Site Drainage and Landscaping
- Soil Corrosion
- General Earthwork

Adherence to these guidelines and design characteristics shall be implemented in the construction of the project, and evidence of implementation shall be made available to the City of Stockton.

Implementation of the above listed mitigation measure would reduce impacts affecting unstable soils to less than significant levels. The conditions included in Significance Criterion GEO-c will be avoided.

Impact GEO-4: Be located on potentially expansive soils.
Areas with the project site are considered to have clayey soils with expansive characteristics and are prone to differential movement due to heaving or shrinking related to moisture changes. This condition occurs when expansive soils undergo alternating cycles of wetting (swelling) and drying (shrinking). During these cycles, the volume of the soil changes markedly. As a consequence of such volume changes, structural damage or rupture of utilities may occur if the potentially-expansive soils were not considered in the design and construction. Implementation of **Mitigation Measure GEO-3** would reduce this impact to a less-than-significant level.

Implementation of the above listed mitigation measure would reduce impacts affecting expansive soils to less than significant levels. Consequently, the conditions included in Significance Criterion GEO-d will be avoided.

4.1.4 Level Of Significance After Mitigation

Implementation of mitigation measures will create a less than significant impact on geophysical resources.

4.2 AIR QUALITY

Air quality analysis is provided in Appendix E.

4.2.1 Existing Setting

Air pollution in the project area is from a combination of natural and man-made sources. Natural and man-made sources of air pollution consist of windblown dust, agricultural operations, fires from prescribed burning and agricultural burning, hydrocarbons emitted from natural vegetation, and other pollutants from mobile and stationary sources.

Climate and Meteorology

A region's topographic features have a direct correlation with air pollution flow and therefore are used to determine the boundary of air basins. A local air district is then assigned to each air basin and is responsible for providing air quality strategies to bring the air basin into compliance with the National Ambient Air Quality Standards (NAAQS). The proposed project is located in the San Joaquin Valley Air Basin (SJVAB), which is comprise of approximately 25,000 square miles and covers all of seven counties including Fresno, Kings, Madera, Merced, San Joaquin, Stanislaus and Tulare, and the western portion of an eighth, Kern. San Joaquin Valley Air Pollution Control District (SJVAPCD) is the agency responsible for air quality in SJVAB.

The SJVAB is defined by the Sierra Nevada mountains in the east (8,000 to 14,000 feet in elevation), the Coast Ranges in the west (averaging 3,000 feet in elevation), and the Tehachapi mountains in the south (6,000 to 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 Straits where the San Joaquin-Sacramento Delta empties into San Francisco Bay. An aerial view of the SJVAB would simulate a ‘bowl’ opening only to the north. These topographic features restrict air movement through and out of the basin.

Although marine air generally flows into the basin from the San Joaquin River Delta, the Coast Range hinders wind access into the SJVAB from the west, the Tehachapis mountains prevent southerly passage of air flow, 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 SJVAB. As a result, the SJVAB is highly susceptible to pollutant accumulation over time. Most of the surrounding mountains are above the normal height of summer inversion layers (1,500 to 3,000 feet).

Local climatological effects, including wind speed and direction, temperature, inversion layers, and precipitation and fog, can exacerbate the air quality in the SJVAB. Wind speed and direction play an important role in dispersion and transport of air pollutants. Wind at the surface and aloft can disperse pollution by mixing vertically and by transporting it to other locations. For example, in the summer, wind usually originates at the north end of the SJVAB and flows in a south-southeasterly direction through the SJVAB, through Tehachapi pass, into the Southeast Desert Air Basin. However, in the winter, wind direction is reversed and flows in a north-northwesterly direction. In addition to the seasonal wind flow, a sea breeze flows into SJVAB during the day and a land breeze flowing out of the SJVAB at night. The diversified wind flow enhances the pollutant transport capability within SJVAB.

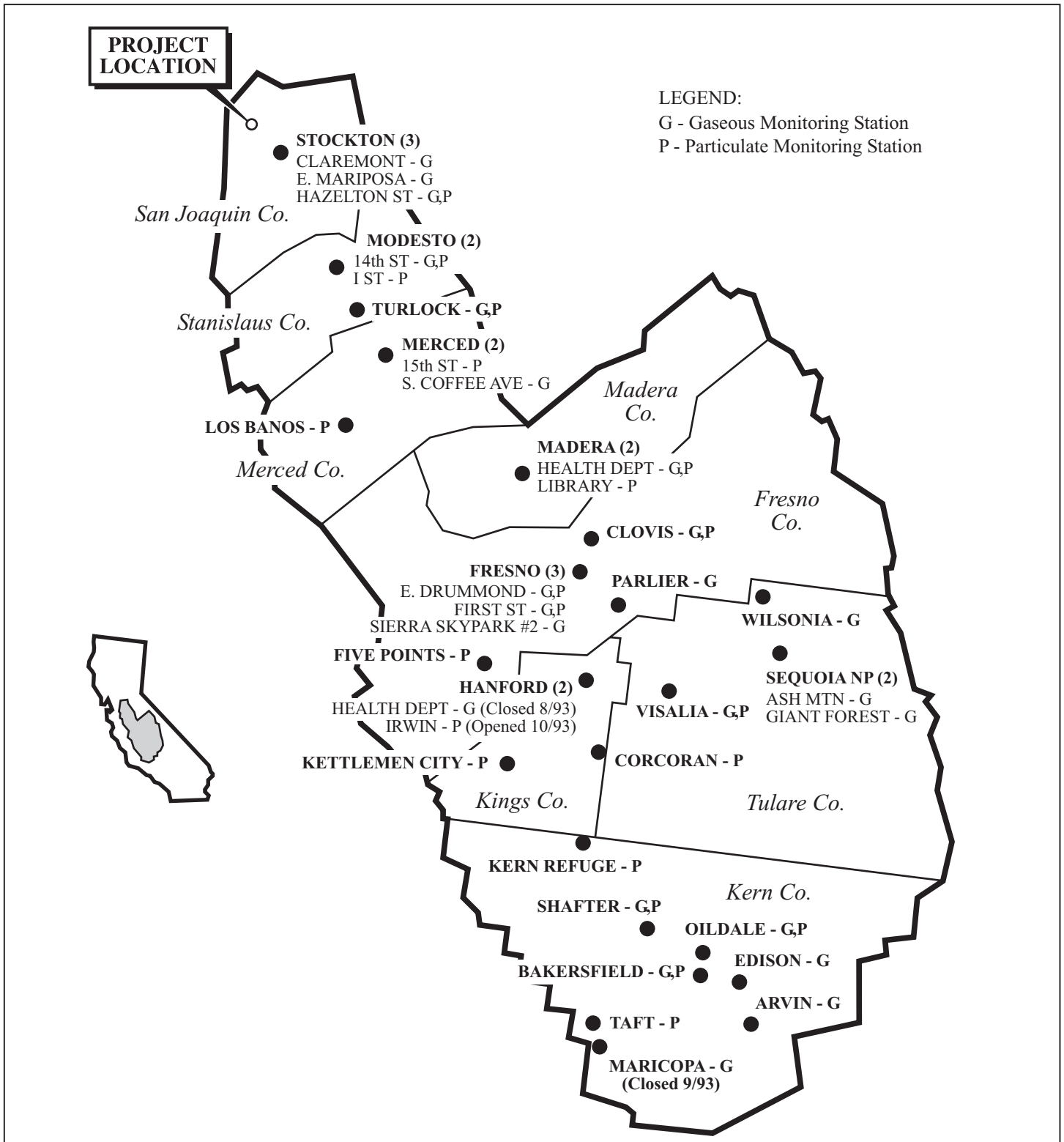
The climatological station monitoring temperature closest to the project site is the Stockton Hazelton Station. Monthly average temperature recorded at the Stockton Hazelton Station for the last 57 years ranges from 54.1° F in January to 92.5°F in July. January is typically the coldest month in this area. The Stockton Hazelton monitoring station also records precipitation throughout the year. The majority of annual rainfall in the Basin occurs between November and April. Summer rainfall is minimal and generally limited to scattered thundershowers along the coastal side of the mountains. Average monthly rainfall measured at the station during that period varied from 3.25 inches in January to 0.48 inches or less between May and October, with an annual total of 16.09 inches. Patterns in monthly and yearly rainfall totals are unpredictable due to fluctuations in the weather. The locations of air quality monitoring stations are shown on Figure 4.2.1.

The vertical dispersion of air pollutants in the SJVAB is limited by the presence of persistent temperature inversions. Because of expansional cooling of the atmosphere, air temperature usually decreases with altitude. A reversal of this atmospheric state, where the air temperature increases with height, is termed an inversion. Inversions can exist at the surface, or at any height above the ground. The height of the base of the inversion is known as the "mixing height." This is the level within which pollutants can mix vertically. Air above and below the inversion base does not mix because of the differences in air density. Warm air above the inversion is less dense than below the base. The inversion base represents an abrupt density change where little exchange of air occurs. Semi-permanent systems of high barometric pressure fronts frequently establish themselves over the SJVAB, deflecting low pressure systems that might otherwise bring cleansing rain and winds.

Inversion layers are significant in determining ozone formation, and carbon monoxide (CO) and fine particulate matter (PM_{10}) concentrations. Ozone and its precursors will mix and react to produce higher ozone concentrations under an inversion. The inversion will also simultaneously trap and hold directly emitted pollutants such as carbon monoxide. PM_{10} is both directly emitted and created in the atmosphere as a chemical reaction. Concentration levels are directly related to inversion layers due to the limitation of mixing space.

Surface or radiation inversions are formed when the ground surface becomes cooler than the air above it during the night. The earth's surface goes through a radiative process on clear nights, where heat energy is transferred from the ground to a cooler night sky. As the earth's surface cools during the evening hours, the air directly above it also cools, while air higher up remains relatively warm. The inversion is destroyed when heat from the sun warms the ground, which in turn heats the lower layers of air; this heating stimulates the ground level air to float up through the inversion layer.

The combination of stagnant wind conditions and low inversions produces the greatest pollutant concentrations. On days of no inversion or high wind speeds, ambient air pollutant concentrations are lowest. Periods of low inversions and low wind speeds are conditions favorable to high concentrations of CO and PM_{10} . In the winter, the greatest pollution problems are carbon monoxide and oxides of nitrogen (NO_x) because of extremely low inversions and air stagnation during the night and early morning hours. In the summer, the longer daylight hours and the brighter sunshine combine to cause a reaction between hydrocarbons and oxides of nitrogen to form photochemical smog.



LSA

FIGURE 4.2.1

The Preserve
Air Quality Monitoring Stations

SOURCE: California Air Resources Board
P:\AGS434\Graphics\EIR Figures\4.2.1.cdr (11/30/05)

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.

Ozone

Ozone (smog) is formed by photochemical reactions between oxides of nitrogen and reactive organic gases, rather than being directly emitted. Ozone is a pungent, colorless gas. Elevated ozone concentrations result in reduced lung function, particularly during vigorous physical activity. This health problem is particularly acute in sensitive receptors such as the sick, elderly, and young children. Ozone levels peak during the summer and early fall months.

Carbon Monoxide

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. CO passes through the lungs into the bloodstream, where it interferes with the transfer of oxygen to body tissues.

Nitrogen Oxides

Nitrogen dioxide (NO_2), 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 NOx. NOx is a primary component of the photochemical smog reaction. Nitrogen oxides also contribute to other pollution problems, including a high concentration of fine particulate matter, poor visibility, and acid deposition. NO_2 decreases lung function and may reduce resistance to infection.

Sulfur Dioxide

Sulfur dioxide (SO_2) is a colorless irritating gas formed primarily from incomplete combustion of fuels containing sulfur. Industrial facilities also contribute to gaseous SO_2 levels in the region. SO_2 irritates the respiratory tract, can injure lung tissue when combined with fine particulate matter, and reduces visibility and the level of sunlight.

Particulate Matter

Particulate matter is the term used for a mixture of solid particles and liquid droplets found in the air. Coarse particles are those that are larger than 2.5 microns but smaller than 10 microns, or PM_{10}. $PM_{2.5}$ refers to fine suspended particulate matter with an aerodynamic diameter of 2.5 microns or less that is not readily filtered out by the lungs. Nitrates, sulfates, dust, and combustion particulates are major components of PM_{10} and $PM_{2.5}$. These small particles can be directly emitted into the atmosphere as by-products of fuel combustion, through abrasion, such as tire or brake lining wear, or through fugitive dust (wind or mechanical erosion of soil). They can also be formed in the atmosphere through chemical reactions. Particulates may transport carcinogens and other toxic compounds that adhere to the particle surfaces, and can enter the human body through the lungs.

Reactive Organic Gases

Reactive organic gases (ROG) are not a criteria pollutant, but are precursors to ozone formation. They are formed from combustion of fuels and evaporation of organic solvents. ROG is a prime component of the photochemical smog reaction. Consequently, ROG accumulates in the atmosphere much quicker during the winter when sunlight is limited and photochemical reactions are slower.

Table 4.2.A shows both federal and State standards for these criteria pollutants. Table 4.2.B lists the sources, primary health effects, and status of meeting the standards of these criteria 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 of California has also established standards (SAAQS) for criteria pollutants which are more stringent than the NAAQS.

Air quality monitoring stations are located throughout the nation and maintained by the local air pollution control district and state air quality regulating agencies. Ambient air data collected at permanent monitoring stations are used by the EPA to identify regions as "attainment" or "non-attainment" depending on whether the regions met the requirements stated in the primary NAAQS. Attainment areas are required to maintain their status through moderate, yet effective air quality maintenance plan. Non-attainment areas are imposed with additional restrictions as required by the EPA. In addition, different classifications of attainment such as marginal, moderate, serious, severe, and extreme are used to classify each air basin in the state on a pollutant-by-pollutant basis. Different classifications have different mandated attainment dates and are used as guidelines to create air quality management strategies to improve air quality and comply with the NAAQS by the attainment date.

A region is determined to be unclassified when the data collected from the air quality monitoring stations do not support a designation of attainment or non-attainment, due to lack of information, or a conclusion cannot be made with the available data.

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	0.070 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 Cloride[9]	24-Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography	

Source: ARB, November 29, 2005.
Footnotes:

1 California standards for ozone; carbon monoxide (except Lake Tahoe); sulfur dioxide (1 and 24 hour); nitrogen dioxide; suspended particulate matter - PM_{10}, $PM_{2.5}$, 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 PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 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 the Major Criteria Air Pollutants

Pollutants	Sources	Health Effects
Particulate Matter (PM10: less than or equal to 10 microns)	• Cars and trucks, especially diesels • Fireplaces, woodstoves • Windblown dust, from roadways, agriculture and construction	• Increased respiratory disease • Lung damage • Premature death
Ozone (O3)	• Formed by chemical reactions of air pollutants in the presence of sunlight. Common sources: motor	• Breathing difficulties • Lung damage

Pollutants	Sources	Health Effects
	vehicles, industries, and consumer products	
Carbon Monoxide (CO)	• Any source that burns fuel such as cars, trucks, construction and farming equipment, and residential heaters and stoves	• Chest pain in heart patients • Headaches, nausea • Reduced mental alertness • Death at very high levels
Nitrogen Dioxide (NO2)	• See Carbon Monoxide sources	• Lung damage
Toxic Air Contaminants	• Cars and trucks, especially diesels • Industrial sources such as chrome platers • Neighborhood businesses, such as dry cleaners and service stations • Building materials and products	• Cancer • Chronic eye, lung, or skin irritation • Neurological and reproductive disorders

Source: CARB 2001

The attainment status in the San Joaquin County area of the SJVAB is shown in Table 4.2.C as follows:

Table 4.2.C: Attainment Status in San Joaquin County Area

POLLUTANT	STATE	FEDERAL
Ozone - 1 hour	Non-attainment/Severe	No Federal Standard
Ozone 8 hour	No State Standard	Non-attainment/Serious
PM_{10}	Non-attainment	Non-attainment/Serious
$PM_{2.5}$	Non-attainment	Non-attainment
CO	Attainment	Attainment/Unclassified
NO_2	Attainment	Attainment/Unclassified
Sulfur Dioxide	Attainment	Unclassified
Lead	Attainment	No Designation
Hydrogen Sulfide	Unclassified	No Federal Standard
Sulfates	Attainment	No Federal Standard
Visibility Reducing Particles	Unclassified	No Federal Standard

Maps & Tables of the Area Designations for the State and National Ambient Air Quality Standards and Expected Peak Day Concentrations and Designation Values, Air Resources Board, January 1998; Classification letter, ARB Staff, March 16, 1993; ARB Action, November 9, 1994; ARB Action, November 21, 1996;CO: (1) 40 CFR Parts 52 and 81 -- Fresno Urbanized Area, Bakersfield Metropolitan Area, Stockton Urbanized Area and Modesto Urbanized Area redesignated on March 31, 1998, effective June 1, 1998
Note: The Federal One Hour Ozone National Ambient Air Quality Standard was revoked on June 15, 2005.
Source: CARB

Climate Change/Global Warming

Climate change refers to changes in the global or a regional climate over time. These fluctuations are driven by processes that manipulate the greenhouse effect. Greenhouse gases in our atmosphere, such as carbon dioxide, methane, and nitrous oxide, keep the Earth's average surface temperature close to a hospitable 60 degrees Fahrenheit. Processes that influence the amounts of greenhouse gases include those internal to the Earth, various external, natural forces and, more recently, human activities.

Scientists have documented an overall warming trend since late 19th century, with the decade of the 1990's being the warmest of the 20th century. As the average temperature of the Earth increases, weather patterns are affected, and physical changes will likely have an effect on California's public health, economy and ecology. In California, an area of considerable concern is the effect of climate change and the implications on the water supply, the majority of which is stored in the Sierras during the winter and spring as snow. Warmer winter temperatures could result in an increase of the amount of precipitation falling as rain and a reduced snow pack. Heavier rainfall could increase the risk of flooding. Another predicted outcome of climate change, a rise in sea level, is already occurring in California, with a 3 to 8 inch rise in the last century. Higher temperatures also cause an increase in harmful air emissions.

Scientists have modeled potential near-term climate scenarios, concluding that a large degree of uncertainty remains regarding the long-term consequences. On a State level, contributions to climate changes can be initiated by reducing traffic congestions, criteria air pollutants, and emissions of green house gases from mobile sources. However, based on uncertainty and inconclusive findings from scientific study, there is no significant environmental climate change impact related to the proposed project that can be predicted in light of the lack of established methods and standards of significance for analyzing project-specific impacts. City guidelines, compliance with local air quality districts, and specific mitigation measures will help address the uncertainty regarding climate change and ensure that the project's proposed human activities do not significantly contribute to greenhouse gas concentrations.

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-Hazelton Station, and its

air quality trends are representative of the ambient air quality in the project area. The pollutants[1] monitored are CO, O_3, PM_{10}, $PM_{2.5}$, and NO_2.

The ambient air quality data in Table 4.2.D show that CO and NO_2 levels are well below relevant State and federal standards. $PM_{2.5}$ levels were consistently lower than standards. O_3 and PM_{10} levels occasionally exceeded State and federal standards during the last three years. Also shown in Table D, SO_2 levels are not monitored in the San Joaquin Basin.

Table 4.2.D: Ambient Air Quality at Stockton-Hazelton Street 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)		2.9	2.5	3.1
Number of days exceeded:	State: ≥ 9.0 ppm	0	0	0
	Federal: ≥ 9 ppm	0	0	0
Ozone (O_3)				
Maximum 1 hr concentration (ppm)		0.099	0.096	0.104
Number of days exceeded:	State: > 0.09 ppm	3	1	3
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 (PM_{10})				
Maximum 24 hr concentration ($\mu g/m^3$)		79.0	60.0	88.0
Number of days exceeded:	State: > 50 $\mu g/m^3$	8	3	3
	Federal: > 150 $\mu g/m^3$	0	0	0
Annual arithmetic average concentration ($\mu g/m^3$)		29.8	29.4	28.4
Exceeded for the year:	State: > 20 $\mu g/m^3$	Yes	Yes	Yes
	Federal: > 50 $\mu g/m^3$	No	No	No
Fine Particulates ($PM_{2.5}$)				
Maximum 24 hr concentration ($\mu g/m^3$)		44.0	41.0	45.0
Number of days exceeded:	Federal: > 65 $\mu g/m^3$	0	0	0
Annual arithmetic average concentration ($\mu g/m^3$)		ND	13.2	13.6
Exceeded for the year:	State: > 12 $\mu g/m^3$	No	Yes	Yes
	Federal: > 15 $\mu g/m^3$	No	No	No
Nitrogen Dioxide (NO_2)				
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 (SO_2) (Bethel Island, Contra Costa)				
Maximum 1 hr concentration (ppm)		0.017	0.015	0.016

[1] Air quality data. 2002-2005; EPA and ARB Web sites.

Pollutant	Standard	2005	2004	2003
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	0.008
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
$\mu g/m^3$ = micrograms per cubic meter
ND = No data. There was insufficient (or no) data to determine the value.

Methodology

There are a number of air quality modeling tools available to assess air quality impacts of projects, however, certain air districts such as the SJVAPCD have created guidelines and requirements to conduct air quality analysis. SJVAPCD's document, Guide for Assessing and Mitigating Air Quality Impacts (1998) was adhered to in the assessment of air quality impacts for the proposed project. The air quality models of URBEMIS 2002 and CALINE4 are recommended by SJVAPCD and were used in this air quality assessment. A brief discussion of each model is described below.

The air quality assessment includes estimating emissions associated with short-term construction and long-term operation of the proposed project. Criteria pollutants with regional impacts would be emitted by stationary or area (direct) sources and mobile (indirect) sources associated with the proposed project. Long-term stationary or area sources emissions include electricity and natural gas usage. Long-term mobile sources emissions include vehicle trips associated with the proposed project. In addition, localized air quality impacts, i.e., higher carbon monoxide concentrations (CO hot spots) near intersections or roadway segments in the project vicinity would potentially occur due to project generated vehicle trips.

The URBEMIS 2002 (Urban Emission Model) computer program is the most current air quality model available for estimating emissions associated with land use development projects such as residential development, shopping centers, office buildings, and hotels. URBEMIS 2002 calculates long-term stationary or area sources emissions and long-term mobile sources emissions associated with these land uses.

The CALINE4 model is widely used by Caltrans to predict CO concentrations near roadways. Caltrans also developed a document, Transportation Project-Level Carbon Monoxide Protocol (Caltrans, 1997) to provide guidance and consistency for air quality analysis conducted in the State of California. The CALINE4 model estimates CO concentrations at designated receptor locations near intersections or roadway segments based on traffic volume, roadway geometry, topography, and meteorological data. Receptor locations are placed at areas accessible by the public such as sidewalk, school, residential property, and any other locations deemed sensitive to bad air quality. The purpose is to determine the impact of the proposed project on the general public in the local vicinity.

CALINE4 estimates the CO concentration at these receptor locations and the results are used to determine the significance of the project's impact on local air quality.

The results from the air quality models, URBEMIS 2002 and CALINE4, were used to determine the net changes in ambient air pollutants concentrations between the baseline (future with approved projects) scenario, and the horizon (future with proposed project) scenario. Because the baseline emissions would occur if the proposed project is not approved and implemented, the net changes of pollutant concentrations determine the significance and impact on regional and local air quality as a result of the proposed project. The results also allow the local government to determine whether the proposed project will deter the region from achieving the goal of reducing pollutants in accordance with the AQAP in order to comply with federal and State ambient air quality standards.

Construction Emission Measures

Specific criteria for determining the potential air quality impacts of a project are set forth in the SJVAPCD's Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI, 1998). A project's construction phase produces many types of emissions, but PM_{10} is the pollutant of greatest concern. The SJVAPCD's approach to CEQA analyses of construction impacts is to require implementation of effective and comprehensive control measures rather than to require detailed quantification of emissions. The SJVAPCD has determined that compliance with Regulation VIII for all sites and implementation of all other control measures indicated in Tables 4.2.I and 4.2.J below (as appropriate, depending on the size and location of the project site) will constitute sufficient mitigation to reduce PM_{10} impacts to a level considered less than significant.

The control measures listed in Table 4.2.I (Regulation VIII Control Measures) are required for all construction sites by regulation. Table 4.2.J lists additional measures that may be required due to sheer project size or proximity of the project to sensitive receptors. Table 4.2.J also lists additional control measures (Optional Measures) that may be implemented if further emission reductions are deemed necessary by the Lead Agency.

The SJVAPCD recognizes that the measures listed in Tables 4.2.I and 4.2.J focus on PM_{10} emissions from fugitive dust sources. It indicates that Lead Agencies seeking to reduce emissions from construction equipment exhaust should also consider the mitigation measures listed in Table 4.2.E. 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.

Rule 9510-Indirect Source Review The San Joaquin Valley Air Pollution Control District is required by federal law to adopt control measures to reduce smog-forming and particulate emissions generated by new projects within their jurisdiction. All construction emissions must comply with these emission standards.

Table 4.2.E: Construction Equipment Mitigation Measures

Emission Source	Mitigation Measures
Heavy duty equipment (scrapers,	• Use of alternative fueled equipment or catalyst equipped diesel

graders, trenchers, earth movers, etc.)	construction equipment. • Minimize idling time (e.g., 10 minutes maximum) • Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use • Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set) • 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 • Implement activity management (e.g., rescheduling activities to reduce short-term impacts)

Source: SJVAPCD 2002

4.2.2 Impact Significance Criteria

State CEQA Guidelines indicate 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;

Air pollutant emissions associated with the project would occur over the short term from construction, such as fugitive dust from grading, site preparation, and equipment exhaust. Long-term emissions would result from the occupation and use of the proposed land uses. There would be long-term emissions with regional effects associated with project related vehicular trips and long-term emissions with local impacts associated with congested intersections or roadway segments. In addition, long-term stationary or area source emissions would occur due to energy consumption such as natural gas and electricity usage by the proposed land uses. Feasible mitigation measures are required whenever a significant impact is identified to minimize the amount of pollutants emitted.

Project operational emissions refer to the pollutants generated by the stationary area (direct) sources and mobile (indirect) sources. Stationary sources include electricity and natural gas consumption; mobile sources are the motor vehicles traveling to and from the development. These sources contribute to the deterioration of air quality and potentially prevent the region from compliance with the Clean Air Act. Hence, pollutant thresholds are created to determine the significance of a project's impact on air quality. The thresholds of significance from operation are as follows:

Emissions Thresholds for Pollutants with Regional Effects

- 10 tons per year of ROG
- 10 tons per year of NO_X

Projects in the region with operation-related emissions that exceed any of the emission thresholds are considered significant by the SJVAPCD.

Emission Standards for Pollutants with Local Impacts

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

The significance of localized project impacts depends on whether ambient CO levels in the vicinity of the project are above or below State and federal CO standards. If ambient levels are below the standards, a project is considered to have significant impacts if project emissions result in an exceedance of one or more of these standards.

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

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

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

AQ-e: Threshold for Odor

Offensive odors rarely cause any physical harm, but they can be unpleasant. Any project with the potential to frequently expose members of the public to objectionable odors will be deemed to have a significant impact.

AQ-f: Threshold for Hazardous Air Pollutants

Any project with the potential to expose sensitive receptors (including residential areas) or the general public to substantial levels of hazardous air pollutants (HAP) would be deemed to have a potentially significant impact. The significance of localized project impact depends on the following criteria:

- Probability of contracting cancer for the Maximally Exposed Individual (MEI) exceeds ten in one million.
- Ground-level concentrations of non-carcinogenic hazardous air pollutants would result in a Hazard Index greater than 1 for the MEI.

4.2.3 Impacts and Mitigation Measures

Effects Considered to be Less than Significant

Impact AIR-1: Long-term air quality impacts with localized effects are not expected with project implementation.

Vehicular trips associated with the proposed project would contribute to the congestion at intersections and along roadway segments in the project vicinity. As indicated in the traffic analysis, the proposed project would generate a total of 14,300 daily vehicular trips.

The primary mobile source pollutant of local concern is CO. Carbon monoxide concentration is a direct function of vehicle idling time and, thus, traffic flow conditions. Carbon monoxide 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, 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 of CO concentrations is recommended in determining a project's effect on local CO levels.

Existing CO concentrations in the immediate project vicinity are not available. The EPA has recommended that in areas without available CO levels, the higher of the second highest monitored CO levels in the last two years should be used as the existing or future baseline ambient CO levels for the project area. These second highest CO concentrations are 4.9 ppm and 3.0 ppm, respectively, for the one hour and eight hour concentrations. These CO concentrations were used as baseline ambient air level to determine the significance of impact as a result of the proposed project.

The highest CO concentrations typically occur during peak traffic hours, which would best represent a worst case analysis for the calculation of CO impacts. Modeling of the CO hot spot analysis was based on the traffic volumes generated by Fehr & Peers Associates (2005). This traffic study identified existing (year 2005), cumulative (year 2025) conditions, and future conditions (year 2035) without and with project traffic volumes during the morning and afternoon peak hours. The CO hot spot analysis was conducted using the afternoon peak hour period because the project and ambient traffic volumes are slightly higher than the morning peak hour period and would provide for a worst case analysis. CO concentrations were calculated for the one hour averaging period and compared to the State one hour CO standard of 20 ppm. Carbon monoxide eight hour averages were calculated from the one hour CO calculations, using techniques outlined in the Caltrans Carbon Monoxide Protocol and compared to the State eight hour CO standard of 9.0 ppm. Concentrations are expressed in parts per million (ppm) at each receptor location.

The impact on local CO levels was assessed using methodology outlined in the SJVAPCD guideline, GAMAQI. The guideline recommended using the protocol, Transportation Project-Level Carbon Monoxide Protocol (Caltrans, 1997), to conduct the CO analysis. The protocol provides guidance, screening methodology, and modeling data requirements for estimation of CO concentrations along roadway corridors or near intersections. The protocol was adhered to for the air quality analysis conducted for this project.

As shown in Table 4.2.F, the intersection of Trinity Parkway and Eight Mile Road exceeds the eight-hour CO concentration under the existing (2005) plus approved project with and without project. However, as CO concentrations would decrease with the implementation of the project due to roadway improvements on Eight Mile Road, the proposed project would not have a significant impact. Also, as shown in Tables 4.2.G and 4.2.H, none of the nine intersections analyzed would have a one-hour CO concentration exceeding the State standard of 20 ppm under the 2025 and 2035 conditions. The eight-hour CO concentration at these intersections would also be below the State standard of 9.0 ppm. Therefore, the proposed project will not have a significant impact on local air quality for CO, no mitigation measures would be required, and the conditions outlined in **Significance Criterion AQ-a** will not occur.

Table 4.2.F: Existing (Year 2005) Plus Approved Project without and with CO Concentrations

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?1	
					1 Hr	8 Hr
Regatta Drive and Eight Mile Road	14 / 14	0.0 / 0.0	7.5 / 7.5	4.8 / 4.8	No	No
	14 / 14	0.0 / 0.0	7.1 / 7.1	4.5 / 4.5	No	No
	10 / 10	0.0 / 0.0	7.0 / 7.0	4.5 / 4.5	No	No
	7 / 7	0.0 / 0.0	6.9 / 6.9	4.4 / 4.4	No	No
Trinity Parkway and Eight Mile Road	15 / 17	-1.1 / -0.7	15.1 / 14.0	10.1 / 9.4	No	Yes
	15 / 17	-0.5 / -0.3	13.8 / 13.3	9.2 / 8.9	No	Yes
	10 / 14	-1.0 / -0.7	13.3 / 12.3	8.9 / 8.2	No	No
	7 / 7	-0.4 / -0.3	12.2 / 11.8	8.1 / 7.8	No	No
Trinity Parkway and McAuliffe Road	14 / 14	0.3 / 0.2	8.9 / 9.2	5.8 / 6.0	No	No
	14 / 14	0.2 / 0.2	8.5 / 8.7	5.5 / 5.7	No	No
	14 / 14	0.4 / 0.3	8.0 / 8.4	5.2 / 5.5	No	No
	10 / 10	0.3 / 0.2	7.9 / 8.2	5.1 / 5.3	No	No
Aksland Drive/ Otto Drive	17 / 17	1.6 / 1.2	6.8 / 8.4	4.3 / 5.5	No	No
	17 / 17	1.1 / 0.8	6.8 / 7.9	4.3 / 5.1	No	No
	17 / 17	1.4 / 0.9	6.4 / 7.8	4.1 / 5.0	No	No
	14 / 14	1.4 / 1.0	6.3 / 7.7	4.0 / 5.0	No	No
Mariners Drive/ Otto Drive	12 / 12	2.5 / 1.8	8.2 / 10.7	5.3 / 7.1	No	No
	12 / 12	1.9 / 1.3	8.0 / 9.9	5.2 / 6.5	No	No
	8 / 8	1.8 / 1.3	7.5 / 9.3	4.8 / 6.1	No	No
	7 / 7	1.8 / 1.2	7.3 / 9.1	4.7 / 5.9	No	No
Mariners Drive/ Whitewater Lane	12 / 12	1.7 / 1.2	7.2 / 8.9	4.6 / 5.8	No	No
	12 / 12	1.5 / 1.1	7.1 / 8.6	4.5 / 5.6	No	No
	12 / 12	1.6 / 1.1	7.0 / 8.6	4.5 / 5.6	No	No
	8 / 8	1.6 / 1.2	6.8 / 8.4	4.3 / 5.5	No	No
Mariners Drive/ Blackswain Place	12 / 12	1.7 / 1.2	7.2 / 8.9	4.6 / 5.8	No	No
	8 / 8	1.5 / 1.1	7.1 / 8.6	4.5 / 5.6	No	No
	8 / 8	1.5 / 1.1	7.1 / 8.6	4.5 / 5.6	No	No
	8 / 8	1.6 / 1.1	6.7 / 8.3	4.3 / 5.4	No	No
Mariners Drive/ Sturgeon Road	12 / 12	1.7 / 1.2	7.3 / 9.0	4.7 / 5.9	No	No
	12 / 12	1.5 / 1.1	7.2 / 8.7	4.6 / 5.7	No	No
	12 / 12	1.5 / 1.1	7.1 / 8.6	4.5 / 5.6	No	No
	8 / 8	1.5 / 1.1	6.8 / 8.3	4.3 / 5.4	No	No
Mariners Drive/ Hammer Lane	20 / 20	1.7 / 1.2	9.7 / 11.4	6.4 / 7.6	No	No
	14 / 14	1.7 / 1.2	9.1 / 10.8	5.9 / 7.1	No	No
	14 / 14	1.2 / 0.8	8.9 / 10.1	5.8 / 6.6	No	No
	8 / 8	1.3 / 0.9	8.7 / 10.0	5.7 / 6.6	No	No

Source: LSA Associates, Inc., April 2006.

Table 4.2.G: 2025 Without and With Project CO Concentrations

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?[1]	
					1 Hr	8 Hr
Regatta Drive and Eight Mile Road	21 / 21	0.0 / 0.0	5.2 / 5.2	3.2 / 3.2	No	No
	21 / 21	0.0 / 0.0	5.2 / 5.2	3.2 / 3.2	No	No
	21 / 21	0.0 / 0.0	5.2 / 5.2	3.2 / 3.2	No	No
	15 / 15	0.0 / 0.0	5.1 / 5.1	3.1 / 3.1	No	No
Trinity Parkway and Eight Mile Road	17 / 17	0.0 / 0.0	6.0 / 6.0	3.8 / 3.8	No	No
	17 / 17	0.0 / 0.0	6.0 / 6.0	3.8 / 3.8	No	No
	17 / 17	0.0 / 0.0	6.0 / 6.0	3.8 / 3.8	No	No
	17 / 17	0.1 / 0.1	5.8 / 5.9	3.6 / 3.7	No	No
Trinity Parkway/ McAuliffe Road	14 / 14	0.0 / 0.0	5.7 / 5.7	3.6 / 3.6	No	No
	14 / 12	0.1 / 0.1	5.5 / 5.6	3.4 / 3.5	No	No
	12 / 10	0.1 / 0.1	5.5 / 5.6	3.4 / 3.5	No	No
	10 / 10	0.1 / 0.1	5.5 / 5.6	3.4 / 3.5	No	No
Aksland Drive/ Otto Drive	17 / 17	0.2 / 0.1	5.4 / 5.6	3.4 / 3.5	No	No
	17 / 17	0.3 / 0.2	5.3 / 5.6	3.3 / 3.5	No	No
	17 / 17	0.1 / 0.1	5.3 / 5.4	3.3 / 3.4	No	No
	14 / 14	0.1 / 0.1	5.3 / 5.4	3.3 / 3.4	No	No
Mariners Drive/ Otto Drive	17 / 17	0.2 / 0.1	5.3 / 5.5	3.3 / 3.4	No	No
	16 / 16	0.1 / 0.1	5.3 / 5.4	3.3 / 3.4	No	No
	14 / 14	0.1 / 0.1	5.3 / 5.4	3.3 / 3.4	No	No
	14 / 14	0.1 / 0.1	5.3 / 5.4	3.3 / 3.4	No	No
Mariners Drive/ Whitewater Lane	12 / 12	0.0 / 0.0	5.1 / 5.1	3.1 / 3.1	No	No
	12 / 12	0.0 / 0.0	5.1 / 5.1	3.1 / 3.1	No	No
	8 / 8	0.0 / 0.0	5.1 / 5.1	3.1 / 3.1	No	No
	8 / 8	0.0 / 0.0	5.1 / 5.1	3.1 / 3.1	No	No
Mariners Drive/ Blackswain Place	12 / 12	0.0 / 0.0	5.1 / 5.1	3.1 / 3.1	No	No
	12 / 12	0.0 / 0.0	5.1 / 5.1	3.1 / 3.1	No	No
	8 / 8	0.0 / 0.0	5.1 / 5.1	3.1 / 3.1	No	No
	8 / 8	0.0 / 0.0	5.1 / 5.1	3.1 / 3.1	No	No
Mariners Drive/ Sturgeon Road	12 / 12	0.0 / 0.0	5.1 / 5.1	3.1 / 3.1	No	No
	12 / 12	0.0 / 0.0	5.1 / 5.1	3.1 / 3.1	No	No
	8 / 8	0.0 / 0.0	5.1 / 5.1	3.1 / 3.1	No	No
	8 / 8	0.0 / 0.0	5.1 / 5.1	3.1 / 3.1	No	No
Mariners Drive/ Hammer Lane	21 / 21	0.1 / 0.0	5.4 / 5.5	3.4 / 3.4	No	No
	20 / 21	0.1 / 0.1	5.3 / 5.4	3.3 / 3.4	No	No
	14 / 20	0.1 / 0.1	5.3 / 5.4	3.3 / 3.4	No	No
	14 / 14	0.0 / 0.0	5.3 / 5.3	3.3 / 3.3	No	No

Source: LSA Associates, Inc., April 2006.

Table 4.2.H: 2035 Without and With Project CO Concentrations

[1] The State one-hour standard is 20 ppm, and the eight-hour standard is 9 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?[1]	
					1 Hr	8 Hr
Regatta Drive and Eight Mile Road	21 / 21	0.0 / 0.0	5.4 / 5.4	3.4 / 3.4	No	No
	21 / 21	0.0 / 0.0	5.4 / 5.4	3.4 / 3.4	No	No
	21 / 21	0.0 / 0.0	5.4 / 5.4	3.4 / 3.4	No	No
	16 / 16	0.0 / 0.0	5.3 / 5.3	3.3 / 3.3	No	No
Trinity Parkway and Eight Mile Road	24 / 24	0.0 / 0.0	5.8 / 5.8	3.6 / 3.6	No	No
	24 / 24	0.0 / 0.0	5.7 / 5.7	3.6 / 3.6	No	No
	17 / 17	0.1 / 0.1	5.6 / 5.7	3.5 / 3.6	No	No
	17 / 17	0.0 / 0.0	5.6 / 5.6	3.5 / 3.5	No	No
Trinity Parkway/ McAuliffe Road	14 / 14	0.0 / 0.0	5.4 / 5.4	3.4 / 3.4	No	No
	14 / 12	0.1 / 0.1	5.3 / 5.4	3.3 / 3.4	No	No
	12 / 10	0.1 / 0.1	5.3 / 5.4	3.3 / 3.4	No	No
	10 / 10	0.1 / 0.1	5.3 / 5.4	3.3 / 3.4	No	No
Aksland Drive/ Otto Drive	21 / 21	0.1 / 0.1	5.5 / 5.6	3.4 / 3.5	No	No
	21 / 21	0.2 / 0.1	5.4 / 5.6	3.4 / 3.5	No	No
	19 / 19	0.1 / 0.0	5.4 / 5.5	3.4 / 3.4	No	No
	17 / 15	0.1 / 0.0	5.4 / 5.5	3.4 / 3.4	No	No
Mariners Drive/ Otto Drive	14 / 16	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
	14 / 14	0.1 / 0.0	5.4 / 5.5	3.4 / 3.4	No	No
	14 / 14	0.0 / 0.0	5.4 / 5.4	3.4 / 3.4	No	No
Mariners Drive/ Whitewater Lane	12 / 12	0.0 / 0.0	5.0 / 5.0	3.1 / 3.1	No	No
	12 / 12	0.0 / 0.0	5.0 / 5.0	3.1 / 3.1	No	No
	8 / 8	0.0 / 0.0	5.0 / 5.0	3.1 / 3.1	No	No
	8 / 8	0.0 / 0.0	5.0 / 5.0	3.1 / 3.1	No	No
Mariners Drive/ Blackswain Place	12 / 12	0.0 / 0.0	5.0 / 5.0	3.1 / 3.1	No	No
	12 / 12	0.0 / 0.0	5.0 / 5.0	3.1 / 3.1	No	No
	8 / 8	0.0 / 0.0	5.0 / 5.0	3.1 / 3.1	No	No
	8 / 8	0.0 / 0.0	5.0 / 5.0	3.1 / 3.1	No	No
Mariners Drive/ Sturgeon Road	12 / 12	0.1 / 0.0	5.0 / 5.1	3.1 / 3.1	No	No
	12 / 12	0.1 / 0.0	5.0 / 5.1	3.1 / 3.1	No	No
	8 / 8	0.0 / 0.0	5.0 / 5.0	3.1 / 3.1	No	No
	8 / 8	0.0 / 0.0	5.0 / 5.0	3.1 / 3.1	No	No
Mariners Drive/ Hammer Lane	24 / 24	0.0 / 0.0	5.6 / 5.6	3.5 / 3.5	No	No
	24 / 24	0.0 / 0.0	5.5 / 5.5	3.4 / 3.4	No	No
	22 / 22	0.0 / 0.0	5.5 / 5.5	3.4 / 3.4	No	No
	16 / 16	0.0 / 0.0	5.4 / 5.4	3.4 / 3.4	No	No

Source: LSA Associates, Inc., April 2006.

[1] The State one-hour standard is 20 ppm, and the eight-hour standard is 9 ppm.

Impact AIR-2: The project is not expected to 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 individual construction is completed. No other sources of objectionable odors have been identified for the proposed project. No mitigation measures are recommended, and the conditions outlined in **Significance Criterion AQ-e** will not occur.

Impact AIR-3: The project is not expected to create Hazardous Air Pollutants Impacts.

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. No mitigation measures are recommended, and the conditions outlined in **Significance Criterion AQ-f** will not occur.

Impact AIR-4: The proposed project will contribute to short-term/incremental cumulative air quality impacts. The project is 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 contribution will be incremental and short-term.

Air Quality Attainment Plan Consistency Analysis

An Air Quality Attainment Plan (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 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 AQAPs air quality projections. If the analyses comply with the requirements, it is considered to be consistent with the AQAP.

Currently, the region is in non-attainment for ozone and PM_{10}. 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. However, the proposed project land use has been designated in the adopted General Plan and, therefore, is consistent with the AQAP. Conditions outlined in **Significance Criterion AQ-b** will not occur.

Impact AIR-5: The project will generate short-term fugitive dust impacts.

Construction activities such as grading, excavation and travel on unpaved surfaces can generate substantial amounts of dust, and can lead to elevated concentrations of PM_{10}. Fugitive dust control measures are required of all construction projects within SJVAPCD jurisdiction. However, if the amount of fugitive dust generated is substantial, enhanced and additional control measures may be required by SJVAPCD to reduce PM_{10} emissions.

The SJVAPCD Regulation VIII, Control Measures for Construction Emissions of PM_{10}, as shown in Tables 4.2.I and 4.2.J, are required to be implemented at all construction sites. Compliance with the above Regulation VIII requirements and implementation of applicable control measures, indicated in Tables 4.2.I and 4.2.J, would lessen the fugitive dust impact during construction to a level considered less than significant. Conditions outlined in **Significance Criterion AQ-a** will not occur.

Impact AIR-6: The project is not expected to create short-term impact from architectural coatings and asphalt paving.

The proposed project will not create impacts regarding architectural coatings or asphalt paving with implementation of the following regulations:

Architectural coatings and asphalt paving conducted on the project site shall adhere to rules and regulations stated in the SJVAPCD Rulebook. Compliance with Rule 4601, Architectural Coatings, and Rule 4641, Asphalt Paving, would lessen impacts from architectural coatings and asphalt paving to a level considered less than significant. Conditions outlined in **Significance Criterion AQ-a** will not occur.

Impact AIR-7: Increase in Atmospheric Greenhouse Gas Emissions

The proposed project would contribute to greenhouse gas concentrations due to increase vehicle trips and stationary pollution sources such as the consumption of natural gas and electricity. Concerns associated with GHG emissions include the rise in sea levels and the associated rise in delta water levels. The Atlas Tract levee systems will provide adequate freeboard up to the 300 year storm event

and protection against long term delta rise. Mitigation measures proposed in this section and compliance with the local air quality district will help reduce greenhouse gas emissions. The proposed project is considered to have a less than significant impact regarding global warming due to the high degree of uncertainty in modeling near-term climate scenarios**.**

Potentially Significant Impacts

Impact AIR-8: The project will 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 PM_{10} impacts is to require implementation of effective and comprehensive control measures rather than detailed quantification of emissions. Compliance with Regulation VIII and implementation of applicable control measures, indicated in Tables 4.2.I and 4.2.J, will reduce PM_{10} impacts during construction to a level considered less than significant. No additional measures are recommended, and the conditions outlined in **Significance Criterion AQ-a** will not occur.

Table 4.2.I: 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, 2002.

Table 4.2.J: Enhanced and Additional Control Measures for Construction Emissions of PM_{10}

Enhanced Control Measures - The following measures shall be implemented at construction sites when required to mitigate significant PM_{10} impacts (note, these measures are to be implemented in addition to Regulation VIII requirements):
• Limit traffic speeds on unpaved roads to 15 mph; and • Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with slope greater than one percent.
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:
• Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site; • Install wind breaks at windward side(s) of construction areas; • Suspend excavation and grading activity when winds exceed 20 mph; and* • Limit area subject to excavation, grading, and other construction activity at any one time.

Source: SJVAPCD 2002
Notes: *Regardless of windspeed, an owner/operator must comply with Regulation VIII's 20 percent opacity limitation.

Impact AIR-9: The project would create long-term air quality impacts with regional effects

The land uses associated with the proposed project consists of approximately 933 single family residential units, 129 cluster residential units, 96 condominium units, and a school. The emissions from the proposed project are calculated using URBEMIS. Stationary source emissions from these land uses would be generated from consumption of natural gas, landscaping, and consumer products. The traffic study prepared for this project predicted vehicular trips associated with the proposed project that would contribute to the congestion at intersections and along roadway segments in the project vicinity. As indicated in the traffic analysis, the proposed project would generate a total of 14,300 additional daily vehicular trips. Using the ARB model URBEMIS2002 (version 8.7.0), emissions associated with project-related vehicular trips were calculated and are included in Table 4.2.K. The total projected emissions from long-term project operations of the proposed project are shown in Table 4.2.K.

Table 4.2.K: Project Operational Emissions

Source	Pollutants (tons/year)	
	ROG	**NO_x**
Proposed Emissions		
Stationary sources:	16.91	4.14
Vehicular traffic:	33.91	46.59
Proposed Subtotal	**50.83**	**50.73**
SJVUAPCD Threshold	**10**	**10**
Exceeds Threshold?	**Yes**	**Yes**
Significant Impact?	**Yes**	**Yes**

Source: LSA Associates, Inc., April 2006

As shown above, the project's additional emissions would exceed the SJVAPCD annual emissions thresholds. Implementation of mitigation measures is required to minimize these impacts to the extent feasible. The project would result in total (vehicular and stationary) daily emissions exceeding the daily emissions thresholds established by the SJVAPCD. Mitigation measures are not available that would completely 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.

Mitigation Measure AIR-1 - Project Operations Related Impacts

The project applicant shall incorporate the following in building plans:

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

Feasible mitigation measures do not exist that would reduce these impacts to a less than significant level. The potential project operations-related impacts are significant and unavoidable and will contribute to conditions outlined in Significance Criterion AQ-a.

4.2.4 Level Of Significance After Mitigation

The above mitigation measures will assist in reducing the project impacts on air quality although impacts cannot be completely mitigated. The project will have an air quality impact that is significant and unavoidable.

4.3 WATER RESOURCES

4.3.1 Existing Setting

Flood Control

Floodplains in the City of Stockton (City) are shown on the FEMA floodplain maps prepared for the federal flood insurance program. The current maps for the City were issued in April 2002. Prior to 1998, the flood potential in the City was significant and large areas of the City were designated to be in the 100-year floodplain. The Locally Constructed Flood Control Project of the San Joaquin Area Flood Control Agency (SJAFCA) sponsored the construction of flood protection facilities on Bear Creek, Pixley Slough, Upper Mosher Creek, the Mosher Diversion, Little Bear Creek, Mosher Slough, the Calaveras River, Stockton Diverting Canal and Mormon Slough. These projects provided FEMA 100-year protection to large parts of the City. As a result of the SJAFCA work, FEMA reissued the flood maps for the City showing that the land had been removed from the floodplain. Remaining floodplain land consists of Delta tracts, land along French Camp and Walker Sloughs, and some minor flooding along Duck Creek. The most significant area of out-of-bank flooding occurs along North Littlejohns Creek in the south Stockton area.

While much of the City is now protected from riverine flooding during a 100-year event, there are potential problems with a lower frequency of occurrence that should be understood. These include structural failures of levees and upstream water control dams. A risk of flooding remains during large flood events in the San Joaquin River and from Delta flooding accompanied by high tides. Levee failures are a constant threat in any system that is dependent on constructed levees for flood protection. Extreme events such as upstream dam failures could also cause flooding in the City (Stockton, 2004).

A recent project sponsored by RD 2126 has resulted in the repair and rehabilitation of the Preserve levees which has increased the level of flood protection for the 300-year flood event, increased resistance to erosion, reduced maintenance requirements, and improved the interior drainage system for the tract. The project reconstructed a new levee prism inland from the top of the existing levees and reconstructed the interior drainage ditches to improve efficiency. In addition, a semi-permanent pumping station and associated outfall structure were constructed. A Letter of Map Revision (LOMR) was approved for the Atlas Tract on March 30, 2007 resulting in a revision to the floodplain status.

The newly constructed levees surrounding The Preserve provide the equivalent, if not better, flood protection to the dry-land levee previously relied upon by Twin Creeks Estates. The existing Twin Creeks Estates subdivision levees are at the same elevation as the new levees protecting The Preserve. As a result, there are no significant impacts anticipated from the removal of the existing dry-land levee.

As noted in Section 4.2, Air Quality, a potential rise in delta water levels may result from increases in greenhouse gas emissions. This rise in water levels may pose a flood risk to the proposed project.

Water Quality

Water quality is presently influenced by upstream flows, 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 to the southwest of the project site.

The latest water quality data available 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 μg/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 Associates, Inc., 2001

Storm Water/Drainage

Currently, drainage ditches run throughout the property and connect to Mosher Slough, which extend along the western and southern boundary. Bear Creek runs along the northern site boundary. Mosher Slough and Bear Creek converge and become Pixley Slough at the Northwest portion of the project boundary. The Preserve is expected to be removed from the 100-year flood zone (zone AE) by the separate levee improvement project that was sponsored by the Reclamation District. This project will ultimately remove the project site from the flood zone through a FEMA Letter of Map Revision (LOMR) and is expected to be completed prior to development of The Preserve.

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.

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

Currently, flood protection is provided by a recently enhanced levee system extending along Mosher Slough and Bear Creek. Flood protection is provided on the project site for the 300-year flood event.

The existing levee along the west side of Trinity Parkway will be removed as part of the proposed project since this levee will cease to serve a flood control function with the new levees in place. The removal of the dry-land levee should not place the Twin Creeks Estates subdivision at any more risk of flooding than existing prior to the Atlas Tract Levee Improvements being constructed. The newly constructed levees exceed the design standard of the current dry-land levee. The potential impact of removing the dry-land levee on Atlas Tract would be the loss of overland flood protection coming from the east. This "back door" exposure is limited to the area of the Twin Creeks Estates subdivision. Interstate 5, just west of the Twin Creeks Estates subdivision prevents overland flooding from areas farther to the east. This limits the exposure to the existing levees protecting Twin Creeks Estates subdivision. These levees have been certified by FEMA as providing flood protection from the 100 year event. In reality, the elevations of these levees are similar to the reconstructed levees surrounding Atlas Tracts. As a result, The Preserve is afforded similar storm event protection by the Twin Creek Estates levees as the levees protecting The Preserve.

For both The Preserve and Twin Creeks Estates, the levees in place today provide in flood protection at levels beyond the 100 year storm. Since these levees are located in the secondary zone of the Delta, they are tidally influenced. When reviewing levee elevations further west in the Delta it is apparent that storms in excess of the 100 year event would result in overland flooding relieving the water levels this far-east before these levees would have an opportunity to over top.

Although ditches are present in The Preserve and had a pump station at one time, there is currently no operating drainage system on the site (Does this contradict the last sentence of the Flood control section of Existing Conditions above?). A separate interior drainage conveyance and flood detention system has been proposed and includes lift facilities, outfall into Mosher Slough and storage in an on-site basin system.

Project site improvements will include storm water treatment, and a pump station to lift flood waters over/through the levee. These objectives can be achieved through an integrated "recirculating" wetlands system and storm water pump station, described below.

Summary of System Elements
The proposed stormwater outflow waster quality treatment and pump station system will consist of the following facilities, independent of the internal underground storm drain pipe and collection system within the development areas:

Storm Drain Outlet Chamber - There will be several underground storm drain pipelines existing the residential area that will be much lower in elevation than the wetlands surface which could have an elevation difference of up to twenty feet, so a vertical outlet chamber will be utilized. This would be a rectangular vertical concrete chamber that will allow higher flows to pond until discharging over the weir elevation at the top of the chamber into the wetlands. The top of the outlet chamber will be fitted with a trash collection grate system to intercept all the larger floatable debris prior to discharging into the wetlands "forebay" area. The low-flows or nuisance water will be collected at the bottom of the chamber in a sump and then pumped up to the forebay of the wetlands so all the dry-weather flows will be treated and used to irrigate the wetlands. High flows can discharge over the weir outlet or out the top of the chamber which will be grated. The outlet chamber is also designed as a junction facility for all the storm drain pipes to combine at a central outlet location minimizing the maintenance and treatment facilities for the nuisance flows. The top of the outlet chamber will have three walls that will be higher than the fourth wall which will be low and acts as the weir outlet at the wetland elevation. The final sizing and elevations for the outlet chamber operation will depend on the required hydraulic grade line requirements for interior residential storm drain and the elevations of the wetland.

Dry-Weather Flow Pump - the dry weather or nuisance flow pump will consist of a submersible pump located on rails for maintenance access within the sump of the outlet chamber floor. The sump has the ability to collect sediments and trash so the top of the chamber will have an access hatch for maintenance to allow trucks to remove the material. A removable grate and screen assembly will be installed around the pump to prevent clogging. The small discharge line from the sump will outlet at a common outlet point into the wetland forebay along with the recirculating pipeline.

Constructed Wetlands - The constructed wetlands will be excavated below the existing ground elevation in order to generate flood storage as well as water quality treatment. The constructed wetlands will be graded and contoured with multiple flowpaths to create the natural morphology of a wetland system. The grading will provide terraces at different elevations and multiple flow paths in order to maximize the flow distribution for treatment and storage volume quantity. Maintenance roads will be provided on each side of the wetlands that will allow service for PG&E, in addition to pedestrian pathways and bridges within the wetlands area. A forebay will be constructed at the upstream end of the wetland which will allow for sediment removal and flow distribution into the multiple flow paths since several weir outlets will be provided at the naturalized forebay. The vegetation will be designed to maximize the water quality treatment capabilities but will be compatible with the naturally occurring species in the area.

Recirculating Pump and Return Pipeline - A separate portion of the downstream pump will be a private system that will include a recirculating pump for the wetland return flows. The nuisance and dry weather flows will be completely retained on the project site and not discharged to the slough, but recirculated through the wetlands for treatment and irrigation benefits. The other benefit of the recirculating system is that the "flowing" water minimizes the vector problem with mosquito breeding in a residential area.

Primary Stormwater Pump Station - The proposed stormwater pump station will have all the standard required elements for a City of Stockton pump station, including: a secondary power supply and generator, a fully enclosed pump station structure, a below ground pump station forebay compatible with Hydraulic Institute stands, vertically mounted turbine pumps, and electronic control and telemetry. The analysis evaluated different sizes of pump station depending on the amount of temporary stormwater detention storage provided in the wetlands system since this acts hydraulically as an extension of the pump forebay. The analysis included results form the largest to the smallest pump since the largest would be a 10-year peak flow pump station and the smallest was the 100-year volume completely stored in the wetlands and evacuated within a 24-hour period.

Force Main and Outlet Structure - Each pump from the stormwater pump station is provided with a single force main pipeline discharging over the levee and into the slough, The force mains were initially sized with a maximum allowable velocity of seven fps. In addition, the size of the pipes and location through the levee is restricted by the conditions of the Reclamation District.

Make-Up Water Intake - The recirculating pump station will have an additional pump and intake pipeline to the slough in order to obtain additional "makeup water" to provide the required irrigation water quantity if the dry-weather flows are not sufficient.

Drainage Within The Preserve

The development will be designed to convey all runoff toward the wetlands. Portion of the development that are distant from the wetlands will drain via standard underground storm drains sized to convey the 10-year peak discharge. Larger flows will be conveyed to the wetland via surface runoff in streets. Areas within several hundred feet of the wetland may drain via surface flow to the wetland. A conceptual layout of the proposed development is provided in Figure 4.3.1. The wetland will be located in the center of the project. A diagram of wetland function is provided in Figure 4.3.2.

The storm drains within the development will be lower in elevation than the wetland surface; therefore, a specially designed weir box and low flow pump system will convey flows into the wetland. At the end of each storm drain, runoff will flow into the bottom of a weir box. This box will extend upwards from the pipe invert to an elevation slightly higher than the wetland water surface, a distance of approximately 10 to 20 feet. During dry weather and smaller storms, flows will be pumped from the bottom of the box up into the wetland. During larger storms, the flow in the storm drain will cause water to rise in the box until flowing over the weir into the wetland.

The wetland extends through the middle of the project site and is therefore ideally suited for stormwater conveyance. All of the storm drains within the development will lead toward the wetland. Water from the drains will be discharged into the wetland, will flow to the downstream end of the wetland, and then will be pumped into Mosher Slough during large storms. Water will be circulated within the wetland during smaller storms and dry weather.

Effects Considered to be Less than Significant

Flood Control/Storm Water

Impact FC-1: The project will not be impacted by a 100-year flood event.

A project (Atlas Tract Levee Improvement Project) was sponsored by Reclamation District 2126 and the City of Stockton and has revised the current flood zone, removing the project site from the 100-year flood zone. With these flood control improvements, protection against the 300-year flood event is assured for the project site. A Letter of Map Revision (LOMR) was approved for the Atlas Tract on March 30, 2007 resulting in a revision to the floodplain status. The newly constructed levee system will also provide adequate protection and freeboard against long term delta rise due to climate change. Therefore, conditions outlined in **Significance Criteria FC-a** will not occur.

Impact FC-2: The proposed project will increase the amount of impermeable surfaces which could subject the site to local flooding hazards.

The project will be designed to provide, at a minimum, 300-year flood protection for all habitable structures. This satisfies local drainage criteria adopted by both the City of Stockton and San Joaquin County. During large storms, runoff will be collected by a system of underground storm drains, routed to the wetland, temporarily detained in the wetland, conveyed by the wetland to the pump station, and pumped to Mosher Slough. The temporary detention of stormwater will cause the water level in the wetland to rise. The design peak elevation of the wetland water surface will be a minimum of 1 foot below the lowest habitable floor of any structure in the development. Stormwater runoff will not leave the project site except via the pump station, and no offsite runoff will enter the site.

The stormwater pump station that will discharge stormwater to Mosher Slough is sized based on the Unit Hydrograph output. The maximum capacity of the pump station will be the 10-year peak runoff and no storage and the minimum size of pump is the 100-year 24-hour runoff volume pumped out or evacuated over a 24-hour period. Depending on the volume of the wetland, a smaller capacity pump station may be required (see Table 4.3.B).

Table 4.3.B: Pump Capacity Comparisons

Depth (ft)	10-yr Unattenuated Flow (cfs)	100-yr Attenuated Flow (cfs)
0	**438.0**	644.0
1.0	438.0	**417.0**

Depth (ft)	10-yr Unattenuated Flow (cfs)	100-yr Attenuated Flow (cfs)
2.0	438.0	**140.0**
3.0	438.0	**52.0**
4.0	438.0	**33.0***

Source: PACE 2006
*Pumping rate based on evacuating the 100-year 24-hour runoff volume within a 24-hour period

The development will be designed to convey all runoff toward the proposed on-site wetlands. Portions of the development that are distant from the wetlands will drain via standard underground storm drains sized to convey the 10-year peak discharge. Larger flows will be conveyed to the wetland via surface runoff in streets. Areas within several hundred feet of the wetland may drain via surface flow to the wetland. A conceptual layout of the proposed development is provided in Figure 4.3.1. The wetland will be located in the center of the project. A diagram of wetland function is provided in Figure 4.3.2.

In summary, the planned stormwater system for the proposed project will prevent the potential conditions outlined in **Significance Criterion FC-b**.

Potentially Significant Impacts

Water Quality

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

The project has the potential to violate water quality standards and/or waste discharge requirements. The proposed project will change the existing agricultural land use to predominantly residential uses. While this land use change will eliminate a source of agricultural pesticides and fertilizers that may have impacted water quality adjacent to the site, the landscaping associated with the proposed project would also require the use of pesticides, herbicides, and fertilizers. Negative impacts to water quality from this pollution source could persist, although to a lesser extent.

The nature of the proposed development may also impact water quality in Bear Creek or Mosher Slough. The project will add significant amounts of impervious areas, potentially increasing the amount of storm water runoff. Vehicular traffic will also increase as a result of the project and will create increased potential for hydrocarbons, sediments, heavy metals, and other pollutants to reach local waterways via storm water runoff.

The proposed wetland feature will serve as the primary structural water quality BMP for The Preserve following development. The wetlands will be sized to provide enough storage for the entire treatment volume required by local and state standards. The treatment volume will be captured in the wetland, detained for a period of 24 to 72 hours, then discharged via pumping to Mosher Slough.

Preliminary estimates indicate that the required water quality treatment volume will be less than 14 acre-feet of water. With a total wetland area of approximately 10.5 acres, detention of this volume

will require a storage depth of approximately 2 feet within the wetland. Following each storm, most of the accumulated runoff will be pumped to Mosher Slough using the main pump station. A portion of the runoff will be retained within the wetland, circulated by the circulation pump equipment, and slowly lost to evapotranspiration and infiltration.

LSA

FIGURE 4.3.1

The Preserve

Conceptual Storm Water Drainage System

SOURCE: The Preserve MDP, 2007

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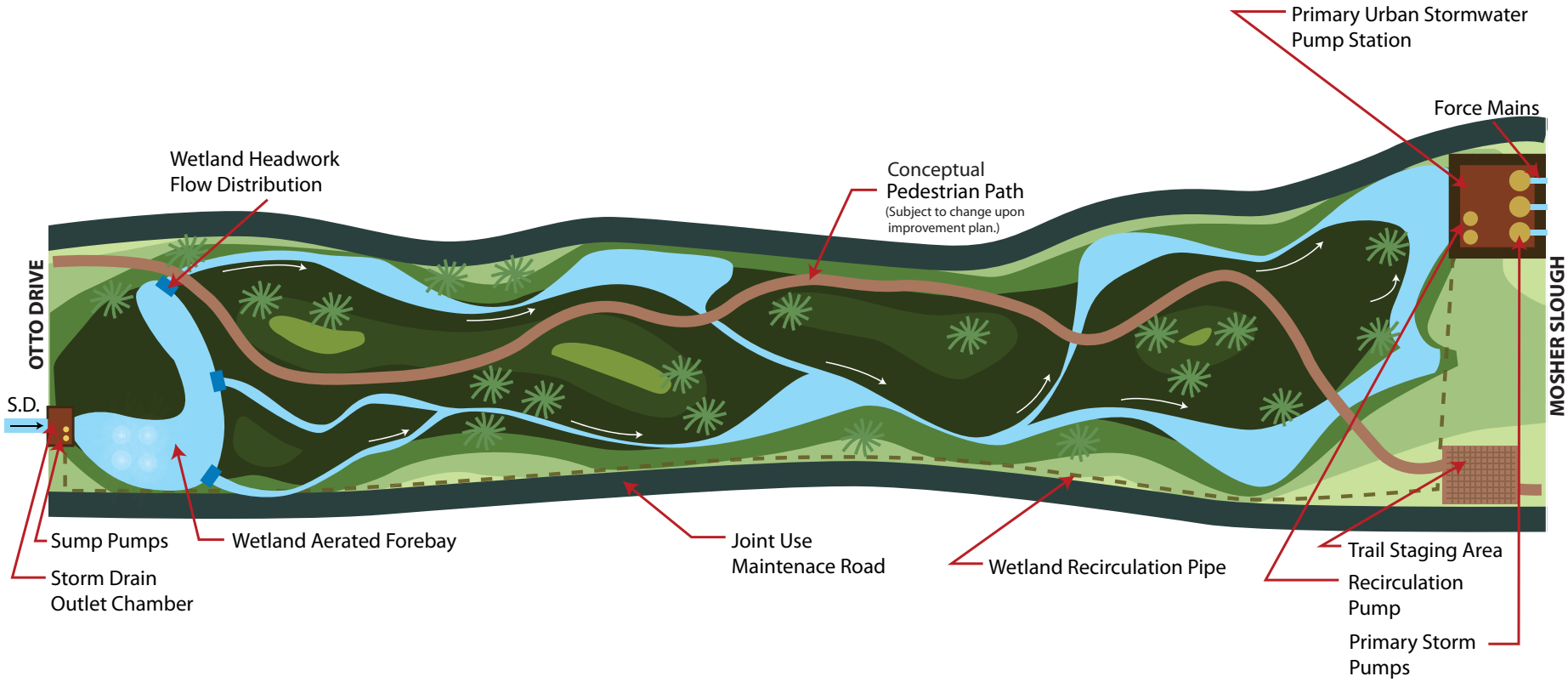

LSA

FIGURE 4.3.2

The Preserve

Conceptual Stormwater Management Facility

SOURCE: The Preserve MDP, 2007

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Constructed wetlands are an effective stormwater BMP's for removing a wide variety of pollutants from urban runoff. Particulates are removed by settling and filtration, dissolved constituents are removed by biological, physical, and chemical processes, and a portion of the water is infiltrated into the ground or lost to evapotranspiration. The Preserve wetland will be constructed to meet the most current design guidelines available, including any applicable design criteria from the California Municipal BMP Design Handbook.

In addition to the constructed wetland, stormwater will be treated through a variety of structural and non-structural BMP's. Site Design BMP's will include modern sprinklers designed to reduce irrigation water runoff and overspray, the use of drought tolerant plants where appropriate, and minimization of directly connected impervious areas. Source Control BMP's will include proper storage of chemicals and garbage, street sweeping, and careful application of landscape chemicals. Structural BMP's will include, in addition to the wetland, trash screens and grit chambers at each storm drain outfall to prevent trash from being pumped into the wetland. The project will comply with all applicable requirements of the current NPDES Stormwater Permit issued to the City of Stockton.

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. 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-1: 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.

Implementation of the natural wetland 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

4.4.1 Existing Setting

Plant Communities and Associated Wildlife Habitats

Natural Communities
The Preserve is a highly altered environment and natural communities have been largely displaced. The property has a long history of agricultural crop production; there are currently no crops being grown on the site. The vegetation occurring on the site can be classified into two elements: ruderal uplands and agricultural lands. These plant communities are generally defined using Holland and Keil (1995) and the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) (2000).

Ruderal Uplands (SJMSCP Vegetation Type C3, U, or U2 [Row and Field Crops, Ditched; Urban; Scraped/Paved])
Ruderal upland areas consist of artificial structures within the study area including the levees surrounding the property. Vegetation is often entirely lacking in these areas or consists of a very low diversity of species adapted to disturbed conditions (e.g., Himalaya blackberries [*Rubus discolor*] along levees).

Wildlife species associated with ruderal habitats include western harvest mouse, California meadow vole, black-tailed jackrabbit (*Lepus californicus*), desert cottontail (*Sylvilagus audubonii*), sparrows (*Zonotrichia* spp.), song sparrow (*Melospiza melodia*), red-winged blackbird (*Agelaius phoeniceus*), goldfinches (*Carduelis* spp.), and western meadowlark (*Sturnella neglecta*).

Ruderal habitats that occur along levees support California ground squirrel, Botta's pocket gopher, western fence lizard (*Sceloporus occidentalis*) and other reptile species. The presence of California ground squirrel burrows provides potential nesting habitat for burrowing owls (*Athene cunicularia*).

Agricultural Lands (Agrestal; SJMSCP Vegetation Type C3 [Row and Field Crops, Ditched])
Most of the property consists of agricultural lands. These areas were previously in crop production but are now dominated by primarily nonnative weedy grasses and forbs. Dominant species include oats (*Avena* sp.), brome grasses (*Bromus* sp.), black mustard (*Brassica nigra*), milk thistle (*Silybum marianum*), wild radish (*Raphanus sativus*), and morning glory (*Convolvulus arvensis*).

Drainage ditches also occur in the agricultural areas. These ditches collect and convey runoff water and are dominated by ruderal wetland species typically associated with disturbed areas including cocklebur (*Xanthium strumarium*), Bermuda grass (*Cynadon dactylon*), curly dock (*Rumex crispus*), prickly lettuce (*Lactuca serriola*), rabbitsfoot grass (*Polypogon monspeliensis*), and nutsedge (*Cyperus* sp.). Native species include cattail (*Typha latifolia*), red willow (*Salix laevigata*), and sandbar willow (*S. exigua*).

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 opportunistic species, however, are well adapted to these communities including: California ground squirrel (*Spermophilus beechyi*), Botta's pocket gopher (*Thomomys bottae*), western harvest mouse (*Reithrodontomys megalotis*), and California meadow vole (*Microtus californicus*). Several bird species are likely to occur and forage over the crop lands: American kestrel (*Falco sparverius*), northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus leucurus*), red-tailed hawk (*Buteo jamaicensis*), and Swainson's hawk (*Buteo swainsonii*). Migratory species and waterfowl also tend to use agricultural communities, particularly in the winter months.

Wildlife species associated with the ditches include mallard (*Anas platyrhynchos*), barn swallows (*Hirundo rustica*), marsh wrens (*Cistothorus palustris*), song sparrows (*Melospiz melodia*), black phoebe (*Sayornis nigricans*), great egret (*Ardea alba*), great blue heron, bullfrog (*Rana catesbeiana*), and red swamp crayfish (*Procambarus clarkii*). Western aquatic garter snakes (*Thamnophis couchii*), Pacific tree frog (*Hyla regilla*), and western pond turtle (*Clemmys marmorata*) are also expected to occur.

A natural communities map of the project site presented in Figure 4.4.1.

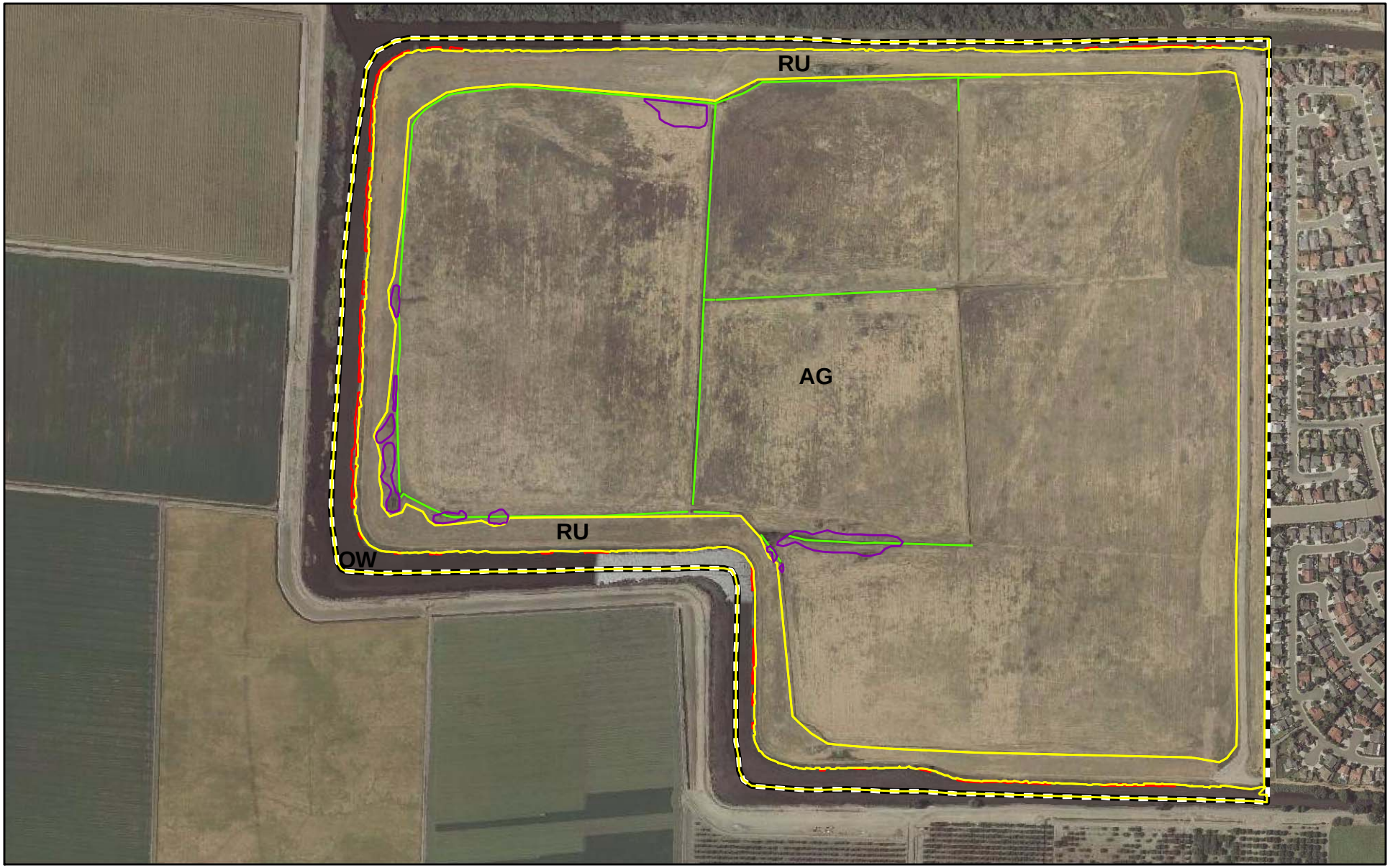
Special Status Species

Regulatory Background

Special status species are those species that are listed as threatened or endangered by the California Department of Fish and Game (CDFG), U.S. Fish and Wildlife Service (USFWS), or National Marine Fisheries Service (NMFS), or are on formal lists as candidates for listing as threatened or endangered. In addition, informal lists maintained by the State include California Species of Special Concern which are plant and wildlife species that are of concern and are included in the California Natural Diversity Data Base (CNDDB). The California Native Plant Society (CNPS) also maintains informal lists containing special status plant species that are recognized by the resource and regulatory agencies.

Federal Endangered Species Act (FESA): The FESA protects listed species from "take," which is broadly 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 a "take" even if it is unintentional or accidental. The USFWS and NMFS have jurisdiction over formally listed threatened and endangered species under the FESA.

When a species is listed, the USFWS and NMFS, in most cases, must officially designate specific areas as critical habitat for the species. Consultation with USFWS and/or NMFS is required for projects that include a federal action or federal funding and will modify designated critical habitat. NMFS also regulates federal activities that could affect Essential Fish Habitat (EFH) for pacific salmon, as defined under the Magnusen-Stevens Fishery Conservation and Management Act (MSA)



LSA

N

0 350 700 Feet

Legend

Plant Communities

- Freshwater Marsh
- AG Agriculture
- OW Open Water
- RU Ruderal Upland

Other Features

- Project Boundary
- Willow Patches
- Ruderal Wetlands

FIGURE 1.1

Atlas Tract
Natural Communities

Source: Base - USGS Terraserver, 2002; Mapping - LSA Associates, Inc., 2005

I:\AGS434\GIS\fig1.1-Plant_comm.mxd

California Endangered Species Act (CESA): The CDFG has jurisdiction over State-listed, threatened, and endangered species under the CESA. The CESA prohibits take of species listed under the State act, pursuant to Section 2081 of the Fish and Game Code. Under the CESA, take means to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

San Joaquin County Multi-Species Habitat Conservation and Open Space Plan: The SJCOG has adopted a habitat conservation plan to offset biological impacts created by projects within San Joaquin County. One of the primary goals of the SJMSCP was to obtain permits from state and federal agencies that would cover projects over the next 50 years. To this end, the USFWS and CDFG have issued incidental take permits in conformance with FESA and CESA. Activities impacting anadromous fish and waters of the United States are subject to NMFS and ACOE regulations, respectively, and are not covered under the SJMSCP. These activities must be permitted directly through NMFS and ACOE. Generally, the direct take of species is not covered under the SJMSCP; only take of suitable habitat is allowed based on appropriate compensation and implementation of avoidance and minimization measures. Additionally, some special status species are not covered under the SJMSCP and impacts to these species require direct permitting through the appropriate agency.

Impacts to habitat for special status plant and animal species covered under the SJMSCP require payment of mitigation fees. Under the SJMSCP, ninety percent of the project site is mapped as C3. The fee for lands mapped as C3 is $1,724 per acre.

Migratory Bird Treaty Act (MBTA): The Migratory Bird Treaty Act of 1918 (16 U.S.C. §§ 703-712, July 3, 1918, as amended 1936, 1960, 1968, 1969, 1974, 1978, 1986 and 1989) makes it unlawful to "take" (kill, harm, harass, shoot, etc.) any migratory bird listed in Title 50 of the Code of Federal Regulations, Section 10.13, including their nests, eggs, or young. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, wading birds, seabirds, and passerine birds (such as warblers, flycatchers, swallows, etc.).

Special Status Species Definitions

The special status species lists were generated from the CNDDB (2005) and CNPS Electronic. Inventory (2005), 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:

- plants and animals that are listed or proposed for listing as threatened and endangered under the CESA or the FESA;
- plants and animals that are candidates for possible future listing as threatened or endangered under the FESA and CESA;
- 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;

- plants occurring on Lists 1A, 1B, 2, 3, and 4 of CNPS' electronic inventory (2005). 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;
- migratory nongame birds of management concern listed by the USFWS;
- animals that are designated as "species of special concern" by CDFG;
- animals that are designated as "species of concern" by USFWS;
- animal species that are "fully protected" in California.

Potentially Occurring Special Status Plant Species

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

Suisun Marsh Aster. The Suisun Marsh Aster (*Aster Lentus*) is a State Species of Concern and is listed by the California Native Plant Society (CNPS) as 1B species (Rare or endangered in California and elsewhere). This perennial plant occurs in dense vegetation and areas of stabilized substrate and is found on the water's edge in places where water is brackish and there is some degree of tidal influence.

Bristly Sedge. Bristly sedge (*Carex comosa*) is a CNPS list 2 species; it has no State or federal status. It occurs in marshes and swamps, lake margins, and other wet places.

Delta Button Celery. Delta button celery (*Eryngium racomosum*) is State listed as endangered and is a CNPS 1B species; it has no federal status. Delta button celery occurs in seasonally inundated areas on clay soils.

Rose Mallow. Rose mallow (Hibiscus lasiocarpus) is a CNPS List 2 species; it has no State or federal. status. This perennial herb is distributed throughout the Central Valley in marshes, swamplands, and along wet banks, frequently occurring among tules on the delta islands of the San Joaquin and Sacramento rivers.

Delta Tule Pea. Delta tule-pea (*Lathyrus jepsonii* spp. *jepsonii*) is a State species of concern and a CNPS Listed 1B species; it has no federal status. The Delta tule-pea is a pink-to-lavender-flowered perennial vine that grows in tangled masses among tules and in marsh borders with willow and dogwood.

Mason's Lilaeopsis. Mason's lilaeopsis (*Lilaeopsis masonii*) is a State species of concern and a CNPS Listed 1B species; it has no federal status. Mason's lilaeopsis grows on the exposed mud banks of instream islands and occasionally at the base of earthen levees.

Delta Mudwort. Delta mudwort (*Limosella subulata*) is listed as a CNPS 1B species; it has no State or federal status. Delta mudwort is closely associated with muddy or sandy intertidal flats and banks in brackish marsh or in freshwater marsh, and riparian scrub at low elevations.

Eelgrass Pondweed. Eelgrass pondweed (*Potamogeton zosteriformis*) is a CNPS List 2 species; it has no State or federal status. Eelgrass pondweed in found in marshes, swamps and slow moving streams.

Sanford's Arrowhead. Sanford's arrowhead (*Sagittaria sanfordi*) is a perennial, emergent, plant listed as a CNPS 1B species; it has no State or federal status. Sanford's arrowhead occurs in shallow, standing, fresh water, and sluggish waterways in marshes, swamps, ponds, vernal pools, and similar habitats.

Marsh Skullcap. Marsh skullcap (*Scutellaria galericulata*) is a CNPS List 2 species; it has no State or federal status. This species occurs is marshes, swamps and other wet places.

Blue Skullcap. Blue skullcap (*Scutellaria lateriflora*) is listed as a CNPS 2 species; it has no State or federal status. Habitat for blue skullcap is mesic meadows, marshes, and swamps.

These are all wetland-associated species that would be limited to the slough channels surrounding the project site or, in some cases, the interior toe drains associated with the levees that surround the site and the interior drainage ditches. Appropriately timed surveys of these areas performed during spring and summer 2005 failed to detect any of these species. The disturbed nature of the project area (regular maintenance of ditches and levees) further reduces the potential for special status plants to occur. These plants are all covered under the SJMSCP; no additional mitigation is required for special status plants.

Potentially Occurring Special Status Wildlife Species

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

Western Burrowing Owl. The western burrowing owl (*Athene cunicularia*) is a federal and 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. Surveys of the project area conducted in 2004 and 2005 disclosed the presence of burrowing owls and their sign along the east levee area during both wintering and breeding seasons. The proposed project will result in potential direct impacts to nesting and/or wintering birds and impacts to about 350 acres of suitable foraging habitat (i.e., former croplands) for burrowing owls. Loss of foraging habitat for burrowing

owls is covered under the SJMSCP. Mitigation is required to offset potential impacts to nesting birds (see below).

Tricolored Blackbird. The tricolored blackbird (*Agelaius tricolor*) is a State species of special concern, federal species of concern, and is listed by the US Fish and Wildlife Service (FWS) as a Migratory Non-game Bird of Management Concern (MNBMC). Tricolored blackbirds are highly colonial and nomadic, and are largely endemic to the lowlands of California. They prefer to nest in freshwater marshes with dense growths of herbaceous vegetation, such as mustard and thistle. The project site provides suitable foraging habitat for tricolored blackbirds and marginal nesting habitat; higher quality nesting habitat also occurs nearby the project site. Consequently, this species could occur on the project site and be affected by the project. Loss of foraging habitat for tricolored blackbirds is covered under the SJMSCP. Mitigation is required to offset potential impacts to nesting birds (see below).

Swainson's Hawk. The Swainson's hawk (*Buteo swainsoni*) is a State threatened species and a FWS MNBMC. It has no formal federal status. Swainson's hawks are long distance migrants, wintering primarily in South America, and returning north to breed. 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. They are known to forage up to 10 miles from their nest sites. There are several nesting records for Swainson's hawks from the vicinity of The Preserve, some as close as one mile. The agricultural fields on the project site provide suitable foraging habitat for Swainson's hawk and this species could potentially forage on the site. There are no suitable nest trees on the project site; suitable nest trees occur nearby. Loss of foraging habitat for Swainson's hawk is covered under the SJMSCP. Mitigation is required to offset potential impacts to nesting birds (see below).

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. Like the Swainson's hawk, the agricultural fields on the project site provide suitable foraging habitat for white tailed kites and this species could potentially forage on the site. There are no suitable nest trees on the project site; suitable nest trees occur nearby. Loss of foraging habitat for the white-tailed kite is covered under the SJMSCP. Mitigation is required to offset potential impacts to nesting birds (see below).

Northern Harrier. The Northern harrier (*Circus cyaneus*) is a state species of special concern. This raptor species is also protected under Fish and Game Code and the MBTA. Northern harriers are adapted to open grassland and marsh habitats, where they forage for small mammals and birds. They nest on the ground among weeds, cattails, and tall grasses in swampy or open grassland areas. Eggs are laid from mid-April to mid-May. The site provides suitable nesting habitat for northern harriers, and this species could occur on the site. Loss of foraging habitat for the northern harriers is covered under the SJMSCP. Mitigation is required to offset potential impacts to nesting birds (see below).

Giant Garter Snake. The giant garter snake (*Thamnophis gigas*) is a federally and state listed threatened species. It occurs in the Sacramento and San Joaquin Valleys in California. This snake uses agricultural wetlands, irrigation and drainage canals, ricelands, marshes, sloughs, ponds, small lakes, low gradient streams and adjacent upland areas. The giant garter snake requires several habitat components, including: adequate water during the active season (early spring through late fall) to provide an adequate food source; emergent, herbaceous wetland vegetation for cover and foraging; upland habitat for basking; and, higher elevation upland habitat for cover and refugia.

The sloughs surrounding the project site (Mosher Slough, Bear Creek) and adjacent levees constitute potential habitat for giant garter snake. The toe drains, interior drainage ditches and upland areas on the interior side of the levees provide only marginal habitat for this species. Levee slopes are steep and the levee face and interior drains and ditches are regularly cleared and maintained. There is no direct connection between the interior drains and slough channels. These factors limit the suitability of the project site for giant garter snakes and reduce the likelihood of their presence.

The giant garter snake is covered under the SJMSCP with the exception of localized areas associated with Disappointment and Pixley Sloughs, and nearby hydrologically connected areas. Mitigation is required to reduce the potential for take of giant garter snake (see below).

Western Pond Turtle. The western pond turtle (*Clemmys marmorata*), a California and federal 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 slough channels provide potential habitat for pond turtles; interior ditches are probably unsuitable for this species due to seasonal water fluctuations. The project will have a very minor impact within potential habitat for the western pond turtle. This species is covered under the SJMSCP; no additional mitigation is required.

Central Valley Steelhead and Fall Run/late-fall Run Chinook Salmon. The Central Valley steelhead (*Oncorhynchus mykiss*) is a federal threatened species; the Central Valley fall run/late-fall run chinook salmon (*Oncorhynchus tshawytscha*) is a federal candidate species. Neither species has any State status. Both species are anadromous fish that spend part of their life cycle in freshwater and part in saltwater. These species spawn in small, freshwater streams where the young remain for one to several years before migrating to the ocean to feed and grow. Adults return to their natal streams to spawn and complete their lifecycle. Mosher Slough and Bear Creek provide potential migration habitat for juveniles and adults of these species. These waters are also designated as Essential Fish Habitat (EFH) for the chinook salmon. The project may have indirect effects to steelhead and salmon through discharges of stormwater. These species are not covered by the SJMSCP; mitigation is required to offset project effects (see below).

Delta Smelt. The Delta smelt (*Hypomesus transpacificus*) is a State and federally threatened species. This species has been found as far inland as Mossdale on the San Joaquin River (SJMSCP 2000). The distribution of the species within the Delta varies depending on the volume of freshwater outflow and how it affects the saltwater intrusion. Delta smelt utilize shallow water habitat between mean high

water and about 10 feet below mean low water. Spawning occurs from December to the end of June, in dead-end sloughs, in shore areas of the Delta, or river edges. Spawning occurs in the water column above vegetation or in open water above sandy or rocky substrates. Delta smelt have been collected and observed from waterways within the delta system and suitable habitat exists in Bear Creek and Mosher Slough within the project area. As with steelhead and salmon, the project may have indirect effects to Delta smelt through discharges of stormwater. Delta smelt are covered under the SJMSCP; additional mitigation is also required to address incidental take.

Jurisdictional Waters

Potential jurisdictional waters on project site are limited to the interior drainage ditches. Rainfall collecting on the site is the primary source of water for these drainage ditches. Seasonally high groundwater and levee seepage also contribute to the volume of water contained in these features. These drainages all originate on site and there is currently no connection between the interior drainage system and navigable waters. Irrigation water is not pumped onto the site and drainage water is not pumped off of the site. Jurisdictional waters are potentially subject to regulation under the following:

Clean Water Act, Section 404: Under Section 404 of the CWA, the ACOE regulates the disposal of dredged or fill material into "waters of the Unites States." Waters of the Unites States are defined as "... all interstate waters including interstate wetlands...intrastate lakes, rivers, streams (including intermittent streams), wetlands, [and] natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce..." Jurisdiction of "other waters" extends to the ordinary high water mark (OHWM) or the upward extent of any adjacent wetland. Appendix F provides more detail regarding Section 404 and jurisdictional waters.

Clean Water Act, Section 401: Under Section 401 of the CWA, the RWQCB issues clean water certifications for activities occurring within waters of the United States. These certifications are associated with Section 404 permits and require that the proposed action will not violate water quality standards individually or cumulatively over the term of the Section 404 permit.

Porter-Cologne Water Quality Control Act: This legislation requires that "any person discharging waste, or proposed to discharge waste, within any region that could affect the waters of the State to file a report of discharge." The RWQCB regulates any said discharges that may pose a threat to water quality within the State.

California Department of Fish and Game Code, Section 1602: CDFG regulates activities that divert, obstruct, or alter stream flow, or substantially modify the bed, channel, or bank of a lake or stream, or associated riparian vegetation. Section 1602 requires that a Streambed Alteration Agreement is obtained from CDFG prior to any activity within a lake or streambed.

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

Effects Considered to be Less than Significant

The project site supports primarily highly disturbed, nonnative vegetation communities and provides minimal habitat value. The loss of nonnative plant communities on the project site is considered less than significant. Likewise loss of existing orchards on the Shima Tract to accommodate extensions of

Trinity Parkway and Hammer Lane is not expected to have a significant impact on plant or wildlife species.

Appropriate timed focused surveys for special status plants were conducted during the spring and summer of 2005 with negative results. Consequently, the project is not expected to have any significant effects to special status plants.

Potentially Significant Effects

Impact BR-1: Implementation of the project will remove habitat for special status species.
The proposed project will convert the agricultural/fallow fields and drainage ditches on the project site (and off-site/Shima Tract) to residential and mixed-use development and roadway/bridge improvements. Despite the extensive habitat modifications, several special status species could occur in these habitats**.** The loss of habitat for special status species triggers **Significance Criteria BR-a through BR-d**.

Mitigation Measure BR-1: The project shall implement the SJMSCP conservation strategy, which includes payment of appropriate fees to SJCOG for conversion of undeveloped lands. Documentation of fee payment shall be provided to the USFWS prior to the start of construction.

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

Impact BR-2: Implementation of the project may impact several special status bird species that may nest on the site or immediate vicinity.
Despite the extensive habitat modifications to the site (and off-site/Shima Tract), several special status bird species including burrowing owl, tricolored blackbird, white-tailed kite, northern harrier, and Swainson's hawk could be impacted by site development through direct impacts to nest sites (burrowing owl, northern harrier) or indirect effects to off-site nesting. Mitigation is required to offset potential impacts to nesting birds (see below). Direct take of these species is not covered under the SJMSCP and would also be in violation of the Fish and Game Code and MBTA.

Mitigation Measure BR-2a: The burrowing owl is covered under the SJMSCP. Mitigation measures consistent with those listed in the SJMSCP (listed below) for burrowing owls shall be adhered to where applicable.

1. During the non-breeding season (September 1 through January 31) any burrowing owls occupying the project site should be evicted from the project site by passive relocation as described in the California Department of Fish and Game's Staff Report on Burrowing Owls (Oct., 1995).
2. During the breeding season (February 1 through August 31) occupied burrows shall not be disturbed and shall be provided with a 75 meter protective buffer until and unless the TAC, with the concurrence of the Permitting Agencies' representatives on the TAC; or unless a qualified biologist approved by the Permitting Agencies 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 can be destroyed.
3. These Incidental Take Minimization Measures are consistent with the provisions of the Migratory Bird Treaty Act.

Mitigation Measure BR-2b: The tricolored Blackbird is covered under the SJMSCP. Mitigation measures consistent with those listed in the SJMSCP (listed below) for tricolored blackbirds shall be adhered to where applicable.

A setback of 500 feet from colonial 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.

These Incidental Take Minimization Measures are consistent with the provisions of the Migratory Bird Treaty Act as described in Section 4.4.1-Existing Settings.

Mitigation Measure BR-2c: The Swainson's hawk is covered under the SJMSCP. The following mitigation measures consistent with those listed in the SJMSCP for the Swainson's hawk shall be adhered to where applicable.

1. If a nest tree in the vicinity of the project becomes occupied during construction activities, then all construction activities shall remain a distance of two times the dripline diameter of the tree, measured from the nest.

Mitigation Measure BR-2d: The white-tailed kite is covered under the SJMSCP. Mitigation measures consistent with those listed in the SJMSCP (listed below) for the white-tailed kite shall be adhered to where applicable.

1. Suitable nesting habitat shall be removed between September 1 and February 29, outside of the nesting season.
2. If project construction is to begin during the nesting season (March 1 to August 31), a qualified biologist shall survey suitable nesting habitat within the project area more than 10 days prior to the start of construction. If presence of occupied nests is conformed, a setback of 500 feet from the nest site, marked by brightly colored temporary fencing, shall be maintained until nestlings have fledged or it is confirmed that nesting has failed, as determined by a qualified biologist.

Mitigation Measure BR-2e: The northern harrier is covered under the SJMSCP. Mitigation measures consistent with those listed in the SJMSCP (listed below) for the northern harrier shall be adhered to where applicable.

1. Suitable nesting habitat shall be removed between September 1 and February 29, outside of the nesting season.
2. If project construction is to begin during the nesting season (March 1 to August 31), a qualified biologist shall survey suitable nesting habitat within the project area more than 10 days prior to the start of construction. If presence of occupied nests is conformed, a setback of 500 feet from the nest site, marked by brightly colored temporary fencing, shall be maintained until nestlings have fledged or it is confirmed that nesting has failed, as determined by a qualified biologist.

Implementation of Mitigation Measures BR-2a through BR-2e will prevent the conditions outlined in Significance Criteria BR-b through BR-d from occurring. Thus, the impact is reduced to less than significant.

Impact BR-3: Construction of the project may impact the giant garter snake.
While the sloughs surrounding the project site (Mosher Slough, Bear Creek) and adjacent levees constitute potential habitat for giant garter snake, the levees may impede movement into upland areas or wetlands on the interior of the site. The levee slopes are steep and the levees are regularly maintained and sparsely vegetated. Further, the toe drains associated with the levees, interior drainage ditches, and upland areas on the interior side of the levees provide only marginal habitat for this species; the drains are also regularly cleared and maintained and are not connected to the slough channels. These factors limit the suitability of the project site for giant garter snakes and reduce the likelihood of its presence. Nevertheless, giant garter snakes could occur in the area and be affected by the residential development project, triggering **Significance Criteria BR-a through BR-d**.

Impacts to potential habitat for giant garter snake is covered under the SJMSCP, with the exception of localized areas associated with Disappointment and Pixley Sloughs, and nearby hydrologically connected areas that constitute *known occupied habitat*. Mitigation is required to reduce the potential for take of giant garter snake (see below).

Mitigation Measure BR-3: 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 San Joaquin Council of Governments (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 superceded 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.
13. In addition to the above measures, the following avoidance and minimization measures shall also be implemented.
14. All construction shall be conducted during daylight hours.
15. 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[1].

Implementation of Mitigation Measure BR-3 will prevent the conditions outlined in Significance Criteria BR-b through BR-d from occurring, reducing this impact to less than significant.

Impact BR-4: The discharge of stormwater from the developed project site into Mosher Slough may impact the giant garter snake, anadromous fish, and Delta smelt.

Residential development of The Preserve Tract may result in indirect effects to the giant garter snake, Central Valley steelhead, Central Valley fall-run chinook salmon, and/or Delta smelt. Residential development of the site will result in an increase in impervious surfaces and introduce new pollution sources. This will result in an increase in the volume of stormwater discharged to Mosher Slough and potential degradation of water quality triggering **Significance Criteria BR-a through BR-d**.

Residential development of the site will significantly increase the amount of impervious area within the watershed, increasing the amount of storm water runoff. The average annual volume of stormwater discharged to Mosher Slough is expected to be about 216 acre-feet. This discharge will occur primarily December through March. An estimated 21.5 acre-feet will be discharged in a 10-year storm event and 42.6 acre-feet in a 100-year event (Todd Pace, pers. comm.). This equates to a 10.7 cfs discharge during a 100-year event, or an average increase of about 0.5 percent in flow volume in Mosher Slough for up to 48 hours.

The proposed project will change the existing agricultural land use to residential uses. While this land use change will eliminate a source of agricultural pesticides and fertilizers that may have impacted water quality adjacent to the site, the landscaping associated with the proposed project will also require the use of pesticides, herbicides, and fertilizers. Negative impacts to water quality from this pollution source could persist. Vehicular traffic will also increase and will create increased potential for hydrocarbons, sediments, heavy metals, and other pollutants to reach local waterways via storm water runoff.

The City of Stockton 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 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 project applicant will be required to 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.

[1] The Caltrans Construction BMPs Manual is considered the industry standard for protection of water quality during construction activities and, as such, is applicable to non-roadway projects.

The current trend in stormwater management is the use of on-site created wetlands systems for treating stormwater prior to discharge; such a system will be employed for The Preserve. Created wetlands provide stormwater treatment, conveyance, and flood control; wildlife habitat and recreational opportunities may also be provided by these systems. Wetlands help trap sediments in stormwater and remove nutrients and other pollutants. The water quality treatment features incorporated into the wetlands system will include: aeration, biofilters, and vegetated pretreatment basins or wetland filters. These features function together as an effective system to manage the urban storm runoff quality and the health of the wetlands system and ensure that any discharges to Mosher Slough and downstream waters have an improved quality.

The wetlands system will also provide flood detention during large storm events. All runoff from the residential development, including nuisance flows (dry weather flows), will be routed through the wetlands prior to discharging into receiving waters. The wetlands provide water quality treatment and meet NPDES stormwater permit requirements for urban runoff and for first flush of runoff.

Additional information on potential water quality impacts and mitigation measures is included in Section 4.3 Water Resources. Any specific mitigation requirements resulting from consultation with USFWS or NOAA Fisheries, beyond those included herein, shall also become conditions of project approval.

Implementation of Mitigation Measure WQ-1a and WQ-1b will prevent the conditions outlined in Significance Criterion BR-a through BR-d from occurring and will reduce impacts to less than significant.

Impact BR-5: The project may impact wetlands and/or other waters regulated by the ACOE, RWQCB, and/or CDFG.

The proposed project will eliminate the interior drainage ditches on the property. These drainage ditches are subject to jurisdiction of the ACOE and/or RWQCB. Historically, the ACOE has not asserted jurisdiction over manmade drainage ditches that have questionable connectivity to navigable waters. However, recent court cases, and ACOE precedents, indicate that these waters may be regulated by the ACOE. The RWQCB typically uses ACOE methods to classify waters of the State and may regulate waters that are exempt from ACOE jurisdiction.

The drainage ditches do not possess a bed and banks that characterize streams subject to CDFG jurisdiction under Fish and Game Code.

The project will eliminate 0.46 acre of wetland area that is regulated by the ACOE and/or RWQCB. The condition outlined in **Significance Criteria BR-d** could occur. The project will result in potentially significant adverse impacts to waters of the U.S. and State.

Mitigation Measure BR-5: 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 0.46 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-5 will prevent the conditions outlined in Significance Criterion BR-d from occurring. Thus, the project will not result in significant adverse impacts to jurisdictional waters regulated by the ACOE, RWQCB, and/or CDFG.

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

Noise modeling data is provided in Appendix G.

4.5.1 Existing Setting

This noise assessment follows the City of Stockton noise standards, which include the City's Noise Element and Municipal Code Noise Control Ordinance. This study discusses the current noise environment, evaluates short-term construction noise, assesses long-term noise effects from project related traffic noise, and identifies mitigation measures and their effectiveness.

Fundamentals of Noise

Noise Definition. Noise impacts can be described in three categories. The first is audible impact that refers to increases in noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3 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 and 3 dB. This range of noise levels has been found to be noticeable only in laboratory environments. The last category is changes in noise level of less than 1 dB, which are inaudible to the human ear. Only audible changes in existing ambient or background noise levels are considered potentially significant. Therefore, a 3 dBA increase in long-term noise levels is used as a threshold of significant change in this noise analysis. The decreases in noise level due to distance divergence were also used to analyze the effects of construction noise associated with the proposed project.

Characteristics of Sound. Sound increases 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. An A-weighted noise level de-emphasizes low and very high frequencies of sound similar to the human ear's de-emphasis 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 one 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 10 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 10-decibel increase in sound level is perceived by the human ear as only 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 (Leq) and Community Noise Equivalent (CNEL) based on A-weighted decibels (dBA). Leq 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 Leq 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 (Ldn) is similar to the CNEL, but without the adjustment for nighttime noise events. CNEL and Ldn 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 Lmax, and percentile noise exceedance levels, or LN. Lmax 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. LN is the noise level that is exceeded "N" percent of the time during a specified time period. For example, the L10 noise level represents the noise level exceeded 10 percent of the time during a stated period. The L50 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 L90 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 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. A sound level of 190 dBA will rupture the eardrum and permanently damage the inner ear. 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 lists "Definitions of Acoustical Terms," and Table 4.5.B shows "Common Sound Levels and Their Sources." Table 4.5.C shows "Land Use Compatibility for Exterior Community Noise" recommended by the California Department of Health, Office of Noise Control.

Sensitive Land Uses in the Project Vicinity

Sensitive receptors include residences, schools, hospitals, and similar uses that are sensitive to noise. Based on an aerial photo, existing sensitive land uses within the project area include residences. Existing residences are located to the east of the proposed project site in the Twin Creeks Estates development. These sensitive land uses may potentially be affected by noise generated during on-site construction.

Overview of the Existing Noise Environment

The primary existing noise sources in the project area are transportation facilities. Traffic on Eight Mile Road, Hammer Lane, Trinity Parkway, Mariners Drive, and other local streets is a steady source of ambient noise in the project vicinity. 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 Preserve EIR Traffic Impact Analysis (Fehr & Peers Transportation Consultants, January 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) plus approved project 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. However, several locations currently have intervening structures (e.g., housing) or block walls and would reflect lower noise levels than illustrated in Table 4.5.D. The specific assumptions used in developing these noise levels and the model printouts are provided in Appendix A.

As shown in Table 4.5.D, traffic noise along Trinity Parkway and Aksland Drive is generally moderate to moderately low. Along Trinity Parkway south of McAuliffe Way, the 65 and 60 dBA CNEL impact zones extend 84 and 175 feet from the centerline, respectively. Along Aksland Drive north of Otto Drive, the 65 and 60 dBA CNEL impact zones extend 77 and 160 feet from the centerline, respectively. The 70 dBA CNEL impact zones along Trinity Parkway south of McAuliffe Way and Aksland Drive north of Otto Drive are confined within the roadway right-of-way.

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 7:00 p.m. and after the addition of 10 dBA to sound levels occurring in the night between 7:00 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 7:00 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 Noise Sources

Noise Source	A-Weighted Sound Level in Decibels	Noise Environments	Subjective Evaluations
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	
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

Source: Compiled by LSA Associates, Inc. 2002

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

Land Use Category	Noise Range (L_{dn} 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
Notes: 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.

Table 4.5.D: Existing Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 CNEL (feet)	Centerline to 65 CNEL (feet)	Centerline to 60 CNEL (feet)	CNEL (dBA) 50 feet from Centerline of Outermost Lane
Eight Mile Road					
Eight Mile Road west of Regatta Drive	6030	<50[1]	58	117	63.2

Roadway Segment	ADT	Centerline to 70 CNEL (feet)	Centerline to 65 CNEL (feet)	Centerline to 60 CNEL (feet)	CNEL (dBA) 50 feet from Centerline of Outermost Lane
Eight Mile Road east of Regatta Drive	15080	<50	100	212	67.2
Eight Mile Road west of Trinity Parkway	21730	63	127	269	38.8
Eight Mile Road east of Trinity Parkway	60030	116	246	528	73.2
Otto Drive					
Between Aksland Drive and Mariners Drive	13250	<50	77	160	65.3
Hammer Lane					
Between Aksland Drive and Mariners Drive	1200	<50	<50	<50	54.9
East of Mariners Drive	30460	70	133	278	68.2
Trinity Parkway					
South of Eight Mile Road	42900	75	162	348	71.9
North of McAuliffe Way	26130	59	118	251	68.3
South of McAuliffe Way	15150	<50	84	175	65.9
North of Otto Drive	13250	<50	77	160	65.3
Mariners Drive					
North of Otto Drive	2200	<50	<50	<50	57.6
Between Otto Drive and Whitewater Lane	15050	<50	65	139	66
Between Whitewater Lane and Blackswain Place	14130	<50	62	134	65.7
Between Blackswain Place and Surgeon Road	14180	<50	62	134	65.7
South of Surgeon Road	15450	<50	82	176	67.5
North of Hammer Lane	22260	<50	104	225	69.1
South of Hammer Lane	9400	<50	59	127	65.3
Regatta Drive					
South of Eight Mile Road	9450	<50	59	127	65.4

Source: LSA Associates, Inc., April 2006
Notes: [1] Traffic noise within 50 feet of roadway centerline requires site specific analysis.

4.5.2 Impact Significance Criteria

A project will normally have a significant effect on the noise environment if it will substantially increase the ambient noise levels for adjoining areas or conflict with adopted environmental plans and goals of the community. The applicable noise standards governing the project site are the criteria in the City's Noise Element and Noise Ordinance, and Uniform Building Code.

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 in Table 4.5.E.

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

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.F.

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

Noise Level Descriptor	Daytime (7 am to 10 pm)	Nighttime (10 pm to 7 am)
Hourly Leq, dBA	55	45
Maximum level, dBA	75	65

Source: City of Stockton, November 1998

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

Land Use Category	Normally Acceptable [1]	Conditionally Acceptable [2]	Normally Unacceptable [3]	Clearly Unacceptable [4]
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
Notes: [1] 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.
[2] 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.
[3] 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.
[4] Clearly Unacceptable - New construction or development should generally not be undertaken.

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 Ldn/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 Ldn/CNEL or less in outdoor activity areas, and 45 dBA Ldn/CNEL or less in indoor areas. Where it is not possible to reduce exterior noise to 60 dBA Ldn/CNEL or less by incorporating a practical application of the best available noise-reduction technology, an exterior noise level of up to 65 dBA Ldn/CNEL will be allowed. Under no circumstances will interior noise levels be permitted to exceed 45 dBA Ldn/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.

NOI-d 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 across residential property lines. 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 7:00 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.

4.5.3 Impacts And Mitigation Measures

Implementation of the proposed project could result in short-term construction and long-term traffic noise impacts. The following focuses on the increase in noise associated with the construction of the proposed project and traffic in the project area.

Impacts Considered to be Less than Significant

Impact NOI-1: The project could create on-site stationary source noise impact.

Within the proposed project, new sources of noise will be generated by project land uses. However, the proposed homes and elementary schools are not expected to result in any significant on-site operational noise that would impact off-site noise sensitive uses. School outdoor activities would be limited to daytime hours. Conditions outlined in **Significance Criterion NOI-a** will not occur.

Potentially Significant Impacts and Mitigation Measures

Impact NOI-2: Construction related activities may negatively impact surrounding receptors.

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

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 site access roads. As shown in Table 4.5.G, there will be a relatively high single-event noise exposure potential at a maximum level of 86 dBA Lmax with trucks passing at 50 feet. However, the projected construction traffic will be minimal when compared to the existing traffic volumes on Trinity Parkway and Aksland Drive. 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.G lists the 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 Lmax 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 on-site scrapers, bulldozers, water trucks, and pickup trucks. Based on the information in Table 4.5.G, the maximum noise level generated by each scraper is assumed to be 87 dBA Lmax at 50 feet from the scraper. Each bulldozer would also generate 85 dBA Lmax at 50 feet. The maximum noise level generated by water trucks and pickup trucks is approximately 86 dBA Lmax at 50 feet from these vehicles. Each doubling of the sound sources 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 during this phase of construction would be 91 dBA Lmax at a distance of 50 feet from the active construction area. The closest existing residences in the vicinity of the project area are located approximately 150 feet from the project construction area. The closest residences may be subject to short-term noise reaching 82 dBA Lmax, generated by construction activities near the project boundary. Compliance with the hours specified in the City's Municipal Code regarding construction activities will result in a less than significant noise impact on adjacent noise-sensitive land uses. During all project site construction, the construction contractor shall limit all construction-related activities to the hours of 7:00 a.m. to 7:00 p.m. on weekdays and weekends.

Table 4.5.G: Maximum Construction Equipment Noise Levels

Type of Equipment	Range of Maximum Sound Levels Measured (dBA at 50 feet)	Suggested Maximum Sound Levels for Analysis (dBA at 50 feet)
Pile Drivers, 12,000 to 18,000 ft-lb/blow	81 to 96	93
Rock Drills	83 to 99	96
Jack Hammers	75 to 85	82
Pneumatic Tools	78 to 88	85
Pumps	74 to 84	80

Type of Equipment	Range of Maximum Sound Levels Measured (dBA at 50 feet)	Suggested Maximum Sound Levels for Analysis (dBA at 50 feet)
Dozers	77 to 90	85
Scrapers	83 to 91	87
Haul Trucks	83 to 94	88
Cranes	79 to 86	82
Portable Generators	71 to 87	80
Rollers	75 to 82	80
Tractors	77 to 82	80
Front-End Loaders	77 to 90	86
Hydraulic Backhoe	81 to 90	86
Hydraulic Excavators	81 to 90	86
Scrapers	81 to 87	85
Graders	79 to 89	86
Air Compressors	76 to 89	86
Trucks	81 to 87	86

Source: Bolt, Beranek & Newman 1987

Construction of the proposed project would potentially result in relatively high noise levels and annoyance at the closest residences. Compliance with the City's Municipal Code Section 16-340.030 will be required to minimize noise during construction. To further ensure that short-term construction-related noise impacts resulting from the proposed project are reduced, the following measures are required.

Mitigation Measure NOI-1:

- During all project site excavation and on-site grading, the project contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards;
- The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site and;
- The construction contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.

Compliance with the City's Municipal Code, together with implementation of Mitigation Measures NOI-1 will ensure that noise impacts related to construction activities will not be significant. Conditions outlined in Significance Criterion NOI-a will not occur.

Impact NOI-3: Implementation of the proposed project will increase noise levels on the project site and surrounding areas.

Long-Term Traffic Noise Impacts

The 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. The resultant noise levels were weighted and summed over a 24-hour period in order to determine the CNEL values. The existing and future traffic volumes (Fehr & Peers Transportation Consultants, January 2006) for roadway segments in the project vicinity were used in the traffic noise impact analysis. Table 4.5.H shows the Existing (2005) Plus Approved Projects with project traffic noise levels adjacent to roadway segments in the project vicinity. Tables 4.5.I and 4.5.J show the 2025 with and without project traffic noise levels adjacent to roadway segments in the project vicinity. Tables 4.5.K and 4.5.L show the 2035 with and without project traffic noise levels adjacent to roadway segments in the project vicinity. 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. However, several locations currently have intervening structures (e.g., housing) or block walls and would reflect lower noise levels than illustrated in Table 4.5.D. The specific assumptions used in developing these noise levels and the model printouts are provided in Appendix A.

Off-site Traffic Noise Impact

Tables 4.5.H, 4.5.J, and L show that all roadways within the project vicinity would have a traffic noise level increase less than 3 dBA. This increase in noise levels would not be perceptible by the human ear in an outdoor environment. Therefore, no significant traffic noise impact would occur on off-site, noise-sensitive land uses. No mitigation measures for off-site, noise-sensitive land uses would be required.

On-Site Traffic Noise Impact

The proposed project on-site land use includes residences, parks, and a school. With the exception of the proposed school, these land uses are proposed adjacent to Trinity Parkway and Otto Drive. As shown in Table 4.5.L, the 2035 with project traffic noise levels would continue to be moderate along Trinity Parkway and Otto Drive within the project area.

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.

Based on Table 4.5.L, the following distances from the roadway centerline could potentially impact the proposed land uses along Trinity Parkway and Otto Drive:

Trinity Parkway. If outdoor active use areas such as backyards, patios, or balconies are proposed within 65 feet of the Trinity Parkway centerline, they would be exposed to a traffic noise level exceeding 65 dBA CNEL, and mitigation to reduce exterior noise levels would be required. A sound barrier with a minimum height of 10 feet is required along Trinity Parkway to provide noise attenuation for outdoor active use areas within the 70 dBA CNEL impact zone.

If outdoor active use areas such as backyards, patios, or balconies are proposed between 65 and 133 feet from the Trinity Parkway centerline, they would be exposed to a traffic noise level exceeding 65 dBA CNEL, and mitigation to reduce exterior noise levels would be required. A sound barrier with a minimum height of eight feet is required along Trinity Parkway to provide noise attenuation for outdoor active use areas within the 65-70 dBA CNEL impact zone.

If outdoor active use areas such as backyards, patios, or balconies are proposed between 133 and 282 feet from the Trinity Parkway centerline, they would be exposed to a traffic noise level exceeding 60 dBA CNEL, and mitigation to reduce exterior noise levels would be required. A sound barrier with a minimum height of six feet is required along Trinity Parkway to provide noise attenuation for outdoor active use areas within the 60-65 dBA CNEL impact zone.

As previously noted, in Section 3.3, Specific Project Description/Operational Characteristics, the City approved relocation of the existing dryland levee west of its current location. The relocated levee will be 8 ½ to 9 feet in height and will provide adequate noise attenuation for residences adjacent to Trinity parkway. Additional noise barriers along Trinity Parkway will not be required to protect future residences in The Preserve.

If residential structures are proposed within 76 feet of the Trinity Parkway centerline 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., 70 dBA - 24 dBA = 46 dBA). Therefore, building facade upgrades such as double-paned windows would be required.

If residential structures are proposed within 447 feet of the Trinity Parkway centerline 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.

Otto Drive. If outdoor active use areas such as parks, backyards, patios, or balconies are proposed within 80 feet from the Otto Drive centerline, they would be exposed to a traffic noise level

exceeding 65 dBA CNEL, and mitigation to reduce exterior noise levels would be required. A sound barrier with a minimum height of 10 feet is required along Otto Drive to provide noise attenuation for outdoor active use areas within the 70 dBA CNEL impact zone.

If outdoor active use areas such as parks, backyards, patios, or balconies are proposed between 80 and 165 feet from the Otto Drive centerline, they would be exposed to a traffic noise level exceeding 65 dBA CNEL, and mitigation to reduce exterior noise levels would be required. A sound barrier with a minimum height of eight feet is required along Otto Drive to provide noise attenuation for outdoor active use areas within the 65-70 dBA CNEL impact zone.

If outdoor active use areas such as parks, backyards, patios, or balconies are proposed between 165 and 353 feet from the Otto Drive centerline, they would be exposed to a traffic noise level exceeding 60 dBA CNEL, and mitigation to reduce exterior noise levels would be required. Therefore, a sound barrier with a minimum height of six feet is required along Otto Drive to provide noise attenuation for outdoor active use areas within the 60-65 dBA CNEL impact zone.

In summary, the noise impacts adjacent to Otto Drive and within The Preserve boundaries will require noise attenuation. The segment of Otto Drive (west of Trinity Parkway) shows that residences will be approximately 145 feet from the roadway centerline. Accordingly, a noise barrier with a minimum height of 10 feet will be required along this segment to reduce noise levels to below the 65 CNEL standard.

If residential structures are proposed within 93 feet of the Otto Drive centerline 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., 70 dBA - 24 dBA = 46 dBA). Therefore, building facade upgrades such as double-paned windows would be required.

If residential structures are proposed within 559 feet of the Otto Drive centerline 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-2: The following mitigation measures shall be implemented for the proposed project:

Exterior Noise. The following mitigation measures are required for outdoor active use areas:

- A sound barrier with a minimum height of 10 feet shall be required to protect outdoor active use areas such as parks, backyards, patios, and balconies for the following areas:
  - Within 65 feet of the Trinity Parkway centerline
  - Within 80 feet of the Otto Drive centerline

- A sound barrier with a minimum height of eight feet shall be required to protect outdoor active use areas such as parks, backyards, patios, and balconies for the following areas:
  - Within 133 feet of the Trinity Parkway centerline
  - Within 165 feet of the Otto Drive centerline

- A sound barrier with a minimum height of six feet shall be required to protect outdoor active use areas such as parks, backyards, patios, and balconies for the following areas:
  - Within 282 feet of the Trinity Parkway centerline
  - Within 353 feet of the Otto Drive centerline

Interior Noise. To meet the City's 45 dBA CNEL interior noise standard, the following mitigation measures will be required:

- Building facade upgrades such as double-paned windows with a Sound Transmission Class higher than standard construction for the proposed residential structures that have no intervening structures for the following areas:
  - Within 76 feet of the Trinity Parkway centerline
  - Within 93 feet of the Otto Drive centerline

- Air-conditioning systems for the proposed residential structures that have no intervening structures for the following areas:
  - Within 447 feet of the Trinity Parkway centerline
  - Within 559 feet of the Otto Drive centerline

Implementation of Mitigation Measure NOI-2 will ensure that noise impacts related to traffic will not be significant. Conditions outlined in Significance Criterion NOI-b through NOI-d will not occur.

Table 4.5.H: Existing (2005) Plus Approved Projects Plus Project 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						
Eight Mile Road west of Regatta Drive	6,030	<50[1]	58	117	63.2	0
Eight Mile Road east of	15,080	<50	100	212	67.2	0

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)
Regatta Drive						
Eight Mile Road west of Trinity Parkway	21,730	63	127	269	68.8	0
Eight Mile Road east of Trinity Parkway	62,800	120	254	544	73.4	0.2
Otto Drive						
West of Trinity Parkway	13,820	<50	79	165	65.5	NA
Between Trinity Parkway and Mariners Drive	22,970	<50	109	230	67.7	2.4
Hammer Lane						
Between Trinity Parkway and Mariners Drive	1,200	<50	<50	<50	54.9	0
East of Mariners Drive	40,120	80	158	334	69.4	1.2
Trinity Parkway						
South of Eight Mile Road	45,670	78	168	363	72.2	0.3
North of McAuliffe Way	30,280	64	130	276	68.9	0.6
South of McAuliffe Way	19,300	<50	98	205	67	1.1
North of Otto Drive	17,500	<50	92	192	66.5	1.2
Mariners Drive						
North of Otto Drive	2,200	<50	<50	<50	57.6	0
Between Otto Drive and Whitewater Lane	24,725	<50	90	194	68.1	2.1
Between Whitewater Lane and Blackswain Place	23,810	<50	88	189	68	2.3
Between Blackswain Place and Surgeon Road	23,860	<50	88	189	68	2.3
South of Surgeon Road	25,130	53	113	244	69.6	2.1
North of Hammer Lane	31,920	62	133	286	70.7	1.6
South of Hammer Lane	9,400	<50	59	127	65.3	0
Regatta Drive						
South of Eight Mile Road	9,450	<50	59	127	65.4	0

Source: LSA Associates, Inc. April 2006
Notes: [1] Traffic noise within 50 feet of roadway centerline requires site specific analysis.

Table 4.5.I: 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					
Eight Mile Road west of Regatta Drive	13,400	<50[1]	97	197	65.9
Eight Mile Road east of Regatta Drive	16,650	<50	110	227	66.9
Eight Mile Road west of Trinity Parkway	29,940	80	158	334	69.4
Eight Mile Road east of Trinity Parkway	58,650	118	244	520	72.3
Otto Drive					
Between Trinity Parkway and Mariners Drive	17,145	<50	91	190	66.5
Hammer Lane					
Between Trinity Parkway and Mariners Drive	16,020	<50	87	182	66.2
East of Mariners Drive	26,150	65	121	252	67.6
Trinity Parkway					
South of Eight Mile Road	34,890	66	141	303	71
North of McAuliffe Way	35,460	70	144	307	69.6
South of McAuliffe Way	25,460	58	116	246	68.2
North of Otto Drive	25,270	58	116	245	68.1
South of Otto Drive	12,220	<50	74	152	65
North of Hammer Lane	12,920	<50	76	158	65.2
South of Hammer Lane	4,400	<50	<50	80	60.5
Mariners Drive					
North of Otto Drive	2,500	<50	<50	<50	58.2
Between Otto Drive and Whitewater Lane	8,130	<50	<50	92	63.3
Between Whitewater Lane and Blackswain Place	8,130	<50	<50	92	63.3
Between Blackswain Place and Surgeon Road	8,330	<50	<50	94	63.4
South of Surgeon Road	9,430	<50	59	127	65.4
North of Hammer Lane	8,630	<50	56	120	65
South of Hammer Lane	4,200	<50	<50	74	61.8
Regatta Drive					
South of Eight Mile Road	3,650	<50	<50	68	61.2

Source: LSA Associates, Inc., April 2006
Notes: [1] Traffic noise within 50 feet of roadway centerline requires site specific analysis.

Table 4.5.J: 2025 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						
Eight Mile Road west of Regatta Drive	13,400	<50[1]	97	197	65.9	0
Eight Mile Road east of Regatta Drive	16,650	<50	110	227	66.9	0
Eight Mile Road west of Trinity Parkway	29,940	80	158	334	69.4	0
Eight Mile Road east of Trinity Parkway	59,900	119	247	528	72.4	0.1
Otto Drive						
West of Trinity Parkway	13,840	<50	80	165	65.5	NA
Between Trinity Parkway and Mariners Drive	26,070	59	118	250	68.3	1.8
Hammer Lane						
Between Trinity Parkway and Mariners Drive	17,610	<50	92	193	66.6	0.4
East of Mariners Drive	28,770	68	128	268	68	0.4
Trinity Parkway						
South of Eight Mile Road	36,140	67	144	310	71.2	0.2
North of McAuliffe Way	38,090	73	151	322	69.9	0.3
South of McAuliffe Way	28,090	61	124	263	68.6	0.4
North of Otto Drive	27,900	61	123	262	68.6	0.5
South of Otto Drive	14,500	<50	82	170	65.7	0.7
North of Hammer Lane	15,200	<50	84	175	65.9	0.7
South of Hammer Lane	5,090	<50	<50	87	61.2	0.7
Mariners Drive						
North of Otto Drive	2,500	<50	<50	<50	58.2	0
Between Otto Drive and Whitewater Lane	9,160	<50	<50	100	63.8	0.5
Between Whitewater Lane and Blackswain Place	9,160	<50	<50	100	63.8	0.5
Between Blackswain Place and Surgeon Road	9,360	<50	<50	102	63.9	0.5
South of Surgeon Road	10,460	<50	63	136	65.8	0.4
North of Hammer Lane	9,660	<50	60	129	65.5	0.5

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)
South of Hammer Lane	4,200	<50	<50	74	61.8	0
Regatta Drive						
South of Eight Mile Road	3,650	<50	<50	68	61.2	0

Source: LSA Associates, Inc., April 2006
Notes: [1] Traffic noise within 50 feet of roadway centerline requires site specific analysis.

Table 4.5.K: 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					
Eight Mile Road west of Regatta Drive	36,700	95	183	382	69.7
Eight Mile Road east of Regatta Drive	43,940	104	204	430	70.5
Eight Mile Road west of Trinity Parkway	55,520	118	237	502	71.5
Eight Mile Road east of Trinity Parkway	76,120	141	290	619	72.9
Otto Drive					
East of Shima Tract Parkway	14,840	<50[1]	83	173	65.8
West of Trinity Parkway	22,620	<50	108	228	67.7
Between Trinity Parkway and Mariners Drive	31,415	65	133	283	69.1
Hammer Lane					
Between Trinity Parkway and Mariners Drive	39,310	75	154	328	70.1
East of Mariners Drive	52,490	93	188	398	70.6
Trinity Parkway					
South of Eight Mile Road	33,940	64	138	298	70.9
North of McAuliffe Way	33,800	68	140	297	69.4
South of McAuliffe Way	29,100	63	127	269	68.7
North of Otto Drive	27,900	61	123	262	68.6
South of Otto Drive	16,700	<50	89	187	66.3
North of Hammer Lane	32,660	72	139	291	68.5
South of Hammer Lane	24,290	63	116	240	67.2
Mariners Drive					
North of Otto Drive	1,600	<50	<50	<50	56.2

Between Otto Drive and Whitewater Lane	8,280	<50	<50	94	63.4
Between Whitewater Lane and Blackswain Place	8,280	<50	<50	94	63.4
Between Blackswain Place and Surgeon Road	8,480	<50	<50	95	63.5
South of Surgeon Road	9,580	<50	60	128	65.4
North of Hammer Lane	112,780	<50	67	143	66.1
South of Hammer Lane	4,700	<50	<50	80	62.3
Regatta Drive					
South of Eight Mile Road	12,550	<50	58	123	65.2

Source: LSA Associates, Inc., April 2006
Notes [1] Traffic noise within 50 feet of roadway centerline requires site specific analysis.

Table 4.5.L: 2035 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						
Eight Mile Road west of Regatta Drive	36840	95	183	383	69.7	0
Eight Mile Road east of Regatta Drive	44050	104	205	431	70.5	0
Eight Mile Road west of Trinity Parkway	55750	118	238	504	71.5	0
Eight Mile Road east of Trinity Parkway	77110	142	293	624	72.9	0
Otto Drive						
East of Shima Tract Parkway	15420	<50[1]	85	177	66	0.2
West of Trinity Parkway	35850	71	145	309	69.7	2
Between Trinity Parkway and Mariners Drive	43860	80	165	353	70.5	1.4
Hammer Lane						
Between Trinity Parkway and Mariners Drive	40400	76	157	334	70.2	0.1
East of Mariners Drive	54100	94	191	406	70.7	0.1
Trinity Parkway						

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)
South of Eight Mile Road	34960	66	141	303	71	0.1
North of McAuliffe Way	36220	71	146	311	69.7	0.3
South of McAuliffe Way	32490	67	136	289	69.2	0.5
North of Otto Drive	31290	65	133	282	69.1	0.5
South of Otto Drive	19100	<50	97	204	66.9	0.6
North of Hammer Lane	34720	74	144	303	68.8	0.3
South of Hammer Lane	25260	64	119	246	67.4	0.2
Mariners Drive						
North of Otto Drive	1600	<50	<50	<50	56.2	0
Between Otto Drive and Whitewater Lane	8800	<50	<50	97	63.6	0.2
Between Whitewater Lane and Blackswain Place	8800	<50	<50	97	63.6	0.2
Between Blackswain Place and Surgeon Road	9000	<50	<50	99	63.7	0.2
South of Surgeon Road	10100	<50	62	133	65.7	0.3
North of Hammer Lane	11800	<50	69	147	66.3	0.2
South of Hammer Lane	4770	<50	<50	81	62.4	0.1
Regatta Drive						
South of Eight Mile Road	11290	<50	67	143	66.1	0.1
Shima Tract Parkway						
North of Otto Drive	13560	<50	61	130	65.5	0.1
South of Otto Drive	12890	<50	59	126	65.3	0.1

Source: LSA Associates, Inc., April 2006
Notes[1]: Traffic noise within 50 feet of roadway centerline requires site specific analysis.

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-1 and NOI-2.

4.6 LAND USE

4.6.1 Existing Setting

General Plan
The project site is currently within the jurisdiction of City of Stockton. The project will require a General Plan Amendment to Mixed Use. The existing City of Stockton General Plan designation for the development is Low-Medium Density Residential and Commercial (see Figure 4.6.1). The proposed M-X designation permits large properties of at least 100 acres to accommodate a wide range of land uses.

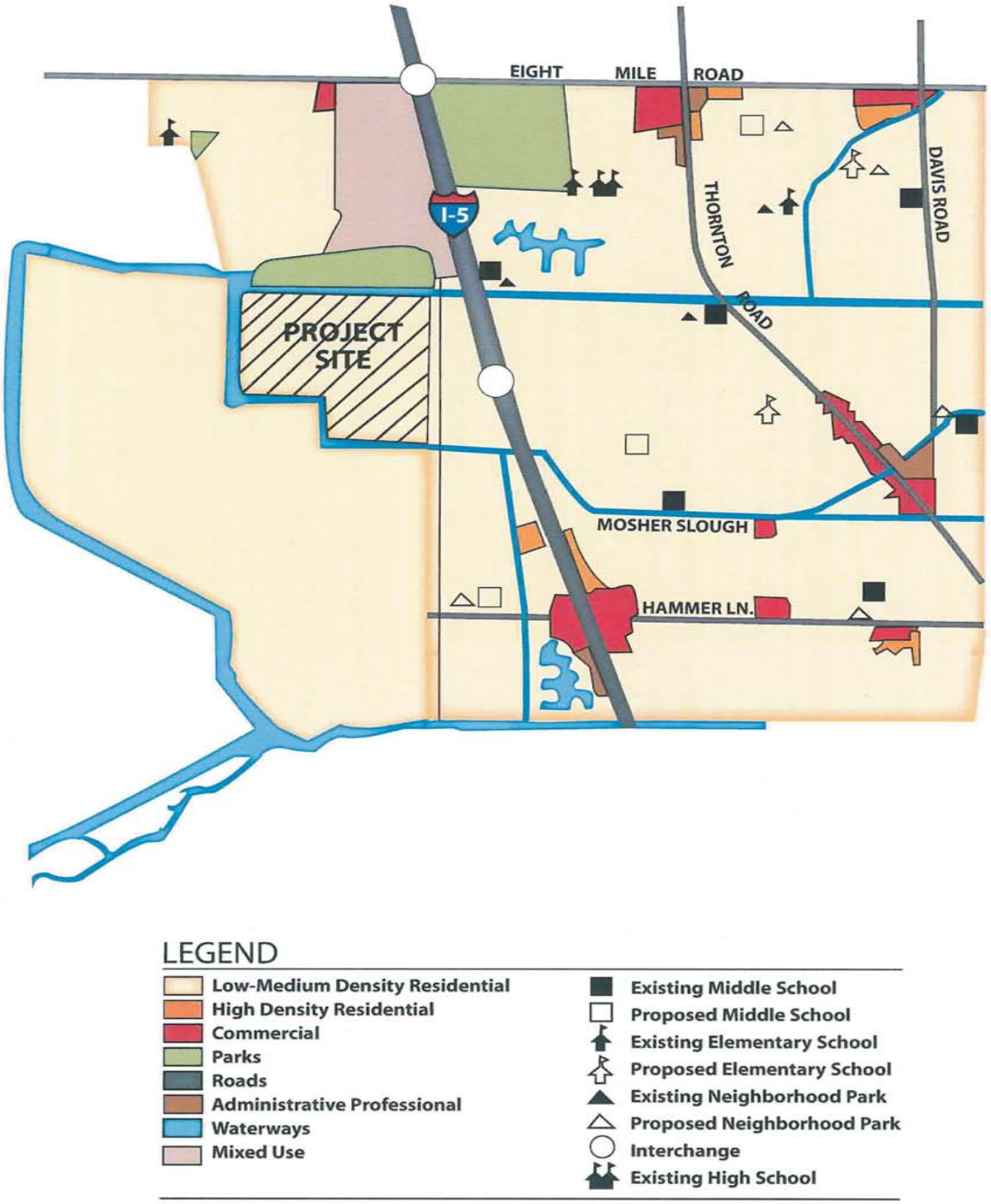
Existing Zoning
The existing zoning districts for the project site are shown on Figure 4.6.2. The proposed project site is zoned for Low-Density Residential and General Commercial. The project seeks re-zoning of the site to a M-X District.

Surrounding General Plan Land Use
The San Joaquin County General Plan designates the lands to the west and south of the project site as General Agricultural. The City of Stockton General Plan designates the lands to the east and north as Low-Medium Density Residential and Mixed Use. The area north of the project site includes the existing Spanos Park West development and the proposed Westlake Villages residential development.

Planning North of Eight Mile Road
The City of Stockton is actively reviewing the lands north of Eight Mile Road for inclusion in the City's General Plan 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.

Existing Land Use/Agricultural Status
Historically, the project site and the areas to the west and south have been used for agricultural production. About 300 acres of the site have actually been in production and the remaining 60 acres are comprised of waterways and levees. In 1987, sugar beets were grown on the site. The site has recently been used for dry farming of growing cotton. Crops grown in the surrounding areas include walnuts, tomatoes, sugar beets, beans, corn, barley, wheat and alfalfa.

The California Department of Conservation's Division of Land Resource Protection has developed the Farmland Mapping and Monitoring Program (FMMP), which assesses California's agricultural resources. The most recent farmland data available from the FMMP for San Joaquin County is from 2002. Agricultural resources are rated using a classification system that combines soil ratings and current land use to create Important Farmland Maps. The California Department of Conservation defines agricultural land as follows:



LSA

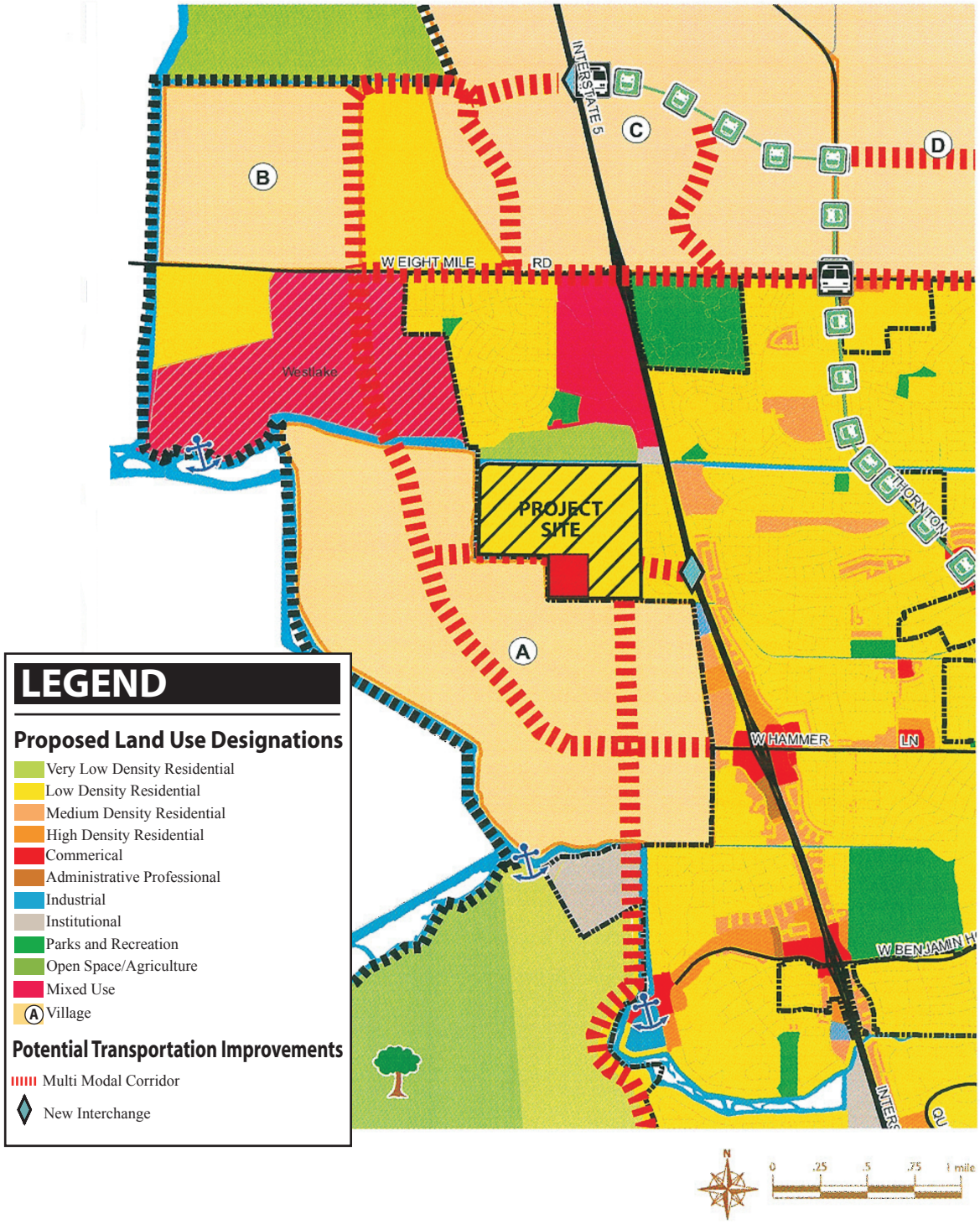
FIGURE 4.6.1

The Preserve

Existing General Plan Designations

SOURCE: Mid-Valley Engineering, 2006

P:\AGS434\Graphics\EIR Figures\4.6.1.cdr (10/27/06)



LSA

FIGURE 4.6.2

The Preserve

Existing Zoning Designations

SOURCE: Mid-Valley Engineering, 2005

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Prime Farmland: Farmland with the best combination of physical and chemical features able to sustain long term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

Farmland of Statewide Importance: Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated production at some time during the four years prior to the mapping date.

Unique Farmland: Farmland of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.

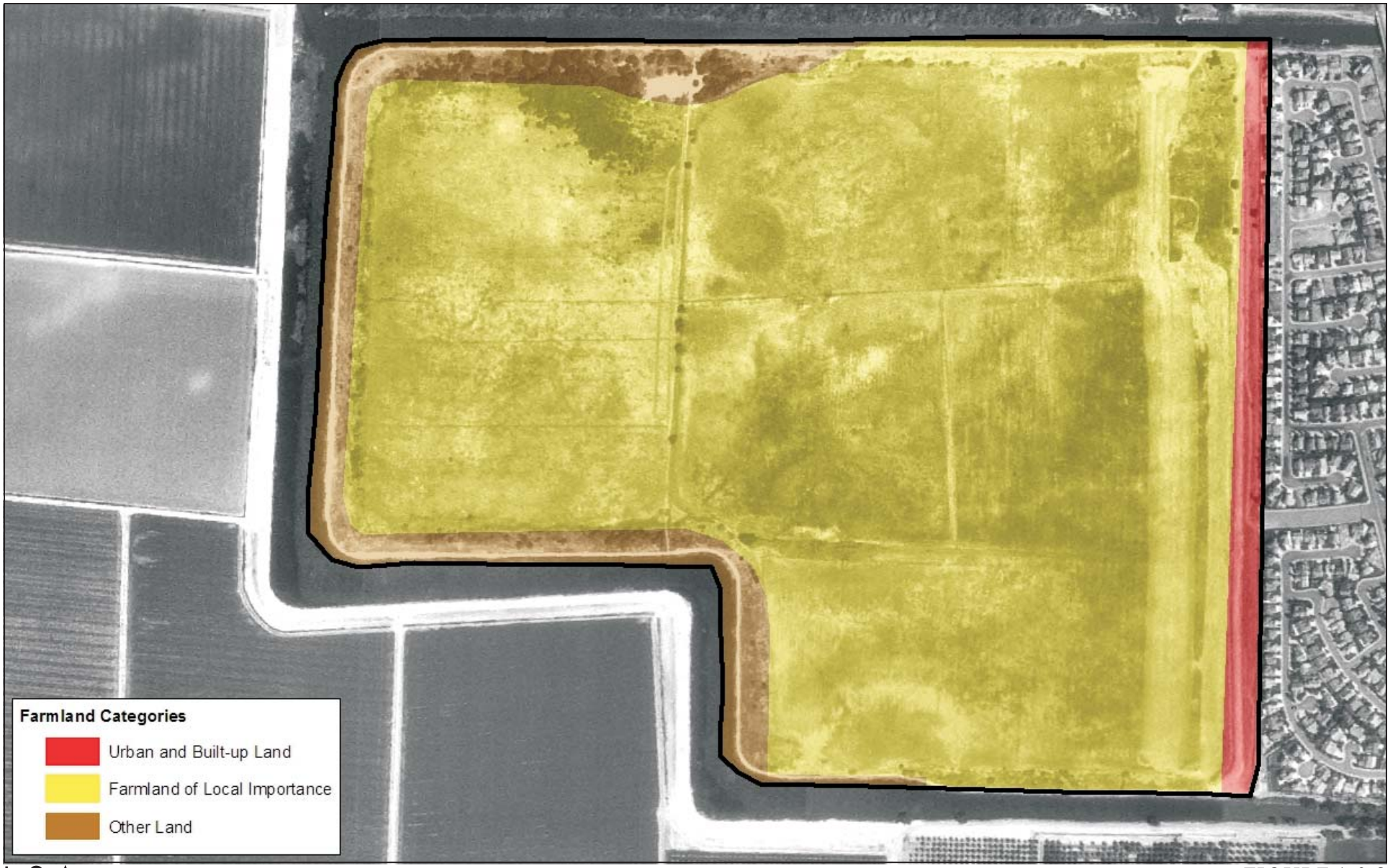
Farmland of Local Importance: Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.

The FMMP identified the site as "farmland of local importance", as shown in Figure 4.6.3. The levees and canals along the northern, western and southern borders are noted as other land. The areas to the north and east are identified as urban and built-up land, and areas of prime farmland and farmland of statewide importance are located adjacent to the property to the southwest and southeast, respectively.

The California Department of Conservation's Division of Land Resource Protection reported that there were 56,507 acres designated as farmland of local importance in San Joaquin County in 2002. This site contains approximately 0.5 percent of the County's farmland of local importance**.** In 2002, San Joaquin had a total of 626,404 acres of important farmland (including prime farmland, farmland of statewide importance, unique farmland, and farmland of local importance). For the time period between 2000 and 2002, the net acreage change for farmland of local importance was a loss of 2,399 acres, and there was a total the net reduction of 4,586 acres for important farmland.

The California Land Conservation Act, also known as the Williamson Act, is an agricultural land protection program. The Williamson Act creates an arrangement whereby private landowners contract with counties and cities to voluntarily restrict land to agricultural and open-space uses. In return, restricted parcels are assessed for property tax purposes at a rate consistent with their actual uses, rather than potential market value. To terminate a Williamson Act contract, a landowner files a notice of non-renewal and the contract winds down over the remaining (usually a nine-year) term, with property taxes rising to the full unrestricted rate at the end of the non-renewal period.

The land on the site is not under a California Land Conservation Act contract. The land to the south and to the west is prime agricultural land in Williamson Act non-renewal, while the land to the east and north is urban and built-up land, as shown in Figure 4.6.4.



LSA

FIGURE 4.6.3

N

0 500
Scale In Feet

The Preserve

Farmland Designations

SOURCE: LSA, 2005

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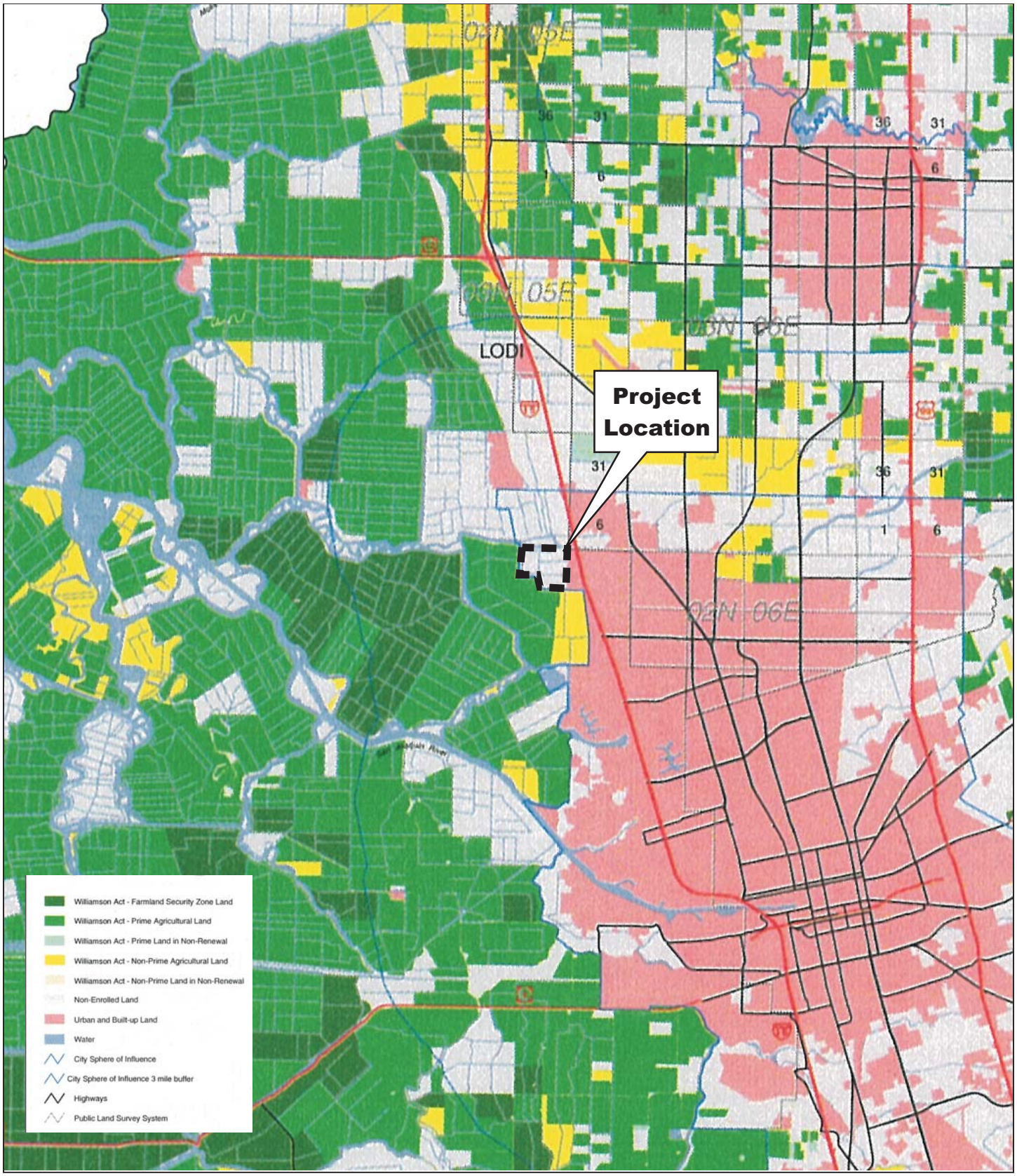

LSA

FIGURE 4.6.4

1:100,000

The Preserve
Williamson Act Lands

SOURCE: California Department of Conservation, 2002

P:\AGS434\Graphics\EIR Graphics\4.6.4.cdr (11/30/05)

The Stockton Municipal Code Agricultural Preservation section (Right to Farm) (16-310.040) establishes that no agricultural use (within recognized minimum customs and standards) shall become a nuisance due to changes in land use adjacent to any farming operation. The code requires the landowner of land converted from agricultural to urban uses to report a deed restriction waiving any right to complain about or file any action concerning farming operations and practices. The approval of all parcel, tentative, or vesting maps adjacent to existing agricultural activities shall require the owners, developer or successor-in-interest to notify all purchasers of lots within the project site of the nature and extent of existing agricultural activities in the vicinity of the project site. This disclosure shall provide notice of potential conflicts or effects of typical agricultural activities including noise, dust, agricultural spraying, or agricultural burning and that typical agricultural activities shall not be considered a nuisance.

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.

LU-f Place residents in danger due to natural disaster.

4.6.3 Impacts and Mitigation Measures

Impacts Considered to be Less than Significant

Impact LU-1: Implementation of the proposed project will not be compatible with all surrounding land uses.

Land uses surrounding the proposed project area include agricultural uses to the west and south, and residential uses to the east and north. The project will be compatible with surrounding residential uses, however there may be some discrepancy with surrounding agricultural uses. The Stockton Municipal Code Agricultural Preservation, Right to Farm (16-3120.040) ensures that new urban development will not restrict existing agricultural operations. This Agricultural Preservation Code requires residents of property on or near agricultural land to be prepared to accept the inconveniences or discomforts associated with agricultural operations or activities in order to preserve and protect

agricultural land use. The code also requires sellers to disclose the nature and extent of existing agricultural activities in the vicinity of the project site. The proposed Preserve project includes the levee barriers that provide a trail system and open space area. Therefore, the conditions outlined in **Significance Criteria LU-c** will not occur.

Impact LU-2: The project may be inconsistent with City General Plan and regional land use plans and policies.

The proposed project site lies within the limits of the City of Stockton and is designated as Low-Medium Density Residential and Commercial. The project will require a General Plan Amendment to eliminate the commercial designation (change to Low-Medium Density Residential). However, the project is consistent with the General Plan as The Preserve will be primarily residential in nature. The project will not effect regional land use plans as the project site is located within the City of Stockton. Therefore, the conditions outlined in **Significance Criteria LU-d** will not occur.

Impact LU-3: The project may result in a substantial increase in intensity or have growth inducing impacts.

The proposed project will result in increased intensity in the area, and may induce growth. However, the City of Stockton has included the proposed development in the City's General Plan and has planned for growth in the project area. Therefore, the project will not result in unanticipated growth impacts or intensity. (**Significance Criteria LU-e)**

Impact LU-4: The proposed project will result in a substantial deviation from the character of the previous designations.

The applicant is proposing a General Plan Amendment to eliminate "commercial" and re-zoning to Mixed Use. The Mixed Use designation allows for a variety of land uses, however, The Preserve will utilize primarily residential uses. These residential uses represent a significant change from the existing agricultural character of the site, however, the site was previously designated for Urban uses. Therefore, the conditions outlined in **Significance Criteria LU-b** will not occur.

Impact LU-5: Implementation of the proposed project will lead to the conversion of agricultural lands.

The project site is not within an area defined as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance on the most recent maps (2002) prepared by the Farmland Mapping and Monitoring Program of the California Resources Agency. The project site is defined as Farmland of Local Importance, making the project area exempt from City agriculture mitigation fees. The project site is also designated for urban uses and is not within an area designated for land conservation under the Land Conservation Act (Williamson Act). The proposed project would not conflict with a Williamson Act contract nor is it within an area zoned for agricultural use. Therefore, the conditions outlined in **Significance Criteria LU-a** would not occur.

Potentially Significant Impacts

Impact LU-6: Implementation of the proposed project could endanger residents due to potential natural disasters.

Due to the naturally isolated character of the proposed project, the potential for residents to be injured due to natural disaster (e.g., fire, earthquake, levee failure, etc.) exists. To ensure an orderly evacuation in the event of natural disaster, an evacuation plan must be prepared and made available to residents. Therefore, the conditions outlined in **Significance Criteria LU-f** would not occur.

Mitigation Measure LU-1: The owner, developer, or successors in interest shall provide an evacuation plan as a condition of approval. The evacuation plan must identify the following:

- Emergency evacuation routes using levee features and bridge access
- Local street evacuation routes
- Local evacuation access locations
- Emergency contact information

Implementation of Mitigation Measure LU-1 will reduce the above impact to a less than significant impact

Policy Consistency Conclusion

The consistency analysis (Tables 4.6.A and 4.6.B) concludes that the proposed Preserve project is consistent with a majority of the General Plan policies that have applicability to the project. Inconsistencies are discussed under Section 4.2, Air Quality, Section 4.6, Land Use, Section 4.7, Traffic and Circulation, and Section 4.8, Housing/Population/Socioeconomics.

4.6.4 Level of Significance after Mitigation

Implementation of the proposed Preserve project is consistent with a majority of the City's policies that are relevant to the project. The project does not provide high density residential housing does not promote the City's goals for providing affordable, high density residential units. Additionally, the project will create impacts to traffic and air quality and is in consistent with the General Plan Policies. The development of urban uses will replace lands previously used for agricultural purposes. Since these lands have been designated for urban uses, and are not subject to the City’s Agricultural Fee program, the impact is not considered significant.

Table 4.6.A: Adopted 1990 General Plan Goals and Policies

Goals and Policies (1990 GP)	Goal and Policy Number	Consistency Statement
General Objectives	**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 medium density single family residential, cluster residential and condominiums with open space and parklands, and an elementary school.
General Objectives	**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 1,404 low to medium density residential units. These will include single family residential, cluster residential, and condominiums.
General Objectives	**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 Preserve project is to provide an orderly hierarchy of roadways to meet the transportation demands generated by the project. In addition, the proximity of I-5 and Spanos Park West provides efficient movement of people and goods between developments.
General Objectives	**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. The proximity of I-5 will also help decrease commute distance for residents of the development.
Land Use - Urban Growth and Overall Development	**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**. The proposed project is currently within the Urban Service Area and within Stockton City Limits. Services and infrastructure are currently available for the project from Trinity Parkway.
Land Use - Urban Growth and Overall	**Goal 1, Policy 3:** Future urban development adjacent to the City should occur within the City. This requires that vacant	**Consistent**. The project is currently within the Urban Service Area and within Stockton City Limits.

Goals and Policies (1990 GP)	Goal and Policy Number	Consistency Statement
Development	unincorporated properties shall annex to the City prior to provision of any City services.	
Land Use - Urban Growth and Overall Development	**Goal 1, Policy 4:** Considering the large amount of undeveloped land beyond the existing City Limits yet within the Urban Service Area, it 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.	**Consistent.** The project site is currently within the Urban Service Area and within Stockton City Limits.
Land Use - Urban Growth and Overall Development	**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.	**Consistent.** Although the project area is currently used for agricultural purposes, it lies within the City's Urban Service Boundaries and has been zoned for residential and commercial uses.
Land Use - Urban Growth and Overall Development	**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 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.
Land Use - Urban Growth and Overall Development	**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. The proposed project is located in areas that are potentially environmentally sensitive as described in the biological section, which has mitigation measures for several sensitive species habitats.

Goals and Policies (1990 GP)	Goal and Policy Number	Consistency Statement
Land Use - Urban Growth and Overall Development	**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	**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. The proposed wetlands will serve as a means of mitigating potential water quality impacts.
Land Use - Urban Growth and Overall Development	**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 development.	**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.
Land Use - City Concept and Design	**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 is bordered on three sides (north, south, and west) by sloughs and creeks, and on the east by Trinity Parkway. These distinctive boundaries will establish The Preserve as a community. The Master Development Plan for the proposed project provides landscaping and entry treatments into the residential development from Trinity Parkway and Otto Drive that are aesthetically pleasing and will promote a positive image for the City.

Goals and Policies (1990 GP)	Goal and Policy Number	Consistency Statement
Land Use - City Concept and Design	**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 project. These roadway connections are designed to convey traffic on major collector roads (Otto Drive and Trinity Parkway), thus avoiding residential neighborhood impacts.
Land Use - City Concept and Design	**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. However, 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	**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.	**Inconsistent.** The project proposes a range of densities that provide low to medium density units. The proposed project will provide conventional single family residential units, cluster residential, condominiums, and a school. Developments such as SPW business park will provide nearby commercial and retail services, however, commercial services will not be directly integrated within The Preserve. The project will comply with the parkland requirement to 5 acres per 1,000 residences, which would require 22.04 acres.
Land Use - Residential Land Use	**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	**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

Goals and Policies (1990 GP)	Goal and Policy Number	Consistency Statement
	an internally directed local street system, and services located at the periphery of the neighborhood (i.e., commercial, offices, institutional).	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 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	**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 a total of 118.32 acres.
Land Use - Residential Land Use	**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 Twin Creeks 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	**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 existing wetland preservation area to the north of the project site will buffer residential from commercial uses.
Land Use - Mixed Land Use	**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).

Goals and Policies (1990 GP)	Goal and Policy Number	Consistency Statement
Land Use - Mixed Land Use	**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	**Goal 1, Policy 2:** New residential uses shall be located close to main transportation routes to ensure convenient access to employment centers, schools, shopping, and recreational facilities.	**Consistent.** Residents of The Preserve will have convenient access to a variety of facilities via I-5 and Otto Drive and Trinity Parkway.
Housing - Adequate Sites	**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 Preserve 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 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	**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 adjacent to the SPW and Twin Creeks developments. All infrastructure and utilities will be extended from the adjacent developments. In addition, previous improvements to levee structures surrounding the Atlas Tract that were constructed in 2007 provide up to 300-year flood event protection.
Housing - Affordability	**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 Preserve does not include high-density residential units. However, the project does provide low and medium density units as well as a variety of housing types including condominiums and cluster residential

Goals and Policies (1990 GP)	Goal and Policy Number	Consistency Statement
		lots.
Housing - Governmental Constraints	**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 Twin Creeks development and Trinity Parkway. 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 Housing and Neighborhoods	**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 proposed elementary school will be open to the public and may be used as a community center.
Housing - Adequate Sites	**Implementation Program 1:** Continue to monitor the supply of land in various zoning categories (RL, RM, RH, and C-R) to prevent shortages from developing which may increase housing costs.	**Consistent**. The Preserve development includes single family residential units as well as cluster residential and condominiums.
Housing - Affordability	**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 approximately 360 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	**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.	**Inconsistent.** The proposed project does not include high-density residential units.
Transportation -	**Goal 1, Policy 2:** The street system shall provide at least two (2)	**Consistent.** The project will provide 2 access routes via Trinity Parkway and Otto Drive. However, the Otto

Goals and Policies (1990 GP)	Goal and Policy Number	Consistency Statement
Streets and Highways	independent access routes for all major developed areas.	Drive extension to Shima Tract is not expected as the first houses are constructed. Emergency vehicle access (EVA) will be provided along Trinity Parkway as a way to mitigate this short-term issue.
Transportation - Streets and Highways	**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	**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	**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	**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 planned community of the project is to create a system of street hierarchy that discourages traffic through neighborhood streets. Otto Drive is a major arterial that will transect the project area.
Transportation - Streets and Highways	**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 planned community of the project is to create a system of street hierarchy that discourages traffic through neighborhood streets. Design and landscaping of smaller neighborhood roadways are planned with traffic calming effects to ensure quite, safe neighborhoods.

Goals and Policies (1990 GP)	Goal and Policy Number	Consistency Statement
Transportation - Streets and Highways	**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. 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	**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	**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 Director of Public Works and Transit Authority.
Public Services and Facilities - Public Facilities	**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 proposed project lies within City Limits and within the Urban Service Area. It is expected that the project area will be adequately served by expanding existing facilities.
Public Services and Facilities - Public Facilities	**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 Preserve includes plans for an 13.64 acre elementary school site. The site is surrounded by open space and residential units with no need for students to cross major arterial or collector streets.
Public Services and Facilities - Public Facilities	**Goal 2, Policy 7:** Residential developers should coordinate with the school district to insure the adequate provision of schools.	**Consistent**. Coordination with the Lodi Unified School District will ensure proper capacity and placement of the planned elementary school. Existing middle and high schools in the area may have trouble accommodating students from the proposed project as

Goals and Policies (1990 GP)	Goal and Policy Number	Consistency Statement
		many are already operating over capacity. However, development fees will be paid to offset this impact.
Public Services and Facilities - Public Facilities	**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. 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 land uses.
Public Services and Facilities - Water Facilities	**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	**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 wetland area may also provide a source of water for landscape irrigation.
Public Services and Facilities - Water Facilities	**Goal 1, Policy 8:** Non-potable water should be used to fill any lake or water features within development projects.	**Consistent.** Water for the on-site wetland area will be supplied by storm water and Mosher Slough.
Public Facilities and Services - Parks and Recreation	**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. **Type of Park Acres/1,000 pop. Acres/Park** Service Radius Neighborhood Park 2.00 5 ½ mile	**Consistent.** The proposed project, with 4,366 residents would require 22 acres of neighborhood and community parkland, as well as 13 acres of regional parkland. The Preserve includes 61.41 acres of open space and 40.9 acres of parkland, exceeding the City's standards.

Goals and Policies (1990 GP)	Goal and Policy Number	Consistency Statement
	Community Park 3.00 15 1 mile to city wide Regional Park 3.00 30+ region wide Golf Courses 1 course/40,000 130 - 180 region wide	
Public Facilities and Services - Parks and Recreation	**Goal 1, Policy2:** The City shall ensure that community centers are provided at a level that meets the following standards. **<u>Community Center Standards</u>** City-owned community centers 1 center / 50,000 population Combined City-owned, school district, 1 center / 30,000 population and housing authority 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.	**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 proposed elementary school could serve as a community center as this facility will be open to the general public. The City's General Plan includes provisions to include all schools as meeting the requirement for community centers.
Public Facilities and Services - Parks and Recreation	**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 The Preserve 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 Recreation	**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	**Inconsistent.** The Preserve development includes 40.9 acres of parkland. However, neighborhood parks are not located adjacent to the proposed school site.

Goals and Policies (1990 GP)	Goal and Policy Number	Consistency Statement
	patrons need not cross major arterial or collector streets.	
Public Facilities and Services - Parks and Recreation	**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.** The proposed public park will have access to arterial and collector streets.
Public Facilities and Services - Parks and Recreation	**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 along Trinity Parkway, Otto Drive, and the levee system that surrounds the entire project area.
Public Facilities and Services - Parks and Recreation	**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 Preserve Master Development Plan. These facilities will be available to residents and visitors to the community.
Public Facilities and Services - Parks and Recreation	**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 40.9 acres of parklands, additional open space, recreational areas and trail systems.
Public Facilities and Services - Fire Safety	**Goal 1, Policy 4:** New development shall provide adequate access for emergency vehicles, particularly firefighting equipment, as well as provide evacuation routes.	**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 will review and approve the project plan.
Public Facilities and Services - Police Protection	**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	**Goal 1, Policy 2:** Defensible space design techniques shall be	**Consistent.** The Master Development Plan includes

Goals and Policies (1990 GP)	Goal and Policy Number	Consistency Statement
Services - Police Protection	considered in the review of new developments in order to enhance crime prevention.	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	**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.	**Consistent.** The proposed project lies within City Limits and the Urban Service Boundary, making this development part of Stockton's logical urban expansion.
Natural and Cultural - Conservation	**Goal 1, Policy 2:** Support firm policies and ordinance by San Joaquin County to protect productive agricultural land.	**Inconsistent.** The project will convert 300 acres of productive agricultural lands to urban uses.
Natural and Cultural - Conservation	**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	**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 Otto Drive. Consequently, residents 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	**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	**Goal 5, Policy 3:** Assist project applicants in understanding and meeting the air quality mitigation requirements established by the	**Consistent.** Measures are proposed in Section 4.3, Air Quality, to mitigate impacts of the proposed project.

Goals and Policies (1990 GP)	Goal and Policy Number	Consistency Statement
	San Joaquin County Air Pollution Control District.	
Natural and Cultural - Open Space	**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 applicant will comply with all applicable laws, regulations and permits relating to the potential removal of riparian vegetation along Bear Creek and Mosher Slough.
Natural and Cultural - Open Space	**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	**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	**Goal 2, Policy 1:** Residential developments shall be encouraged to provide private open space areas.	**Consistent.** The project applicant has integrated parklands, recreational areas, opens space and trails into The Preserve.
Natural and Cultural - Open Space	**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.** Otto Drive, a major arterial, runs through the proposed project. The project applicant has designed a landscaped median strip for this roadway.
Natural and Cultural	**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. The developer will disclose this ordinance as appropriate to potential buyers.
Noise	**Goal 2, Policy 2:** The compatibility of proposed projects with existing and future noise levels due to traffic on public roadways,	**Consistent.** Section 4.5, Noise, assesses the noise impacts of the proposed project.

Goals and Policies (1990 GP)	Goal and Policy Number	Consistency Statement
	railroad line operations, and aircraft in flight shall be evaluated by comparison to Figure 1 of the Stockton General Plan Policy Document (May 20, 1996).	
Noise	**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: 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.	**Consistent.** Section 4.5, Noise, assesses the noise impacts of the proposed project. Mitigation measures are provided to comply with this policy.

Table 4.6.B: Goals And Policies (proposed 2035 General Plan)

Goals and Policies (Proposed 2035 GP)	Goal and Policy Number	Consistency Statement
Community Development	**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.	**Consistent.** The proposed project site lies within the Stockton City Limits, and with the Urban Service Area. It is therefore part of the City's planned orderly expansion of development.
Community Development	**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.	**Consistent.** The Preserve includes residential units, an elementary school and parks. Transit and pedestrian traffic is encouraged by the proximity of these facilities. **Inconsistent.** The Preserve is adjacent to the SPW development which includes commercial centers. However, transit and pedestrian traffic is not encouraged by the long distance between the center of The Preserve and the center of the SPW.
Community Development	**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.	**Consistent.** The Preserve includes residential units, an elementary school and parks . This mixture of uses creates a feeling of community rather than an unconnected suburban subdivision.
Housing	**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.	**Consistent.** The project consists of low to medium density residential units including cluster residential and condominiums.
Housing	**Principle 2**: Promote the development of a range of housing types.	**Consistent.** The project consists of low to medium density residential units including single family residential, cluster residential, and

Goals and Policies (Proposed 2035 GP)	Goal and Policy Number	Consistency Statement
		condominiums.
Economic Development	**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.	**Inconsistent.** The Preserve does not include commercial, retail, or industrial uses.
Economic Development	**Principle 5**: Designate sufficient quantities of land to accommodate the needs of projected job growth.	**Consistent.** The proposed project will add approximately 1,654 residential units to the area, therefore accommodating the needs of project job growth.
Community Design	**Principle 5**: Establish high standards for quality design.	**Consistent.** An objective of the project is to provide sound urban development while also providing flexibility in the design concepts. All of the design concepts and guidelines outlined in the Master Development Plan are intended to promote aesthetically pleasing and environmentally sound planning development 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 medium density single family residential, cluster residential, and condominiums, as well as an elementary school, parkland and open space. The project is also near the commercial business center of SPW, and the Paradise Point Marina.
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 includes residential units, an elementary school and parks and is adjacent to the SPW development which contains commercial centers. Transit and pedestrian traffic is encouraged by the proximity

Goals and Policies (Proposed 2035 GP)	Goal and Policy Number	Consistency Statement
		of these facilities.
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.** The proposed project includes trail systems and parks that connect to the levee system and provides corridors that connect to other neighborhoods and roads.
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 proposed project includes residential units, an elementary school and parks and is adjacent to the SPW development which contains commercial centers. This variety of uses will help support this concept.
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.** Pedestrian traffic is encouraged by the proximity of commercial centers and bike paths will be provided within the proposed development.
Villages	**Principle 2**: Pursue more land-efficient forms of development by investing in transit solutions that support compact and walkable villages.	**Consistent.** Pedestrian traffic will be encouraged within the development by the proximity of commercial centers, schools, and parks.
Villages	**Principle 4:** Provide services to maximize sustainability and thereby reduce external trips and reliance on the automobile.	**Consistent.** Pedestrian traffic and transit use will be encouraged within the development by the proximity of commercial centers, schools, and parks.
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 proposed project intends to extend water and sewer infrastructure from existing facilities along Trinity Parkway. 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.

Goals and Policies (Proposed 2035 GP)	Goal and Policy Number	Consistency Statement
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 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. Best Management Practices will be implemented to prevent degradation of nearby waterways. The proposed wetland design will improve water quality.
Interconnected Infrastructure	**Concept 7: Recreation and Waterways** 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.	**Consistent.** The proposed project incorporates a trail system on the levees surrounding the project. In addition, local parks are connected through the use of linear walkways and the WAPA easement that is integrated in the middle of the development and provides recreation and open space.
Transportation and Circulation - Guiding Principles	**Principle 1:** Provide a land use and transit plan that promotes choices in travel modes.	**Consistent.** Pedestrian traffic and transit use will be encouraged within the development by the proximity of commercial centers, schools, and parks. The Preserve project includes bike paths and transit overhangs at bus stops.
Transportation and Circulation	**Principle 2:** Emphasize pedestrian and bicyclist accessibility and comfort in the planning of ALL villages and districts.	**Consistent.** Pedestrian traffic and transit use will be encouraged within and around the development by the proximity of commercial centers, schools, and parks.
Transportation and Circulation	**Principle 6:** Emphasize neighborhood traffic management concepts in the planning of all district and villages.	**Consistent.** A fundamental objective of The Preserve project is to provide an orderly hierarchy of roadways to meet the transportation demands generated by the project. Efficient movement of people and goods between developments will be

Goals and Policies (Proposed 2035 GP)	Goal and Policy Number	Consistency Statement
		facilitated.
Public Facilities - Guiding Principles	**Principle 1**: Distribute new facilities and services to serve Stockton's residents, and institutional and private sector partners.	**Consistent.** The Preserve project includes residential units, an elementary school, open space, and parks.
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 proposed project includes plans for an elementary school. This facility will be open to the public for use as a community center.
Public Facilities	**Principle 4:** Have high expectations for the design and quality of community facilities as visible and accessible places.	**Consistent.** An objective of the project is to provide sound urban development while also providing flexibility in the design concepts. All of the design concepts and guidelines are intended to promote aesthetically pleasing and environmentally sound planning development concepts
Recreation and Waterways - Guiding Principles	**Principle 3:** Use waterways as recreational and visual amenities for villages and districts.	**Consistent**. The Preserve incorporates the waterways as a trail system on the levees providing connections to other recreation and park areas within the development.
Recreation and Waterways	**Principle 7:** Encourage the provision of landscaped arterials.	**Consistent.** Otto Drive, a major arterial, runs through the proposed project. The project applicant has designed a landscaped median strip for this roadway.
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	**Concept 2: Air Quality**	**Consistent.** The Preserve development includes

Goals and Policies (Proposed 2035 GP)	Goal and Policy Number	Consistency Statement
Services/Resources	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.	residential units, an elementary school, parks and open spaces. Pedestrian traffic and transit use are encouraged by the proximity of these amenities and commercial centers in adjacent SPW, and major arterial roadways such as Otto Drive will provide transit opportunities. Bus stops and bikeways are also planned. Mitigation proposed in Section 4.2, Air Quality, will help reduce air emissions.
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**. The applicant will be required to pay development fees to assist in providing adequate police and fire protection services.
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**. Any impacts to natural or cultural resources will require mitigation as identified through regulatory permitting, if necessary. Additionally, the NPDES permit will require Best Management Practices to protect water quality.
Natural and Cultural Resources - Guiding Principles	**Principle 1**: Design and plan new development to reduce impacts to natural and cultural resources.	**Consistent**. Any impacts to natural or cultural resources will require mitigation as identified through regulatory permitting, if necessary. Additionally, the NPDES permit will require Best Management Practices to protect water quality. Special consideration will be taken to preserve the adjacent levees, a significant natural resource.
Natural and Cultural Resources	**Principle 2:** Continually identify significant cultural resources to ensure their preservation and maintain the heritage of Stockton.	**Consistent**. The site has been surveyed for cultural resources. A Cultural Resources Study is available for review at the City of Stockton Community Development Department. Although no cultural resources were found on the project

Goals and Policies (Proposed 2035 GP)	Goal and Policy Number	Consistency Statement
		site, mitigation proposed in Section 4.13, Cultural Resources, will help reduce impacts to any unknown cultural resources that may be found.
Natural and Cultural Resources	**Principle 3:** Promote compact development to reduce land requirements.	**Consistent.** The proposed project is surrounded on three sides by Bear Creek and Mosher Slough. Trinity Parkway borders the development to the east. Therefore, the project is designed as a compact residential development.
Natural and Cultural Resources	**Principle 4:** Support the continued preservation of productive agricultural land.	**Inconsistent**. The project requires the conversion of productive agricultural land.
Land Use – Goals & Policies	**Goal 1**: To ensure that 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 project site lies within Stockton City Limits and within the Urban Service Area.
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**. The project site lies within Stockton City Limits and within the Urban Service Area.
Land Use	**Goal 1, Policy 6: Building Intensity and Population Density.** The Cit y 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**. To regulate building intensity and population density, the project will be developed in accordance with the City's Land Use Element and Development Code.
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.** The proposed project will be developed adjacent to other residential developments. The proposed project is adjacent to agricultural land. The Stockton Municipal Code Agricultural Preservation section (Right to Farm) (16-310.040) requires the landowner of land converted from agricultural to urban uses to report a deed restriction waiving any right to complain

Goals and Policies (Proposed 2035 GP)	Goal and Policy Number	Consistency Statement
		about or file any action concerning farming operations and practices. This waiver shall provide notice of potential conflicts or effects of typical agricultural activities and minimize potential impact. It is not expected that there will be any land use conflicts associated with The Preserve.
Land Use	**Goal 1, Policy 11: Safe Development.** The City shall limit urban growth in areas with hazardous nuisance conditions such as noise, flooding or unstable soils.	**Consistent.** Extensive improvements have occurred to levee structures surrounding the project area. In addition, a separate project to improve the levee system has been implemented. 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. Section 4.5, Noise, assesses the noise impacts of the proposed project.
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 proposed project includes residential uses as well as an elementary school. The project is also adjacent to SPW which includes commercial centers. This proximity to a variety of facilities will minimize the distance for commuting.
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.	**Consistent.** The project lies within Stockton City Limits and with the Urban Service Area.
Land Use	**Goal 2, Policy 1: Agriculture Land Preservation**. The City shall limit the wasteful and inefficient sprawl of urban uses into	**Consistent.** Although the project area is currently used for agricultural purposes, it does lie within

Goals and Policies (Proposed 2035 GP)	Goal and Policy Number	Consistency Statement
	agriculture land.	City Limits and is currently zoned for residential and commercial 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.	**Consistent.** The project lies within the Urban Service Boundary and will convert approximately 300 acres of productive agricultural lands to urban uses. However, the project site is zoned for residential uses and designated as residential in the City General Plan.
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**. Single family residential, cluster residential and condominiums are proposed.
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 proposed project includes both single family and multi family residential uses.
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 project will provide open space, onsite parks, and private yards.
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 proposed project is adjacent to other residential developments and agricultural land. No land use conflicts are expected with The Preserve development.
Land Use	**Goal 4:** To encourage commercial facilities at locations that provide convenient service where their economic viability can be sustained.	**Consistent.** The proposed project area is located near SPW which contains a commercial business park/retail center.
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 proposed project is a residential development. Nearby SPW business park/retail center will be easily accessible by Preserve residents.
Land Use	**Goal 5, Policy 5: Compatible Land Use**.	**Consistent.** The proposed project is not expected

Goals and Policies (Proposed 2035 GP)	Goal and Policy Number	Consistency Statement
	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.	to experience compatibility issues with industrial activities since none exist adjacent to the project site.
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**. The project will develop single family residential, cluster residential, and condominium residents. The proximity of commercial centers will provide employment opportunities for The Preserve.
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 project site is accessible from Otto Drive and Trinity Parkway (with convenient access to I-5), providing access to services, businesses, and recreation.
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 blighting conditions, and are compatible with surrounding land uses.	**Consistent**. Adequate services will be available to the project site and no land use compatibility issues are expected. Section 4.5, Noise, assesses the noise impacts of the proposed project.
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 project will provide single family residential, cluster residential, and condominium units at a variety of costs.
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**. The proposed project will consist of low to medium density residential uses including single family residential, cluster residential, and condominiums.
Housing Element	**Goal 5**: Promote housing opportunities for all residents and support the elimination of discrimination in housing.	**Consistent**. The proposed project will consist of low to medium density residential uses including single family residential, cluster residential, and condominiums.
Housing Element	**Goal 5, Policy 3: Housing Size and Affordability**. The City shall encourage the provision of housing units to meet the needs of	**Consistent**. The proposed project will consist of low to medium density residential uses including

Goals and Policies (Proposed 2035 GP)	Goal and Policy Number	Consistency Statement
	families of all sizes affordable to all income levels.	single family residential, cluster residential, and condominiums at a variety of costs.
Housing Element	**Goal 6:** Promote energy conservation in Stockton's housing developments.	**Consistent.** Residential uses will be constructed with the newest energy conservation policies and available equipment.
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.** The proposed project is adjacent to agricultural land to the west and south. Open space between the project and agricultural land will help transition between developed and rural areas. In addition, sound walls will create a distinctive transition between agricultural and residential areas.
Community Design	**Goal 4:** To create new districts and neighborhoods with a sense of place.	**Consistent.** An objective of the project is to provide sound urban development. All of the design concepts and guidelines are intended to promote aesthetically pleasing development concepts.
Community Design	**Goal 4, Policy 3: District Gateways.** The City shall require that districts and villages include a deliberate gateway and entrance design that is inviting, attracting and complementary to the overall design of the district or village.	**Consistent.** The Master Development plan for the proposed project provides landscaping and entry treatments into the residential development that are aesthetically pleasing and will promote a positive image for the City.
Community Design	**Goal 6, Policy 2: Streetscape.** The City shall require that every roadway project include sidewalks and planting strips sized for canopy trees.	**Consistent.** The Master Development plan for the proposed project will provide landscaping treatments for all residential roadways.
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 Trinity Parkway and Otto Drive. However, the Otto Drive extension to Shima Tract is not expected as the first houses are constructed. Emergency vehicle access (EVA) will be provided along Trinity Parkway as a way to mitigate this short-term issue.

Goals and Policies (Proposed 2035 GP)	Goal and Policy Number	Consistency Statement
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.** 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 6: Efficient Traffic Flow**. The City shall ensure that highways and arterial street 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.** 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: Interneighborhood 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.** A fundamental objective of the proposed project is to provide an orderly hierarchy of roadways to meet the transportation demands generated by the project.
Transportation and Circulation	**Goal 2, Policy 11: Neighborhood Street Design** The City shall ensure that neighborhood streets are designed to discourage through traffic and excessive speeds.	**Consistent.** Neighborhood roadways will include traffic calming features to ensure that neighborhoods are safe and quite.
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.** A fundamental objective of the proposed project is to provide an orderly hierarchy of roadways to meet the transportation demands generated by the 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	**Consistent.** The Master Development Plan includes standards, design guidelines, and concepts to ensure that off-street parking will

Goals and Policies (Proposed 2035 GP)	Goal and Policy Number	Consistency Statement
	use compatibility.	adequately accommodate the parking demand generated by the proposed residential 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 includes provisions for bus parking areas, turnouts, and shelters. The design and location of these facilities will be approved by the Director of Public Works 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 consists of residential units, an elementary school, parks, and open space. Nearby SPW includes commercial centers. The proximity of these services promote pedestrian traffic. Additionally, the Master Development Plan includes provisions for crosswalks and other pedestrian safety measures.
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 project applicant has provided bike lanes on major streets within the proposed development.
Public Facilities and Services - Goals & Policies	**Goal 1, Policy 4: Development Impacts to Existing Infrastructure** The City shall ensure that 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.** The proposed project site is located within the City's Urban Service Boundary. All infrastructure and utilities will be extended from adjacent developments.
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 public facilities (e.g. sewer, streets, water parks and recreation, police and fire, library, general government).	**Consistent.** The project applicant will pay all required developer fees and public facility fees to ensure accessibility to adequate public facilities.
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 project site is located within the City's Urban Service Boundary. Municipal services will be extended to the project site. The City's water, sewer, and storm water Master Plans will be updated to ensure that adequate capacity is

Goals and Policies (Proposed 2035 GP)	Goal and Policy Number	Consistency Statement
		available.
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 and other sources of major water use have been designed with the most current water conservation policies and available equipment. A non-potable water system has been designed including a wetland area that reclaims project runoff that will be used for landscape irrigation purposes.
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.	**Consistent.** The project site is located within the City's Urban Service Boundary. Municipal services will be extended to the project site. The City's water, sewer, and storm water Master Plans will be updated to ensure that adequate capacity is available. A Water Supply Assessment was prepared by the City for the project, indicating adequate water supply once the Delta Water Supply Project is complete.
Public Facilities and Services	**Goal 3:** To ensure adequate wastewater collection and treatment, and safe disposal of waste.	**Consistent.** The project will tie into the City's sanitary sewer system. The proposed project is not expected to create exceedances of the City's RWQCB wastewater discharge requirements. The proposed wetlands will serve to collect stormwater and improve water quality.
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.** The project will tie into the City's sanitary sewer system. The proposed project is not expected to create exceedances of the City's RWQCB wastewater discharge requirements.
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

Goals and Policies (Proposed 2035 GP)	Goal and Policy Number	Consistency Statement
		commencement of construction activities, the contractor will provide proof of a SWPPP.
Public Facilities and Services	**Goal 4, Policy 1: Creek and Slough Capacity** 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; -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.	**Consistent.** The proposed project will include hydraulic analysis of the drainage facilities. Key objectives of this analysis will include demonstrating that off-site drainage and hydrology will not be impacted by the proposed development, and providing a storm water treatment system for the runoff.
Public Facilities and Services	**Goal 4, Policy 2: Watershed Drainage Plan** 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.	**Consistent.** The applicant will prepare a Drainage Master Plan and Hydrology Study prior to construction of the proposed project. Project site improvements will include storm water treatment, and a pump station to lift flood waters over/through the levee. These objectives can be achieved through an integrated "recirculating" wetlands system and storm water pump station.
Public Facilities and Services	**Goal 4, Policy 5: Public Facilities Fees** 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.	**Consistent.** The applicant will be required to pay development fees to assist in providing adequate stormwater system operation.
Public Facilities and Services	**Goal 5:** To ensure the safe and efficient disposal or recycling of solid waste.	**Consistent.** It is not expected that the proposed project will exceed capacities of County landfills. The City of Stockton has a comprehensive waste collection system designed to reduce the amount of trash going to landfills. This system includes curbside collection of recyclables, green/food waste, and trash. Implementation of this program within The Preserve will ensure efficient disposal of waste.

Goals and Policies (Proposed 2035 GP)	Goal and Policy Number	Consistency Statement
Public Facilities and Services	**Goal 5, Policy 1: Solid Waste Reduction** 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.	**Consistent.** The City of Stockton has a comprehensive waste collection system designed to reduce the amount of trash going to landfills. This system includes curbside collection of recyclables, green/food waste, and trash. Implementation of this program within The Preserve will ensure efficient disposal of waste.
Public Facilities and Services	**Goal 5, Policy 7: Development Requirements** The City shall ensure that all new development has appropriate provisions for solid waste storage, handling and collection pickup.	**Consistent.** It is not expected that the proposed project will exceed capacities of County landfills. The City of Stockton has a comprehensive waste collection system designed to reduce the amount of trash going to landfills. This system includes curbside collection of recyclables, green/food waste, and trash. Implementation of this program within The Preserve will ensure efficient disposal of waste. Solid waste providers that will serve the project are listed in Section 4.9.
Public Facilities and Services	**Goal 7:** To provide protection to the public through effective law enforcement and the incorporation of crime prevention features into new development.	**Consistent.** The applicant will be required to pay development fees to assist in providing adequate police protection services.
Public Facilities and Services	**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.	**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.
Public Facilities and Services	**Goal 8:** To provide protection to the public through effective fire protection services and the incorporation of fire safety features in new development.	**Consistent.** The applicant will be required to pay development fees to assist in providing adequate fire protection services.
Public Facilities and Services	**Goal 8, Policy 6: Adequate Emergency Access and Routes** The City shall require that new development provide adequate access for	**Consistent.** To ensure that the entire development has adequate emergency access, the City of

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	emergency vehicles, particularly firefighting equipment, as well as provide evacuation routes.	Stockton's Fire Department will review and approve the project plan.
Public Facilities and Services	**Goal 9:** To ensure that adequate school facilities are available to meet the needs of City residents.	**Consistent.** Coordination with the Lodi Unified School District will ensure proper capacity and placement of the planned elementary school. Existing middle and high schools in the area may have trouble accommodating students from the proposed project as many are already operating over capacity. However, development fees will be paid to offset this impact.
Public Facilities and Services	**Goal 10, Policy 1:** The City shall require that all new residential areas, industrial areas, and business parks be wired for new information technologies.	**Consistent.** The proposed project will be adequately served with technologies such as telephone, fiber optics, and cable television by companies identified in the Master Development Plan.
Public Facilities and Services	**Goal 11, Policy 1: Library Standards.** 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: a. 0.75 square feet of library space per person (750 sf per 1,000 persons) with 5 reader's seats per 1,000 persons. b. 4.15 books per 1,000 persons. c. a minimum of 2,000 audio and video recordings per branch library. d. a minimum of 10 titles of magazine and newspaper subscriptions per 1,000 persons.	**Consistent.** Developer impact fees will be used to pay the fair share requirements for library services.
Recreation and Waterways – Goals & Policies	**Goal 1:** 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.	**Consistent.** A variety of recreational facilities will be included within the development. Several neighborhood parks, an open space recreational area and levee system pedestrian and bike trails are proposed for the project.
Recreation and Waterways	**Goal 2, Policy 5: Stormwater Detention Basins for Recreational Uses** The City shall require, wherever feasible, that stormwater detention basins be	**Consistent.** The proposed project includes a wetland area which will act as a detention basin

Goals and Policies (Proposed 2035 GP)	Goal and Policy Number	Consistency Statement
	designed for recreational uses.	for stormwater, as well as serving recreational purposes.
Recreation and Waterways	**Goal 2, Policy 7: Design of Community Parks** 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.	**Consistent.** A variety of parks and recreational facilities will be included within the development. Several neighborhood parks, a 28.98 acre WAPA facility, and trails are proposed for the project.
Recreation and Waterways	**Goal 3, Policy 1: Community Center Standards** The City shall ensure that community centers are provided at a level that meets the following standards; -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.	**Consistent.** Private and public recreational areas are included in the proposed project. In light of the fact that some of these facilities 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 proposed elementary school could serve as a community center as this facility will be open to the general public. The City's General Plan includes provisions to include all schools as meeting the requirement for community centers.
Recreation and Waterways	**Goal 3, Policy 3: Development of Bikeways and Trails** 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).	**Consistent.** The project applicant has provided bike lanes on major streets and trails along surrounding levees within the proposed development.
Recreation and Waterways	**Goal 3, Policy 5: Acquisition of Open Space** The City should encourage developers to allocate privately developable and publicly accessible open space. However, the open space allocated will not be credited towards recreation standards identified in Policy RW-2.1.	**Consistent.** A variety of open space types will be included within the development. Several neighborhood parks, a 13.10 acre WAPA easement which includes a 12.51 park area and trails on the levee system will be provided.
Recreation and	**Goal 3, Policy 6: Development of Utility Easements for Open Space**	**Consistent.** The proposed project includes open

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Waterways	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.	space, including a wetland easement area that will be used for stormwater storage and pump stations.
Health and Safety	**Goal 2, Policy 3: Protect Residential Areas** The City shall ensure that exterior noise levels for existing and future dwellings in residential areas do not exceed exterior noise levels of 60 dBA CNEL and interior noise levels of 45 dBA CNEL.	**Consistent.** Section 4.5, Noise, assesses the noise impacts of the proposed project. Noise levels in the area are not expected to exceed City recommended levels.
Health and Safety	**Goal 2, Policy 6: Mitigating Highway Noise** The City will work with Caltrans to mitigate noise impacts on sensitive receptors near Interstate 5, State Route 99, and other key state roadways.	**Consistent.** Interstate 5 is located on the east side of the project and runs north northwest and south southeast. Interstate 5 is less than 600 feet away from the northeast corner of the project site and is less than 1,200 feet away from the southeast corner of the project site.
Health and Safety	**Goal 2, Policy 12: Limiting Construction Activities** 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.	**Consistent.** Construction activities for the proposed project will be limited to the days and hours approved by the City.
Health and Safety	**Goal 2, Policy 13: Sound Attenuation Features** 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.	**Consistent.** Section 4.5, Noise, lists the mitigation measures for the proposed project in detail. As indicated, noise attenuation is required along Trinity Parkway and Otto Drive within the limits of The Preserve project. For the Trinity Parkway segment, the relocated dryland levee will provide adequate attenuation for adjacent residents. Along Otto Drive (west of Trinity Parkway), a 10-foot noise barrier will be required.
Health and Safety	**Goal 2, Policy 19: Commercial Uses** The City shall ensure that noise produce by commercial uses shall not exceed 75 dB Ldn/CNEL at the nearest property line.	**Consistent.** Commercial uses are not proposed as part of The Preserve project.
Health and Safety	**Goal 3, Policy 1: Seismic Safety of Structures and Public Facilities** The City shall require that new structures intended for human occupancy,	**Consistent.** A geotechnical report has been completed for the proposed project area. Risk of

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	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.	ground shaking and other seismic safety hazards are not considered significant. However, all structures will be built according to building code requirements to ensure the safety of the project's residents.
Health and Safety	**Goal 3, Policy 2: Development in Areas Subject to Geologic Hazards**. The City shall discourage incompatible land uses from being located in areas subject to geologic or seismic hazards (e.g., expansive, liquefaction, etc.).	**Consistent.** A geotechnical report has been completed for the proposed project area. Although the site does include expansive soils, the report includes a variety of recommendations to safely build on such soils. These recommendations will be used by the developer.
Health and Safety	**Goal 3, Policy 3: Uniform Building Code** 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.	**Consistent.** All structures associated with the project will be built according to the seismic requirements of the Uniform Building Code.
Health and Safety	**Goal 4:** To improve air quality and to minimize the adverse effects of air pollution on human health and the economy.	**Consistent.** Section 4.3, Air Quality, assesses the local and regional air quality impacts of the proposed project.
Health and Safety	**Goal 4, Policy 1: Cooperation with Local and Regional Agencies** The City shall cooperate with other local and regional and State agencies in developing and implementing air quality plans to achieve State and Federal Ambient Air Quality Standards.	**Consistent.** Section 4.3, Air Quality, assesses the local and regional air quality impacts of the proposed project.
Health and Safety	**Goal 4, Policy 7: Air Quality Mitigation** The City shall require projects to comply with the City's adopted air quality impact assessment and mitigation process.	**Consistent.** Section 4.3, Air Quality, assesses the local and regional air quality impacts of the proposed project. The proposed project will comply with applicable air quality requirements and mitigation measures.
Health and Safety	**Goal 4, Policy 9: Dust Suppression Measures** 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: a. Site watering or application of dust suppressants,	**Consistent.** Section 4.3, Air Quality, assess the impacts of dust during construction. Mitigation measures in this section include dust suppression measures that will comply with City requirements.

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	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.	
Health and Safety	**Goal 5:** To protect City residents and property from the risks involved in the transport, distribution, use, and storage of hazardous materials.	**Consistent.** Although there are no identified areas containing hazardous materials within the project area, Section 4.14, Hazardous Materials/Wastes, assesses and provides mitigation measures for potential hazardous waste impacts.
Health and Safety	**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.	**Consistent.** A hazardous waste contingency plan for construction will be utilized during the construction of the proposed project.
Health and Safety	**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.	**Consistent.** Previous improvements to levee structures and channels in the area have resolved local flooding issues from 100-year flood plain constraints.
Health and Safety	**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.	**Consistent.** Escape routes from the project area include one project entrance/exit and one emergency vehicle access point along Trinity Parkway and one entrance/exit on the west side of the project area from Otto Drive.
Health and Safety	**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.	**Consistent.** The City's minimum road widths and clearances were considered and enforced in the design of The Preserve.
Youth and Education – Goals & Policies	**Goal 3, Policy 5: Educational and Child Care Facilities** The City shall consider the need for educational facilities and childcare created by new residential and commercial development projects.	**Consistent.** Coordination with the Lodi Unified School District will ensure proper capacity and placement of the planned elementary school. Existing middle and high schools will adequately serve the proposed project.
Natural and Cultural	**Goal 1, Policy 1: Protect Natural Resources**	**Consistent.** Section 4.4, Biological Resources,

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Resources – Goals & Policies	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.	provides mitigation measures to reduce impacts to natural resource areas and fish and wildlife habitats.
Natural and Cultural Resources	**Goal 1, Policy 2: Establish Buffer Areas** The City shall encourage the use of open space or recreational buffers between incompatible land uses.	**Consistent.** The proposed project includes an open space/trail system utilizing adjacent levees as a buffer between agricultural and residential land uses.
Natural and Cultural Resources	**Goal 1, Policy 3: Preserve Open Space** The City shall promote contiguous and compact development to preserve open space land.	**Consistent.** The proposed project is adjacent to a wetland preserve area to the north and the Twin Creeks development to the east. To the west and south is Mosher Slough, providing additional open space.
Natural and Cultural Resources	**Goal 1, Policy 5: Recreational Areas** 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.	**Consistent.** The Preserve is utilizing the levee system and promoting its use as recreational opportunities to the Delta by providing a trail and bike path system on the levee.
Natural and Cultural Resources	**Goal 2**: To preserve and protect sensitive habitats and species in the Planning Area and the Sacramento-San Joaquin Delta.	**Consistent.** Section 4.4, Biological Resources, provides mitigation measures to reduce impacts to natural resource areas and sensitive habitats to prevent significant impacts.
Natural and Cultural Resources	**Goal 2, Policy 6: New Development in Sensitive Areas** 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.	**Inconsistent.** The project site does have the potential to contain sensitive habitat and development will require implementation of the SJMSCP.
Natural and Cultural Resources	**Goal 2, Policy 12: Requirements for Biological Studies** 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.	**Consistent.** Biological studies have been conducted onsite and Section 4.4, Biological Resources, provides mitigation measures to reduce impacts to natural resource areas and sensitive habitats.

Goals and Policies (Proposed 2035 GP)	Goal and Policy Number	Consistency Statement
Natural and Cultural Resources	**Goal 3:** To encourage the identification, protection, and enhancement of the city's archaeological, historical, and paleontological resources for their cultural values.	**Consistent.** No cultural, historical, or paleontological resources are present in the project area.
Natural and Cultural Resources	**Goal 3, Policy 5: Archaeological Resources** 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).	**Consistent.** An archaeological records search, field survey, and technical report were prepared for the project site. No resources were found in the project area but mitigation is included in the event such resources are found once construction commences.
Natural and Cultural Resources	**Goal 3, Policy 6: Discovery of Archaeological Resources** In the event that 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.	**Consistent.** A cultural resources report was prepared for the proposed project. This report outlines criteria that satisfies accidental discovery of archaeological resources.
Natural and Cultural Resources	**Goal 4, Policy 2: Right to Farm Ordinance** The City will continually review its right to farm ordinance to insure its compatibility with the County's ordinance and promote the protection of farming operations through disclosure to all prospective buyers.	**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 Resources	**Goal 5, Policy 1: Soil Conservation for Agriculture** The City shall encourage the conservation of agricultural soils to provide a base for agricultural productivity and the city's economy.	**Inconsistent.** The project will convert approximately 300 acres of farmland to urban uses.
Natural and Cultural Resources	**Goal 5, Policy 3: Soil Erosion** The City shall encourage the implementation of measures to minimize soil erosion from wind and water related to the construction of new development.	**Consistent.** Section 4.1, Geophysical Resources, assess the impacts of soil erosion during construction. Mitigation measures are provided in

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		this section to reduce impacts on soil.

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 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 new transportation policies, including new service level thresholds, being considered in the City of Stockton *2035 General Plan Update* analysis as well as new land use designations and future roadway facilities. 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 vicinity of the project site so it is not included in this section. The study intersections are identified, as are the analysis scenarios. The methods used to evaluate intersection and freeway segment operations are discussed, followed by their existing operational characteristics. Existing plus Approved Projects and Future (2025 and 2035) without project conditions are also discussed.

a. Roadway System

The project site is located south of Bear Creek, and west of Interstate 5 (I-5) and the Twin Creeks Estates Neighborhood. An extension of Otto Drive would bisect the project site. The roadways in the study area are described below and their locations in relation to the site are shown on **Figure 4.7.1** (All figures are provided at the end of this section). The locations of the study intersections are also shown on **Figure 4.7.1**.

Interstate 5 (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 Hammer Lane and Eight Mile Road. Three mixed-flow lanes are provided in each direction on I-5 in the vicinity of the project site.

Hammer Lane is a four to six-lane, east-west arterial that extends from west of I-5 to east of SR 99. The posted speed limit ranges between 35 and 45 miles per hour (mph). Bike lanes are provided west of Kelley Drive and east of Thornton Road. Sidewalks are generally provided along Hammer Lane. This roadway serves commercial and residential development.

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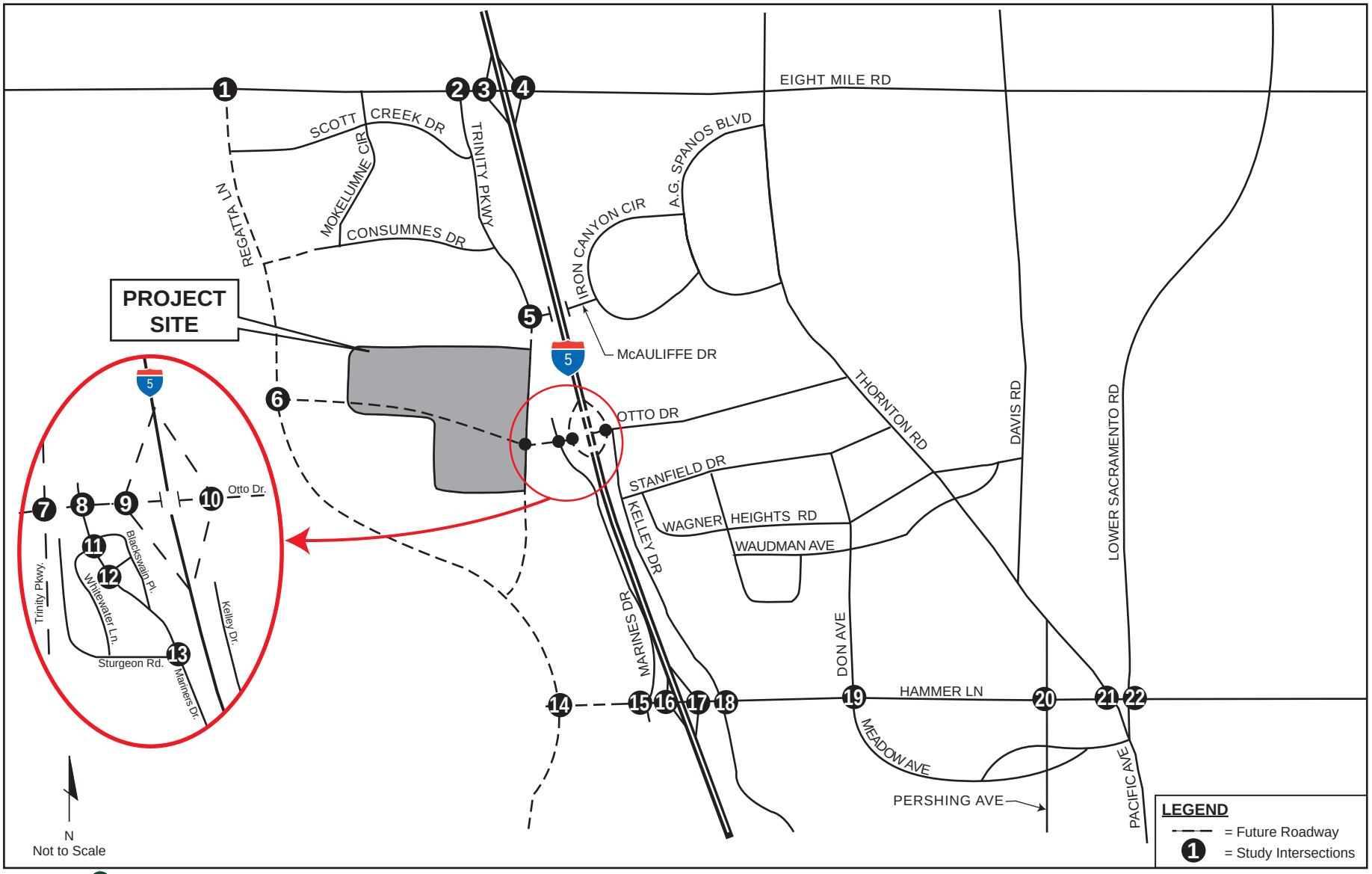

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PROJECT SITE AND STUDY INTERSECTION LOCATIONS

FIGURE 4.7-1

Mariners Drive is a two-lane north-south collector that serves residential development north and south of Hammer Lane. Upon completion of the Trinity Parkway/Trinity Parkway extension over Bear Creek, Mariners Drive, via Otto Drive and Trinity Parkway/Trinity Parkway would connect Eight Mile Road to Hammer Lane. Sidewalks are provided along both sides of Mariners Drive. South of Sturgeon Road, the speed limit on Mariners Drive is 40 mph. North of Sturgeon Road the speed limit is reduced to 35 mph.

Otto Drive is a two-lane east-west discontinuous collector street. East of I-5, Otto Drive connects Thornton Road to Bancroft Way. West of I-5, Otto Drive is closed to traffic. Otto Drive would connect Mariners Drive to Trinity Parkway upon completion of the Trinity Parkway/Trinity Parkway extension over Bear Creek. An interchange with I-5 is also planned at Otto Drive.

McAuliffe Drive is an east-west two-lane roadway that connects Trinity Parkway to Iron Canyon Circle and the Spanos Park East residential neighborhood via an under crossing of I-5.

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~~**Figure 4.7.1: Study Area and Study Intersection Locations**~~

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 Park West Place. 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.

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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 calls for up to eight lanes on Eight Mile Road east of I-5, and between two and eight lanes west of I-5. As this facility is improved, sidewalks and bicycle facilities are incorporated into the roadway cross section.

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 45miles per hour (mph) along the roadway. Sidewalks are provided along improved sections of Thornton Road throughout the study area.

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.

Kelley Drive is a two-lane north-south collector which extends from Plymouth Road to Salters Drive and intersects with Hammer Lane. The roadway serves mostly residential development except at the Hammer Lane/Kelley Drive intersection where there is commercial development. Sidewalks are provided throughout the length of the roadway and the posted speed limit is 30 mph.

Meadow Avenue/Don Avenue is a two-lane north-south roadway that connects Pershing Avenue to residential uses north of Hammer Lane. This roadway is called Meadow Avenue south of Hammer Lane and is a designated collector roadway. The roadway continues as Don Avenue, a local street, north of Hammer Lane. The posted speed limit on these facilities is 35 mph.

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Pershing Avenue is a two to four-lane north-south arterial which extends from I-5 in the south near Downtown Stockton to Thornton Road in the north. Residential access is provided from Pershing Avenue in the study area with a posted speed limit of 35 mph.

Blackswain Place, Sturgeon Road and *Whitewater Lane* are residential streets that intersect Mariners Drive within the Twin Creeks Estates neighborhood.

Regatta Lane is planned to be constructed as the surrounding area is developed. Regatta Lane is planned within the Westlake at Spanos Park West community and would be a north/south four lane facility with sidewalks and bicycle lanes. The roadway would intersect with Eight Mile Road in the north. To the south, it is planned to continue over the Pixley Slough connecting to Trinity Parkway and Hammer Lane.

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b. Bicycle and Pedestrian Facilities

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Within the study area, pedestrian facilities are provided along improved portions of roadways including: Mariners Drive, Otto Drive, Hammer Lane and Trinity Parkway. 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 (from the City's *Bicycle Master Plan)* 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).

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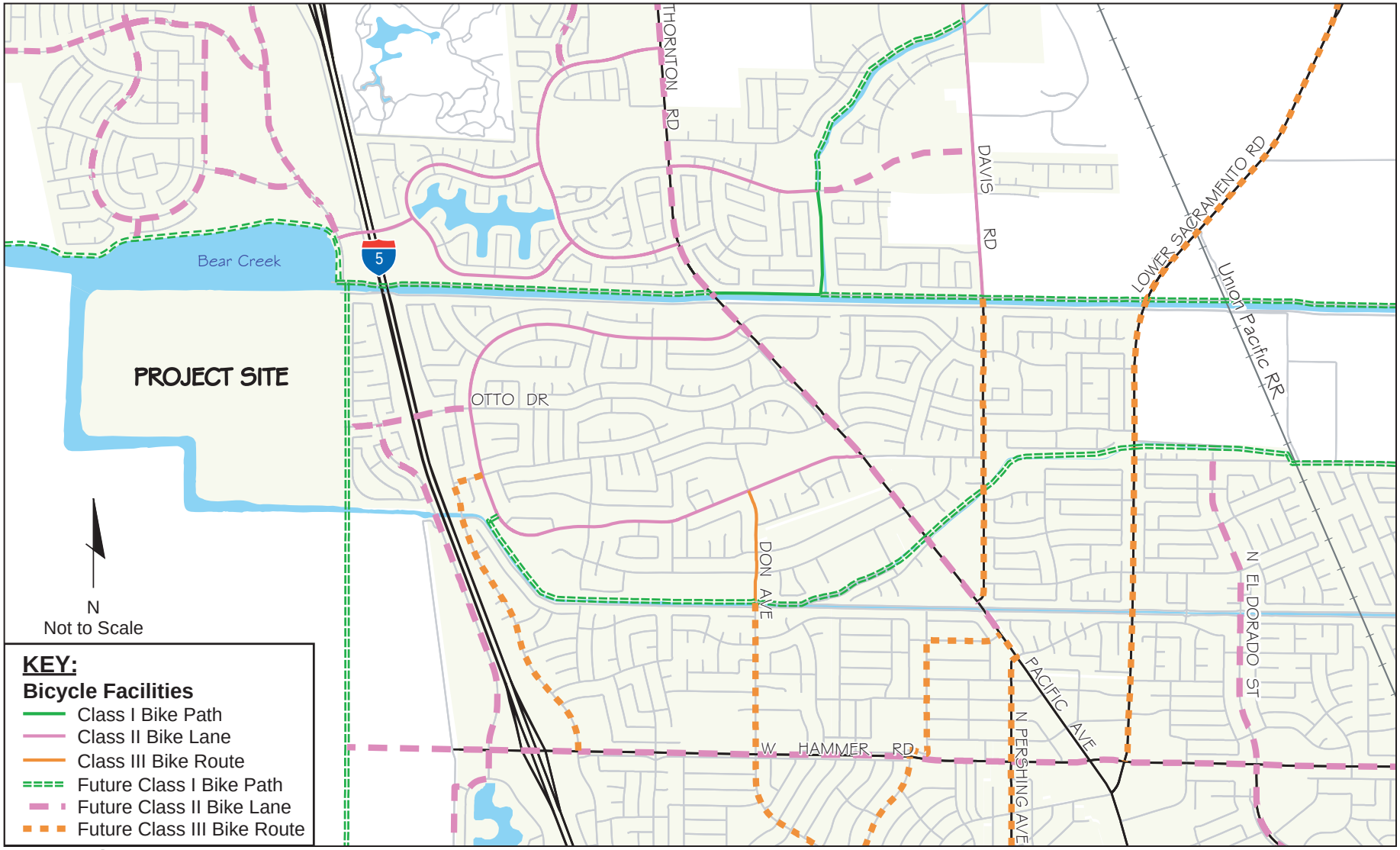

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EXISTING AND FUTURE BICYCLE NETWORK

FIGURE 4.7-2

c. Key Intersections and Freeway Segments

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Project impacts on the study area roadway facilities were determined by measuring the effect project traffic would have on operations of key intersections and freeway segments during the morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak periods. The following locations were selected for evaluation, as shown on Figure 4.7.1:

Study Intersections

1. Eight Mile Road/Regatta Lane
2. Eight Mile Road/Trinity Parkway
3. Eight Mile Road/I-5 Southbound Ramps
4. Eight Mile Road/I-5 Northbound Ramps
5. McAuliffe Drive/Trinity Parkway
6. Otto Drive/Regatta Lane (2035 analysis only)
7. Otto Drive/Trinity Parkway
8. Otto Drive/Mariners Drive
9. Otto Drive/I-5 Southbound Ramps (2025 and 2035 analysis)
10. Otto Drive/I-5 Northbound Ramps (2025 and 2035 analysis)
11. Mariners Drive/Whitewater Lane
12. Mariners Drive/Blackswain Place
13. Mariners Drive/Sturgeon Road
14. Hammer Lane/Trinity Parkway (2025 and 2035 analysis)
15. Hammer Lane/Mariners Drive
16. Hammer Lane/I-5 Southbound Ramps
17. Hammer Lane/I-5 Northbound Ramps
18. Hammer Lane/Kelley Drive
19. Hammer Lane/Meadow Avenue/Don Avenue
20. Hammer Lane/Pershing Avenue
21. Hammer Lane/Thornton Road
22. Hammer Lane/Lower Sacramento Road

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)

d. Analysis Scenarios

The following scenarios were evaluated for this study:

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- **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 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 including Park West Place, Westlake at Spanos Park West and other pending developments in the area.
- **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.

e. 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, and Hammer Lane/Kelly

Drive 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*. The closely spaced intersections were evaluated using Synchro 6.0 to better account for the interrelationship of the closely-spaced signals on their operations.

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 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 the intersection as a whole, each stop-controlled movement, and for the left-turn movement from the major street. The intersection average delay and highest movement/ approach delay are reported for side-street stop-controlled intersections.

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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.

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 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.C summarizes the relationship between vehicle density and LOS for mainline freeway segments.

Table 4.7.C: Freeway Mainline LOS Definitions

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

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LOS	DESCRIPTION	DENSITY RANGE (PASSENGER CARS PER MILE PER LANE)
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.

Traffic Signal Warrant Analysis: The peak hour volume and delay signal warrant 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.

f. Existing Traffic Volumes

Intersection turning movement counts were conducted in Spring 2005 at the study intersections during the AM (7:00 to 9:00 AM) and PM (4:00 to 6:00 PM) peak periods. These 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 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 indicate that the predominant travel direction on I-5 is southbound during the AM peak hour and northbound during the PM peak hour.

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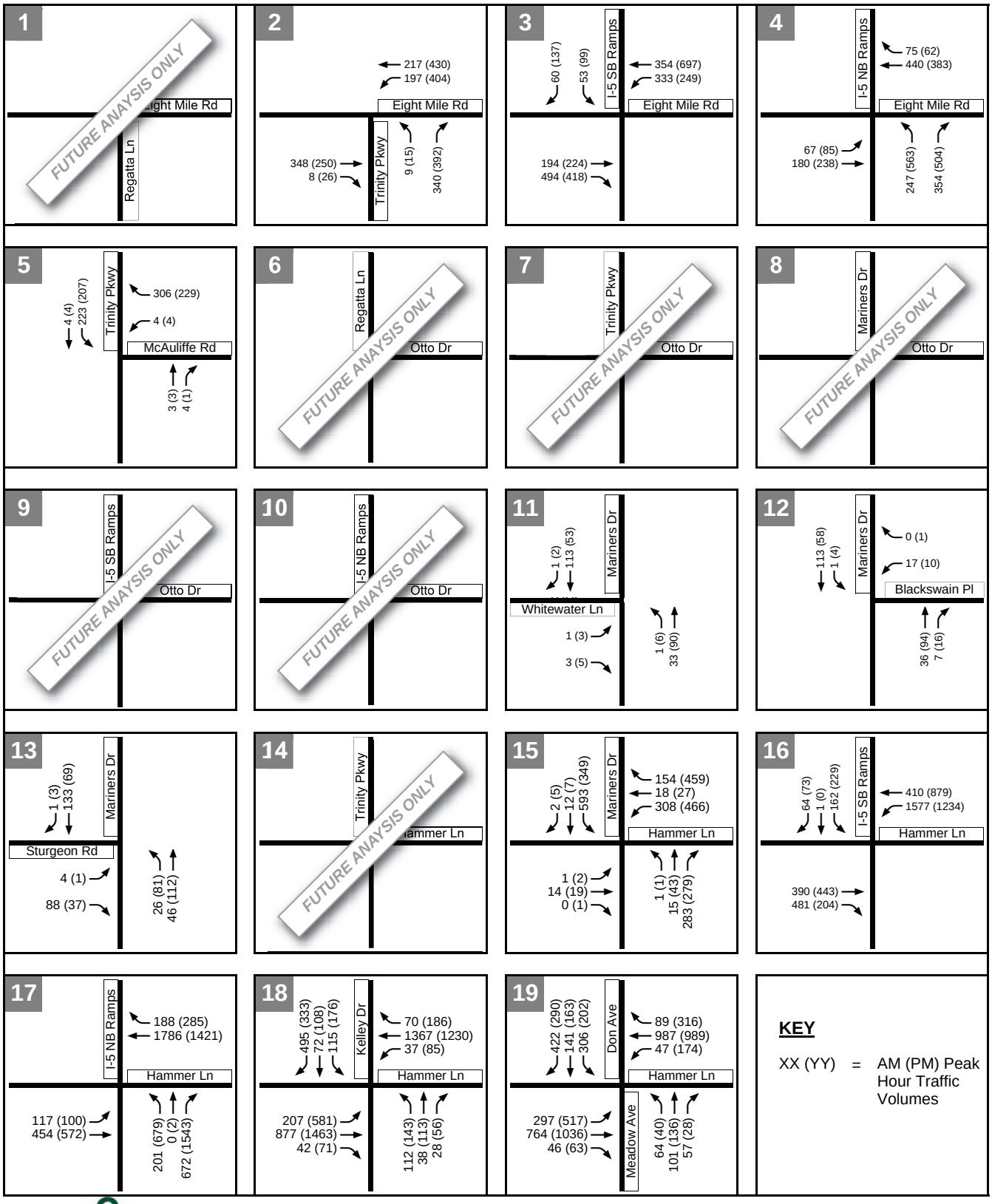

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EXISTING 2005 PEAK HOUR TRAFFIC VOLUMES

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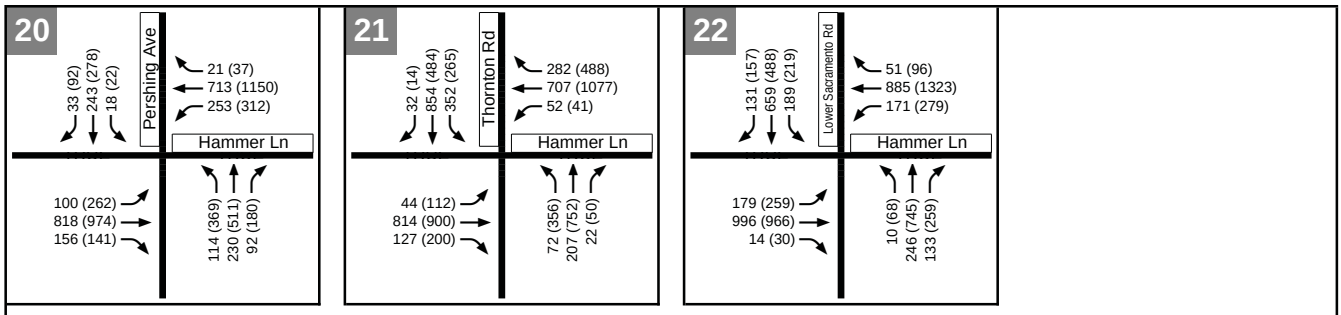
FIGURE 4.7-3A



KEY

XX (YY) = AM (PM) Peak Hour Traffic Volumes

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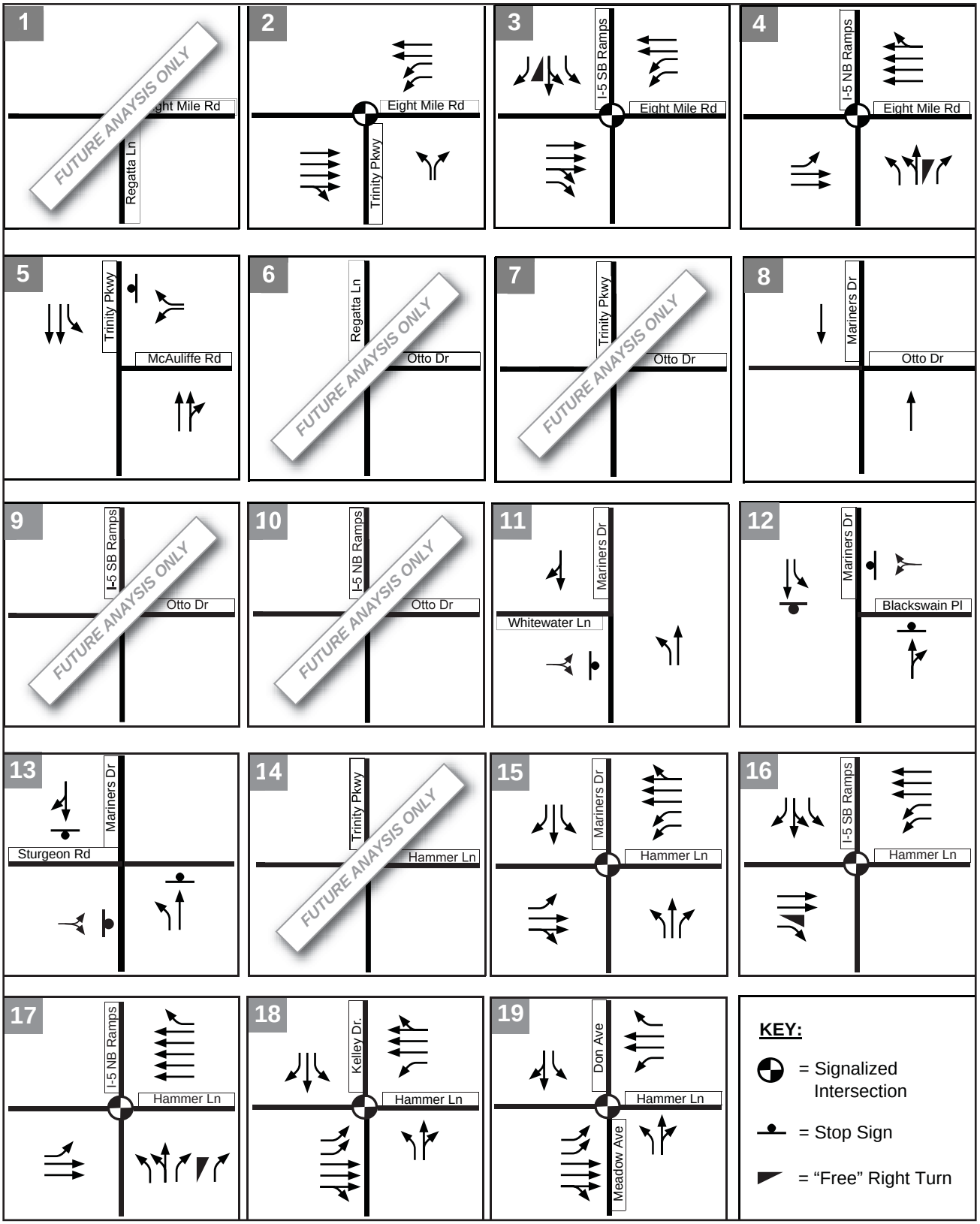
EXISTING 2005 PEAK HOUR TRAFFIC VOLUMES

FIGURE 4.7-3B



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EXISTING LANE CONFIGURATIONS AND TRAFFIC CONTROL

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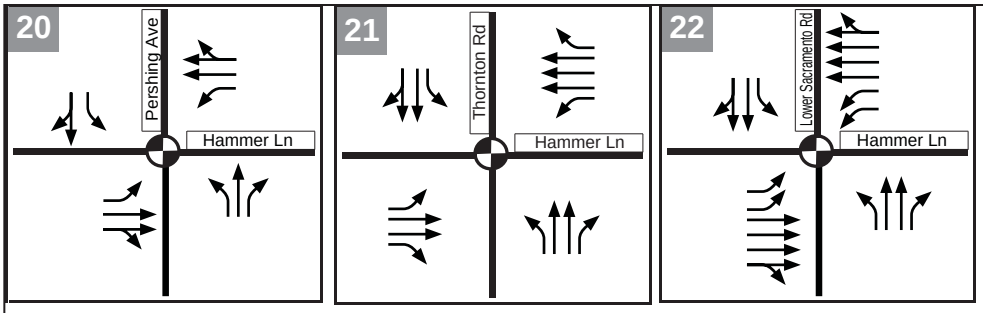
FIGURE 4.7-4A



KEY:

= Signalized Intersection

= "Free" Right Turn

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EXISTING LANE CONFIGURATIONS AND TRAFFIC CONTROL

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FIGURE 4.7-4B

g. Existing Intersection Operations

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

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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.D.** All intersections currently operate at acceptable service levels (LOS D or better) during both the AM and PM peak hours except:

- Hammer Lane/Pershing Avenue – LOS F (PM peak hour)

Detailed LOS worksheets are provided in the Appendix. Vehicle queue spillback was also evaluated for the study intersections. Generally, vehicle queuing is generally contained within the provided storage space, except in the vicinity of the Hammer Lane/I-5 interchange, where vehicle queue spill does occur during the peak hours. The 95th percentile vehicle queue for some left-turn movements also exceeds available storage capacity at the Hammer Lane/Pershing Avenue intersection for periods during the peak hours. Vehicle queue worksheets are also provided in the Appendix.

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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, Eight Mile Road interchange and Hammer Lane Interchange, in the vicinity of the Project site.

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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 to 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.

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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.

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

	Intersection	Control[1]	Peak Hour	Delay[2,3]	LOS
1.	Eight Mile Road/Regatta Lane	N/A	N/A	N/A	N/A
2.	Eight Mile Road/Trinity Parkway	Signal	AM PM	13 11	B B
3.	Eight Mile Road/I-5 Southbound Ramps	Signal	AM PM	11 6	B A
4.	Eight Mile Road/I-5 Northbound Ramps	Signal	AM PM	11 15	B B
5.	McAuliffe Drive/Trinity Parkway	SSSC	AM PM	9 (WB 10) 8 (WB 9)	A (A) A (A)
6.	Otto Drive/Regatta Lane	N/A	N/A	N/A	N/A
7.	Otto Drive/Trinity Parkway	N/A	N/A	N/A	N/A
8.	Otto Drive/Mariners Drive	N/A	N/A	N/A	N/A
9.	Otto Drive/I-5 Southbound Ramps	N/A	N/A	N/A	N/A
10.	Otto Drive/I-5 Northbound Ramps	N/A	N/A	N/A	N/A
11.	Mariners Drive/Whitewater Lane	SSSC	AM PM	0 (EB 9) 1 (EB 9)	A (A) A (A)
12.	Mariners Drive/Blackswain Place	AWSC	AM PM	8 8	A A
13.	Mariners Drive/Sturgeon Road	AWSC	AM PM	8 8	A A
14.	Hammer Lane/Trinity Parkway	N/A	N/A	N/A	N/A
15.	Hammer Lane/Mariners Drive	Signal	AM PM	29 34	C C
16.	Hammer Lane/I-5 Southbound Ramps	Signal	AM PM	13 17	B B
17.	Hammer Lane/I-5 Northbound Ramps	Signal	AM PM	9 23	A C

	Intersection	Control[1]	Peak Hour	Delay[2,3]	LOS
18.	Hammer Lane/Kelley Drive	Signal	AM PM	32 45	C D
19.	Hammer Lane/Meadow Avenue/Don Avenue	Signal	AM PM	33 34	C C
20.	Hammer Lane/Pershing Avenue	Signal	AM PM	37 **>80**	D **F**
21.	Hammer Lane/Thornton Road	Signal	AM PM	33 44	C D
22.	Hammer Lane/Lower Sacramento Road	Signal	AM PM	34 39	C D

Source: Fehr & Peers, 2007
Notes: N/A = Not Applicable. Intersection analysis under future conditions only. ***Bold:*** *Indicates unacceptable intersection operations.*
[1]Signal = Signalized intersection; AWSC = All-way stop-controlled intersection; SSSC = Side-street stop-controlled intersection.
[2]Signalized intersection average control delay (in seconds per vehicle) and LOS calculated using the 2000HCM) method.
[3]All-way stop controlled and side-street stop-controlled intersection LOS is based on average delay per vehicle (in seconds) according to the 2000 HCM. For the side-street stop controlled intersections, the worse case stop-controlled movement delays are presented in parenthesis.

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Traffic Signal Warrant Analysis: The Peak hour volume and delay[1] signal warrant was investigated for the unsignalized study intersections. **Table 4.7.E** shows that none of the unsignalized study intersections currently satisfy the peak hour traffic signal warrant.

Table 4.7.E: Existing (2005) Peak Hour Signal Warrant Analysis Results [1]

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	Intersection	Status
5.	McAuliffe Drive/Trinity Parkway	Not Met
11.	Mariners Drive/Whitewater Lane	Not Met
12.	Mariners Drive/Blackswain Place	Not Met
13.	Mariners Drive/Sturgeon Road	Not Met

Source: Fehr & Peers, 2007
Note: [1] Based on methods presented in Federal Highway Administration's MUTCD, 2003.

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1 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.

h. Existing Freeway Operations

The 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.F** and the LOS criteria shown in Table 4.7.C. 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.F: 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
North of Eight Mile Road	Southbound	2,500	14	B	2,900	16	B
South of Eight Mile Road	Northbound	1,930	11	A	2,780	15	B
South of Eight Mile Road	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: [1]Traffic volumes provided by Caltrans for the North Stockton I-5 Interchanges PA/ED.
[2] Density measured in passenger cars per mile per lane.
[3]Mainline segment LOS based on vehicle density, according to the Highway Capacity Manual (Transportation Research Board, 2000).

4.7.2 Regulatory Context ~~and~~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.

a. City of Stockton 1990 General Plan Policy Document

The City of Stockton General Plan Policy Document (adopted January 22, 1990) was used to provide 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.

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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 subdivisions 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.

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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.

b. City of Stockton 2035 General Plan Update

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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 in the study area proposed due to physical constraints that limit the improvements that can be constructed:

3. Eight Mile Road, Trinity Parkway to I-5 – LOS E
4. Hammer Lane, I-5 to Kelley Drive – LOS E

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c. California Environmental Quality Act (CEQA) Guidelines

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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

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- Exceed, either individually or cumulatively, a LOS standard established by the county congestion management agency for designated roads or highways
- Results 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
- Results in inadequate parking capacity
- Conflict with adopted policies, plans or programs supporting alternative transportation

d. 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.

e. 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 through an intersection by more than five seconds to an intersection projected to operate unacceptably (i.e., LOS E or worse) without the project
- Increases the total traffic volume through the freeway by five percent or more on a segment projected to operate unacceptably (i.e., LOS E or worse) without the project
- 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

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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:

3. Eight Mile Road, Trinity Parkway to I-5 – LOS E
4. Hammer Lane, I-5 to Kelley Drive – LOS E

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

4.7.3 Impacts ~~and~~And Mitigation Measures

This section discusses the potential 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.

a. Project Trip Generation

Project vehicle trip generation was estimated using appropriate trip generation rates and equations from ITE's *Trip Generation* (7th Edition), as shown in **Table 4.7.G**. Vehicle trip generation was derived by applying the appropriate ITE trip generation rate/equation to the proposed project components. The Preserve is currently proposed to contain 1,404 housing units including 1,308 single family homes, 96 condominiums, a 650 student elementary school and 42.15 acres of parks. It should be noted that the off-site traffic analysis was conducted assuming development of 1,659 housing units (including 1,311 single-family homes and 348 condominiums). Trip generation for the proposed development is shown in **Table 4.7.H**.

Table 4.7.G: Trip Generation Equations

PROPOSED LAND USE	ITE CODE	DAILY	AM PEAK HOUR	PM PEAK HOUR
Single-Family	210	Ln(T) = 0.92 Ln(D) + 2.71	T= 0.70(D) + 9.43	Ln(T) = 0.901 Ln(D) + 0.53
Condominium	230	Ln(T) = 0.85 Ln(X) + 2.55	Ln(T) = 0.80 Ln(X) + 0.26	Ln(T) = 0.82 Ln(X) + 0.32
Elementary School	520	T = 1.29 (S)	T = 0.42 (S)	T = 0.28 (S)

Source: Trip Generation (7th Edition), Institute of Transportation Engineers, March 2001
Notes: T= Number of trips, LN= Natural Logarithm, D= Dwelling units; S=Student

Trip generation for the elementary school in the project site was adjusted to account for students that would reside in The Preserve. Based on *School Generation Rates Memorandum* to Jim Panagopoulos, A.G. Spanos Companies from Brendan McLaughlin, Mid-Valley Engineering (May 5, 2005), an estimated 0.31 elementary school students would be generated per single-family home, and 0.05 elementary school students would be generated per condominium or apartment unit. This

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results in approximately 410 elementary school students residing in The Preserve. -The number of students expected to come from within the project were subtracted from the total number of students, as it is anticipated that these students would bicycle or walk to school, or be dropped off by a parent on their way to work. -The residential trip generation was not reduced to account for student drop-off/pick-up, as it was assumed that this trip would be part of another trip destined outside The Preserve.

Table 4.7.H: Project Trip Generation

Project Component	Size	Daily	AM Peak Hour			PM Peak Hour		
			Inbound	Outbound	Total	Inbound	Outbound	Total
Single Family Homes	1,308 Du	11,070	231	694	925	683	401	1,084
Condominiums	96 Du	620	9	42	50	39	19	58
Elementary School	240 Students	310	56	45	101	10	12	22
Total		12,000	295	781	1,076	732	432	1,164

Notes: du = dwelling units; the off-site analysis was conducted assuming development of 1,659 housing units (including 1,311 single-family homes and 348 condominiums), resulting in 13,240 daily trips, 1,162 AM peak hour and 1,274 PM peak hour trips.
Source: Fehr & Peers, 2007

At project buildout, The Preserve is estimated to generate approximately 12,000 new daily trips, with 1,076 AM peak hour and 1,164 PM peak hour trips.

b. -Project Trip Distribution and Assignment

The City of Stockton Traffic Model and existing traffic volumes at the study intersections were used to estimate general trip distribution patterns for The Preserve. -Trip distribution percentages are shown on **Figure 4.7.5** for the Existing plus Approved Projects condition, **4.7.6** for the Future 2025 condition, and **4.7.7** for the Future 2035 condition. -The trip distribution percentages change by analysis year to reflect the provision of other roadway facilities, such as the Otto Drive interchange with I-5 and the construction of the Trinity Parkway to March Lane, as well as the development of complementary land uses.

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, 4.7.6, and 4.7.7. -AM and PM peak hour project trip assignment is shown on **Figures 4.7.8, 4.7.9,** and **4.7.10** for the Existing plus Approved Projects, Future 2025 and Future 2035 conditions, respectively. -

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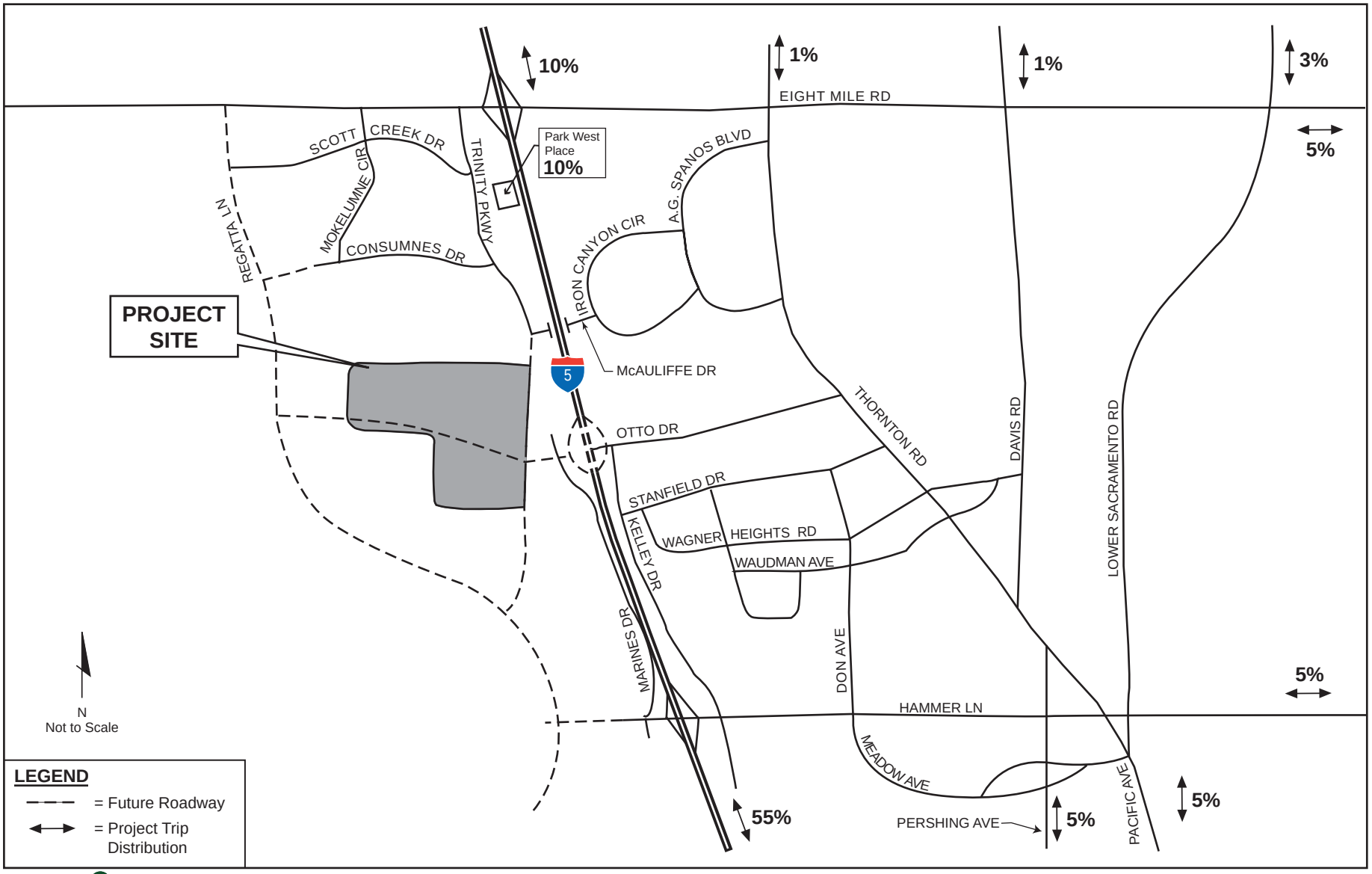

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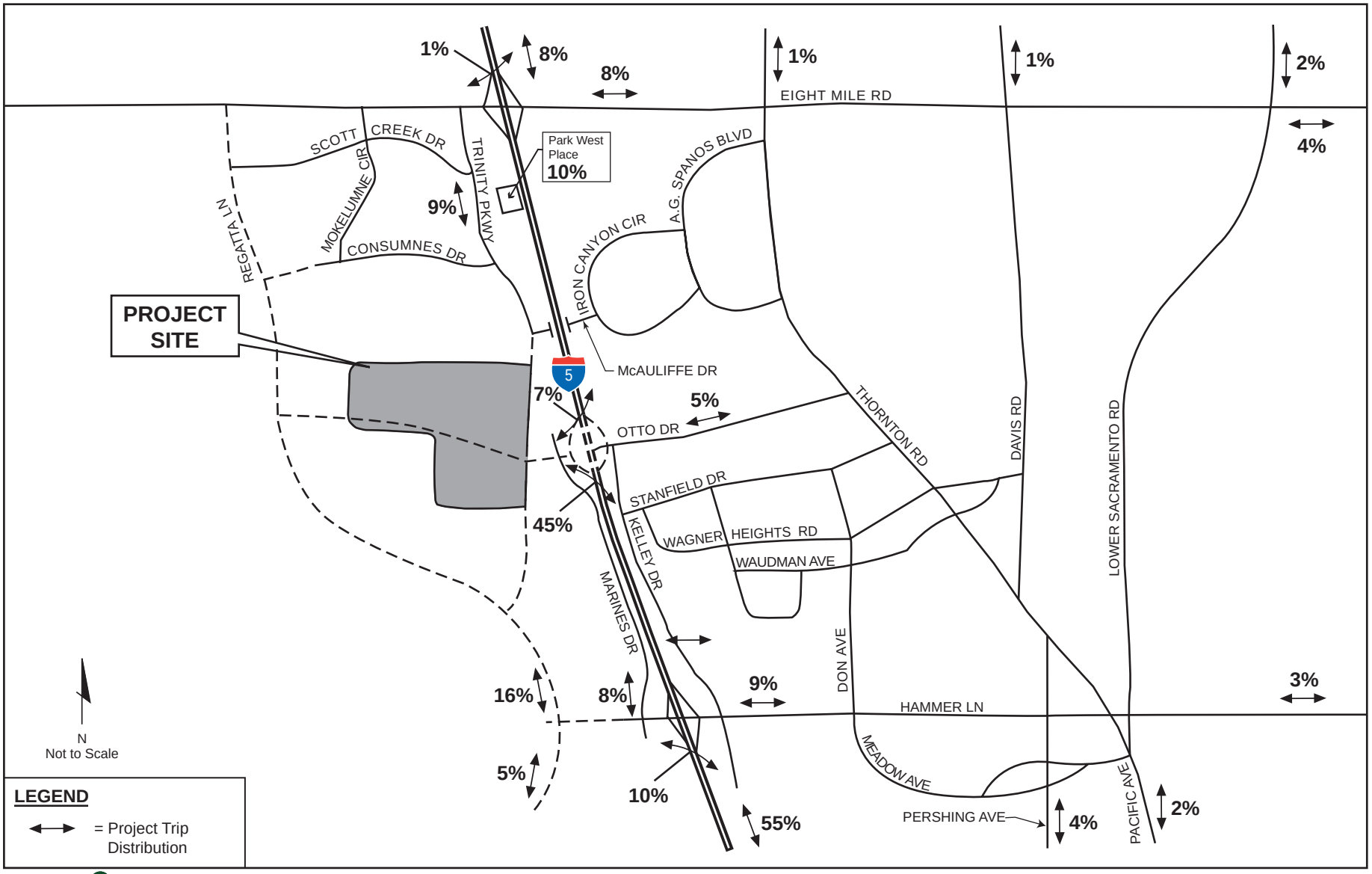
PROJECT TRIP DISTRIBUTION
EXISTING PLUS APPROVED
FIGURE 4.7-5



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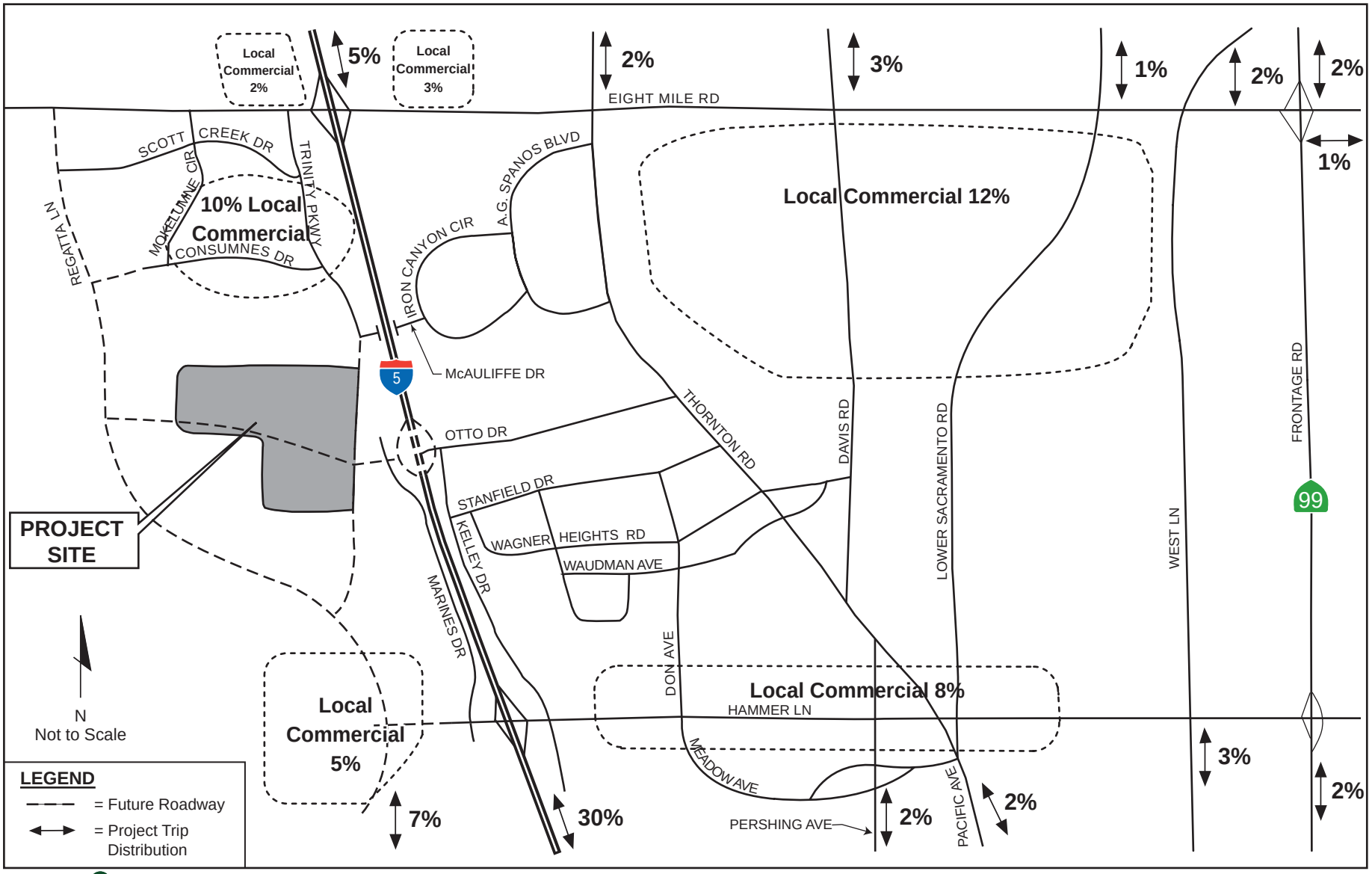
PROJECT TRIP DISTRIBUTION
FUTURE 2025
FIGURE 4.7-6



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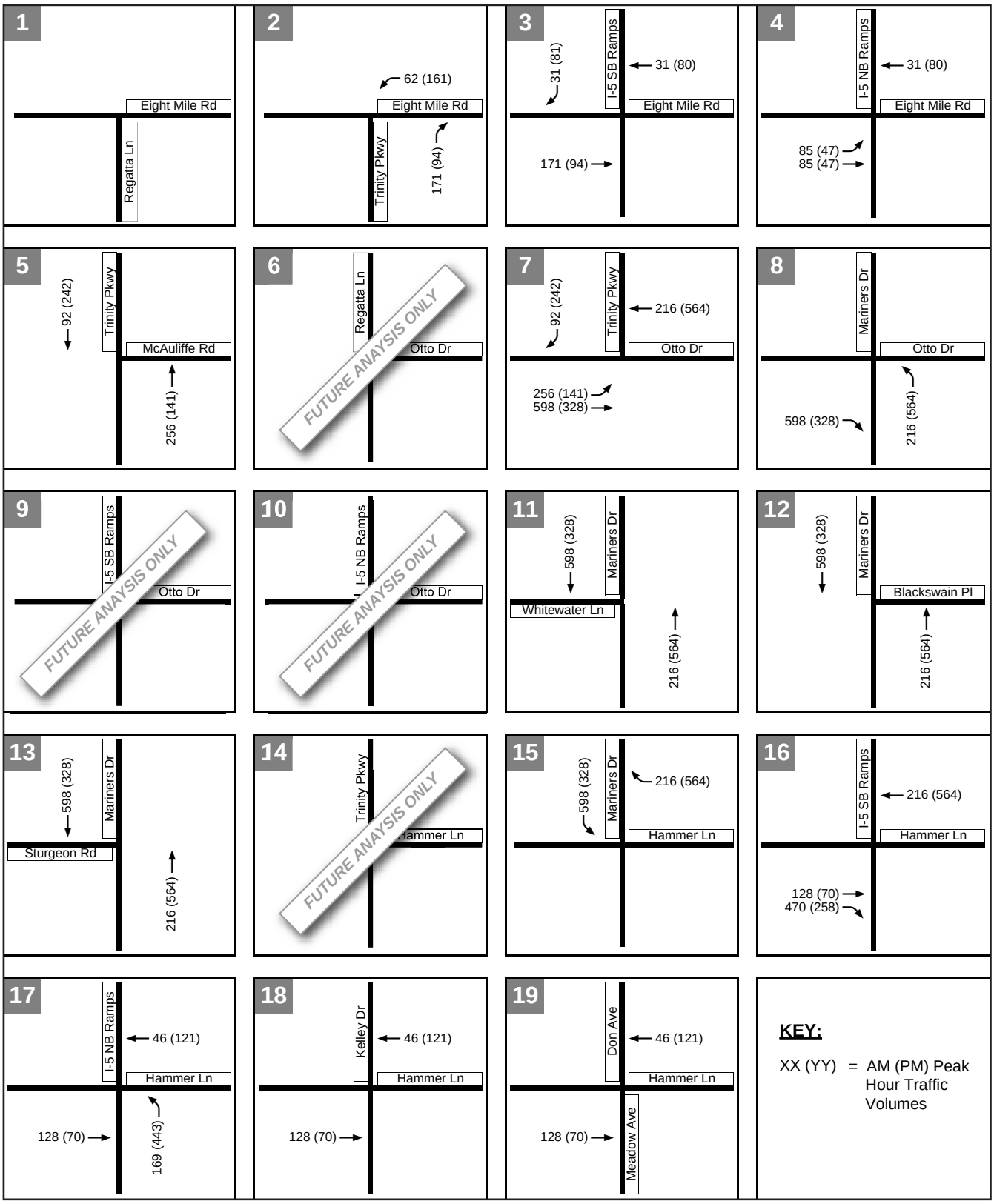
PROJECT TRIP DISTRIBUTION
FUTURE 2035
FIGURE 4.7-7



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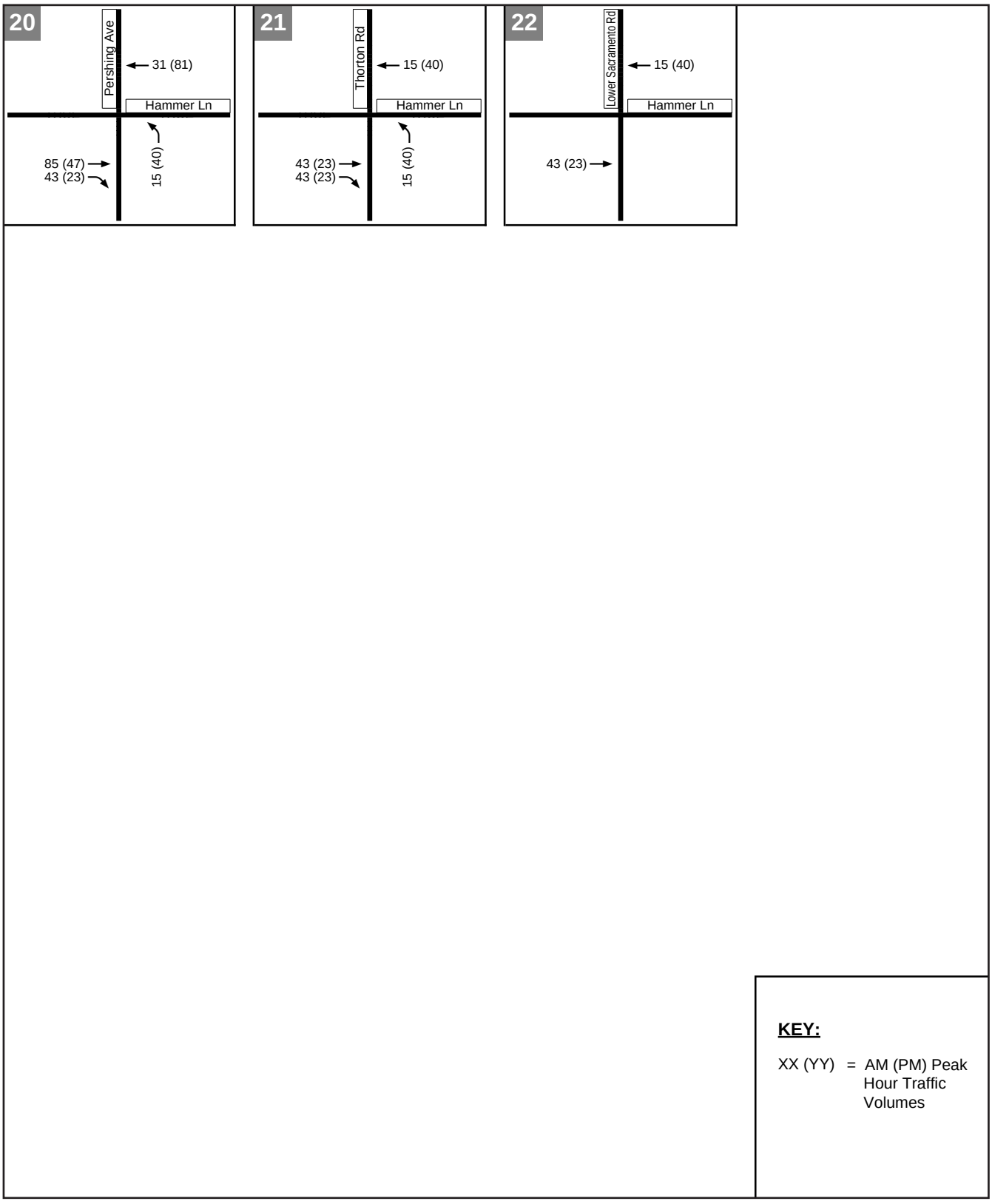
EXISTING PLUS APPROVED PROJECTS PEAK HOUR PROJECT TRIP ASSIGNMENT

FIGURE 4.7-8A



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EXISTING PLUS APPROVED PROJECTS PEAK HOUR PROJECT TRIP ASSIGNMENT

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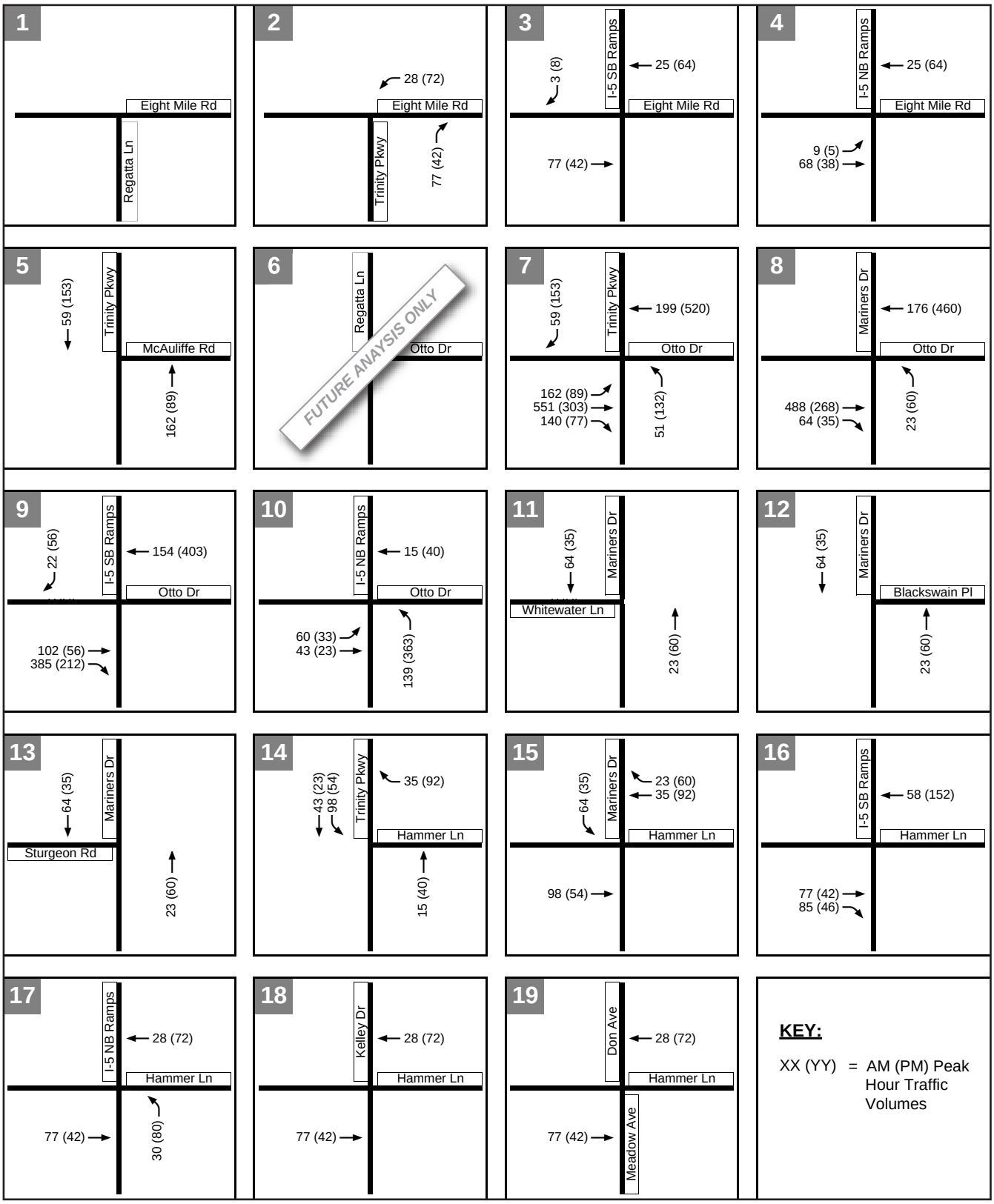
FIGURE 4.7-8B



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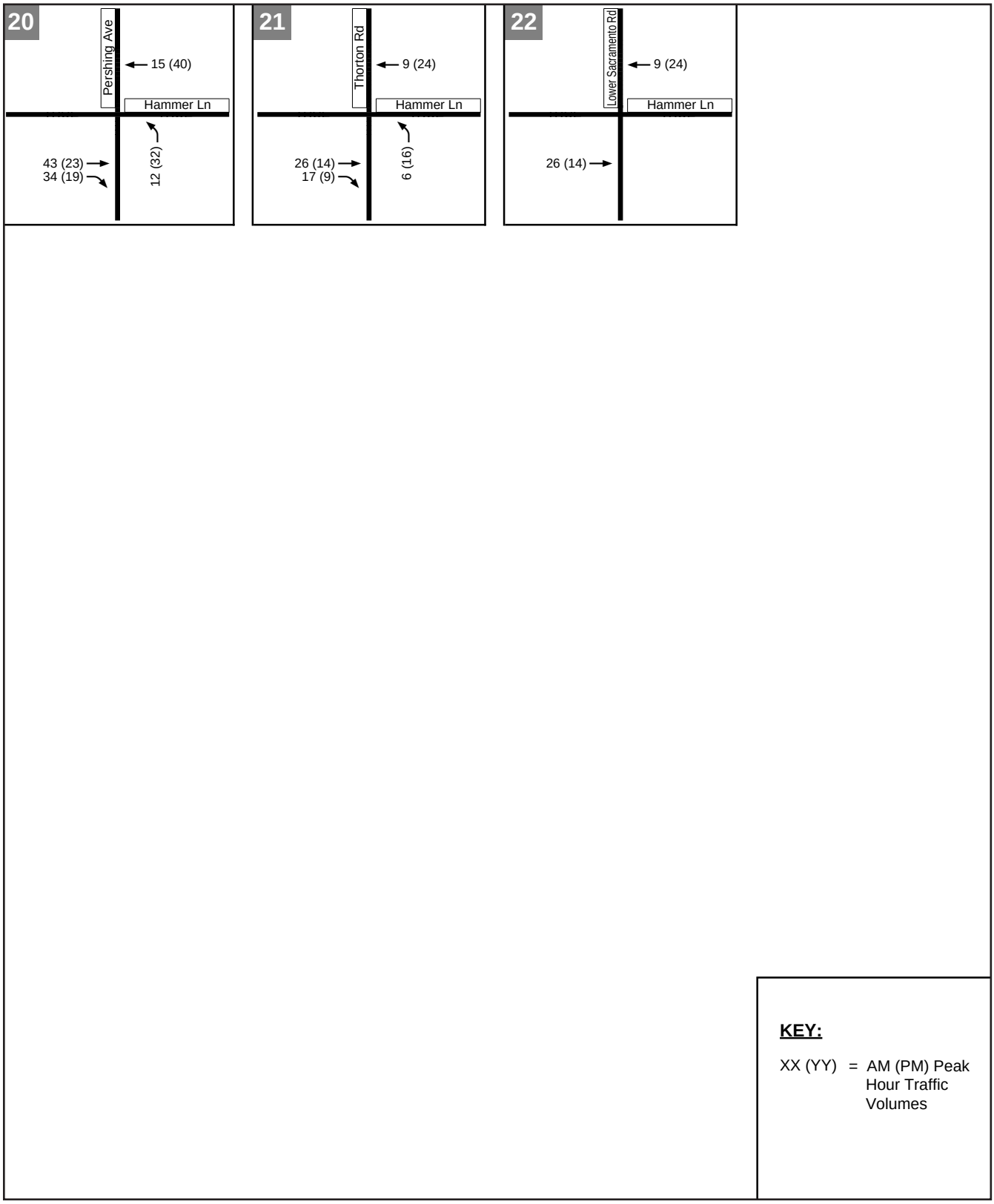
FUTURE 2025 PEAK HOUR PROJECT TRIP ASSIGNMENT

FIGURE 4.7-9A



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FUTURE 2025
PEAK HOUR PROJECT TRIP ASSIGNMENT

FIGURE 4.7-9B

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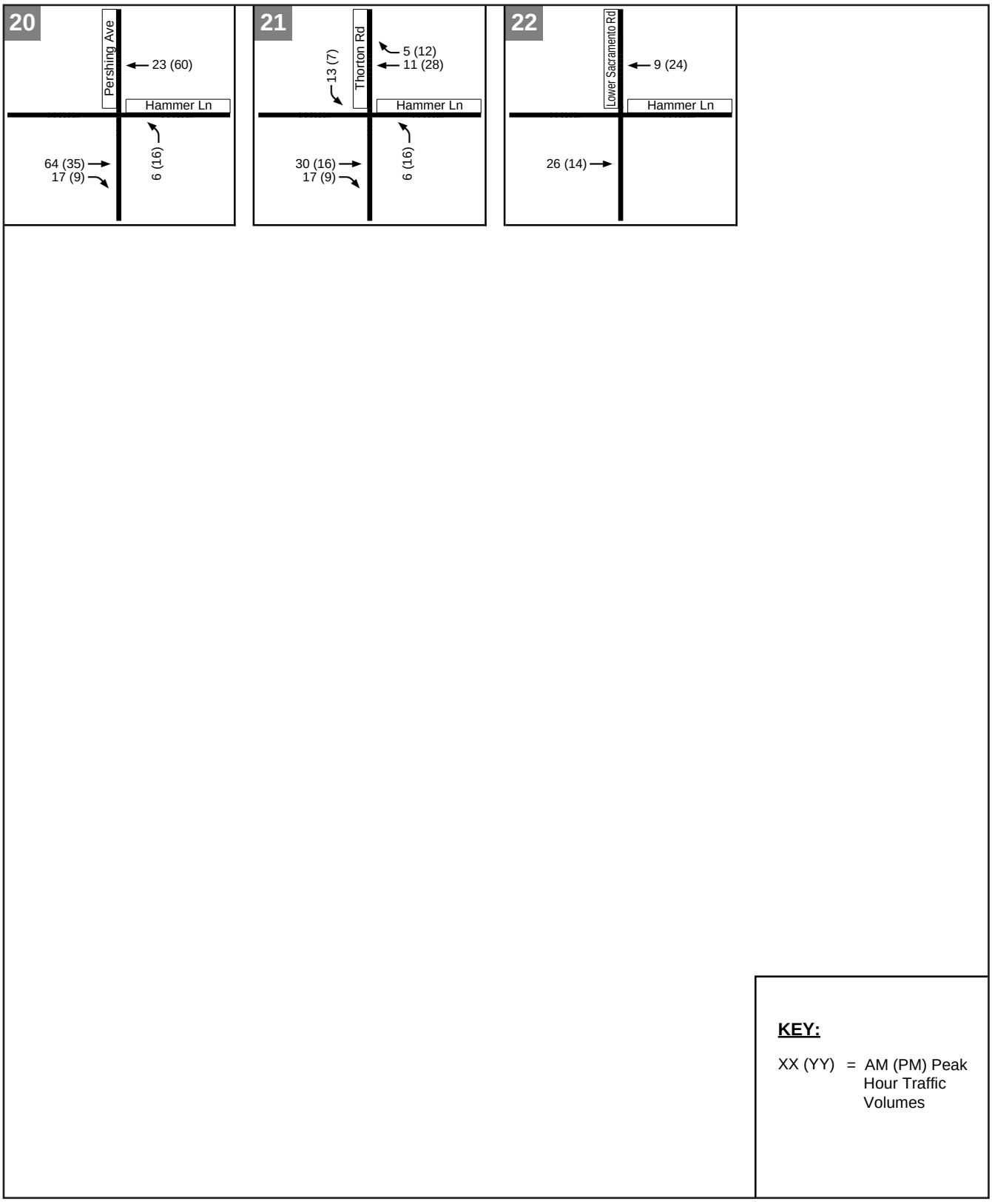
FUTURE 2035 PEAK HOUR PROJECT TRIP ASSIGNMENT

FIGURE 4.7-10A



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FUTURE 2035
PEAK HOUR PROJECT TRIP ASSIGNMENT
FIGURE 4.7-10B

c. Existing plus Approved Projects Conditions Analysis

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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 the build-out of parcels that could be further developed without future entitlements from the City, and traffic from those developments that are approved and/or under construction within the study area. These conditions represent the traffic levels that could occur with the opening of the project in the next several years.

Traffic volumes for Existing plus Approved Projects conditions were estimated using the City of Stockton's travel demand forecasting model. The land use data was modified to incorporate all approved development in the vicinity of the project including Westlake at Spanos Park West and the already constructed portions of the Spanos Park West project.

The roadway network was modified to include all of the planned and funded improvements. The resulting lane configurations are shown on **Figure 4.7.11**. The improvements at study intersections include:

7. The Trinity Parkway extension over Bear Creek, connecting Trinity Parkway to Otto Drive
8. Signalization of the Trinity Parkway/McAuliffe Drive intersection

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The input assumptions and model results were approved by City of Stockton staff. Traffic forecasts from the model were adjusted using the delta method. **Figure 4.7-12** shows the resulting Existing plus Approved Projects peak hour traffic volumes. The operations of each study intersection were analyzed with LOS calculations. **Table 4.7.I** summarizes the results. The analysis results indicate that the following intersections are projected to operate at deficient service levels prior to the addition of project traffic:

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9. Eight Mile Road/I-5 Northbound Ramps – LOS F (PM peak hour)
10. Mariners Drive/Blackswain Place – LOS F (PM peak hour)
11. Mariners Drive/Sturgeon Road – LOS F (PM peak hour)
12. Hammer Lane/Mariners Drive – LOS E (AM peak hour) and LOS F (PM peak hour)
13. Hammer Lane/Pershing Avenue – LOS E (PM peak hour)
14. Hammer Lane/Thornton Road – LOS E (PM peak hour)
15. Hammer Lane/Lower Sacramento Road – LOS E (PM peak hour)

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Peak hour traffic signal warrants were reviewed for the Existing plus Approved Projects scenario, as presented in **Table 4.7.J**. This review indicates that the peak hour traffic signal warrant would be satisfied at the Otto Drive/Mariners Drive and Mariners Drive/Sturgeon Road intersections.

I-5 traffic forecasts were developed using the City's Existing plus Approved Projects Traffic Model. Each mainline segment of I-5 north and south of Eight Mile Road, and south of Hammer Lane was analyzed based on the volumes shown in **Table 4.7.K**. The analysis results indicate that for the Existing plus Approved Projects scenario, I-5 south of Hammer Lane would operate at LOS E in the southbound direction during the AM peak hour and LOS E in the northbound direction during the PM peak hour. All other mainline segments analyzed are projected to operate at LOS D or better during both peak hours.

d. Existing plus Approved Projects plus Project Conditions Analysis

Existing plus Approved Projects Plus Project Forecasts: Traffic from the proposed project was added to the Existing plus Approved Projects forecasts, as shown on **Figure 4.7.13.**

Analysis of Existing plus Approved Projects plus Project Conditions: The results of the intersection level of service analysis are shown in **Table 4.7.I**. The addition of project traffic would worsen the operations of intersection projected to operate deficiently prior to the addition of project traffic, or result in deficient operations.

~~16.~~ Eight Mile Road/I-5 Northbound Ramps – The addition of project traffic worsens LOS F conditions during the PM peak hour and increases delay by more than 5-seconds (TRAF-1a).

~~17.~~ Otto Drive/Mariners Drive – The addition of project traffic degrades intersection operations to LOS F during the AM peak hour and LOS E during the PM peak hour (TRAF-2a).

- Mariners Drive/Whitewater Lane – The addition of project traffic degrades side street operations to LOS E and LOS F during the AM and PM peak hours, respectively, and excessive queuing would be experienced. Although the intersection would continue to operate at an overall acceptable service level, and the peak hour traffic signal warrant would not be satisfied (TRAF-2b).

~~18.~~ Mariners Drive/Blackswain Place – The addition of project traffic results in LOS F conditions during the AM peak hour, and worsens LOS F conditions during the PM peak hour, increasing delay by more than 5-seconds (TRAF-2c).

~~19.~~ Mariners Drive/Sturgeon Road – The addition of project traffic results in LOS F conditions during the AM peak hour, and worsens LOS F conditions during the PM peak hour, increasing delay by more than 5-seconds (TRAF-2d).

~~20.~~ Hammer Lane/Mariners Drive – The addition of project traffic worsens LOS E conditions to LOS F during the AM peak hour and worsens LOS F conditions during the during the PM peak hour, increasing delay by more than 5-seconds (TRAF-1b).

~~21.~~ Hammer Lane/Kelley Drive – The addition of project traffic degrades LOS D operations to LOS E during both the AM and PM peak hours (TRAF-1c).

~~22.~~ Hammer Lane/Pershing Avenue – The addition of project traffic worsens LOS E conditions during the PM peak hour and increases delay by more than 5-seconds (TRAF-1d).

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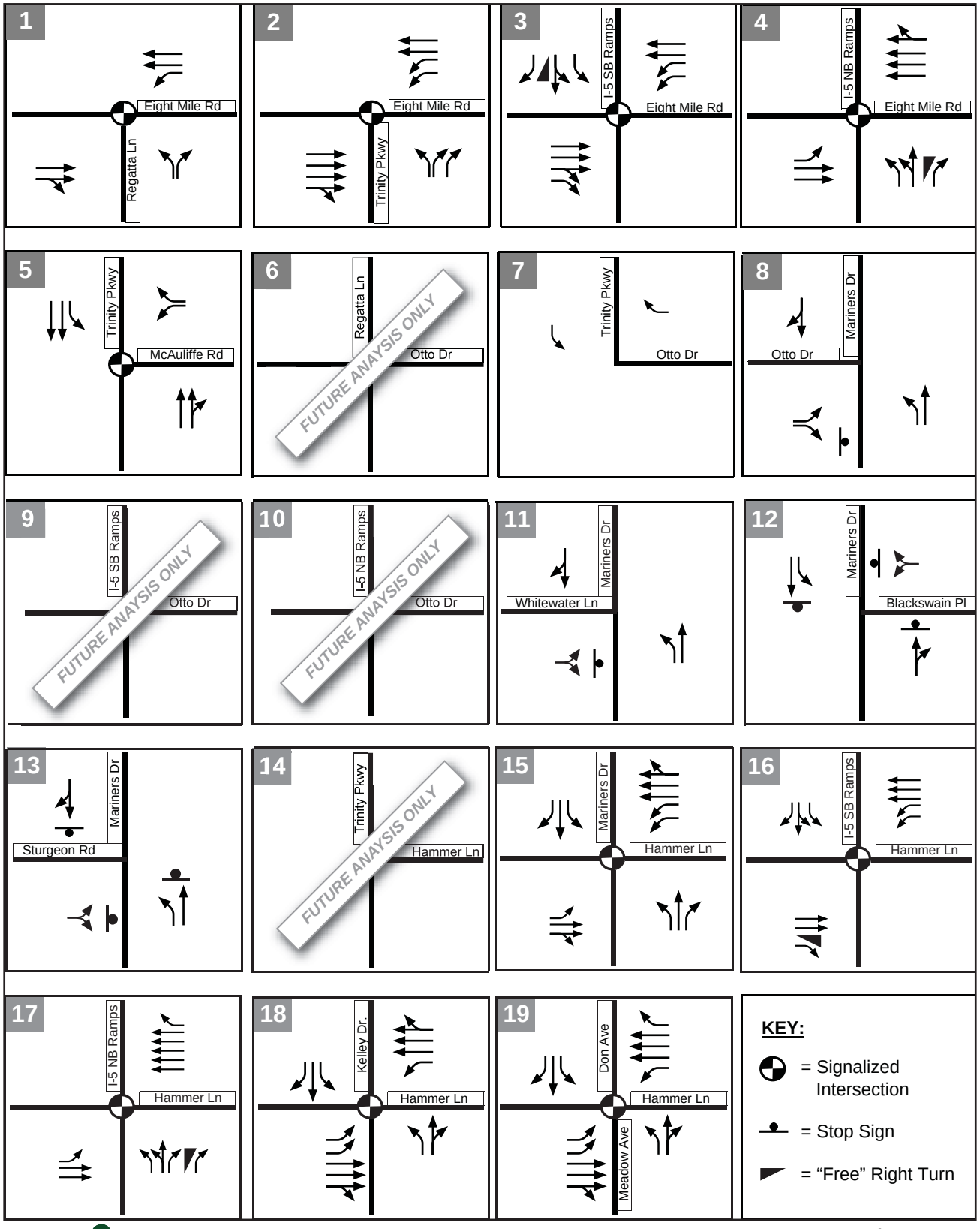

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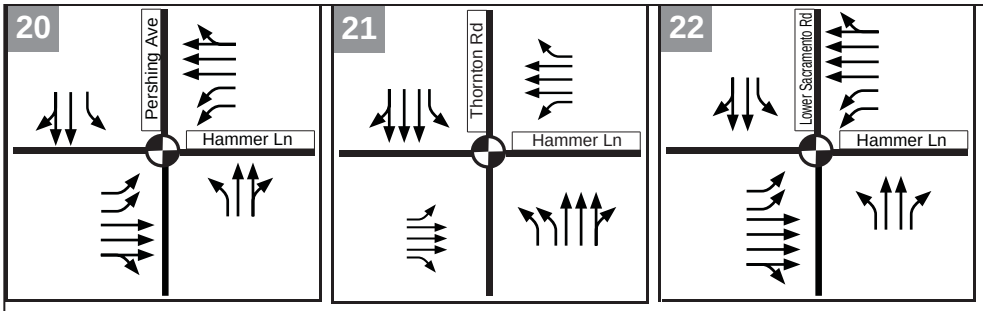
EXISTING PLUS APPROVED PROJECTS LANE CONFIGURATIONS AND TRAFFIC CONTROL

FIGURE 4.7-11A



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EXISTING PLUS APPROVED PROJECTS LANE CONFIGURATIONS AND TRAFFIC CONTROL

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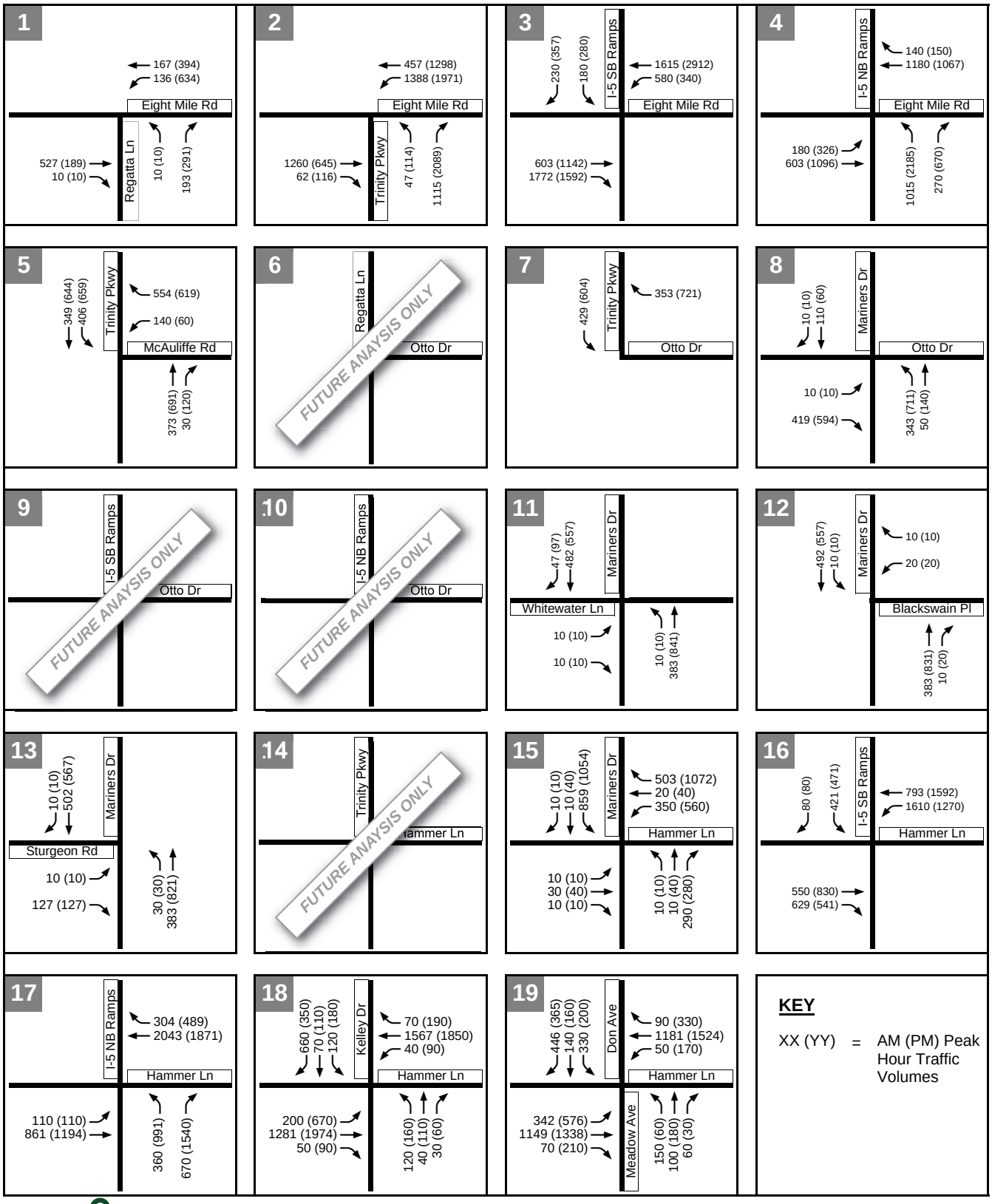
FIGURE 4.7-11B



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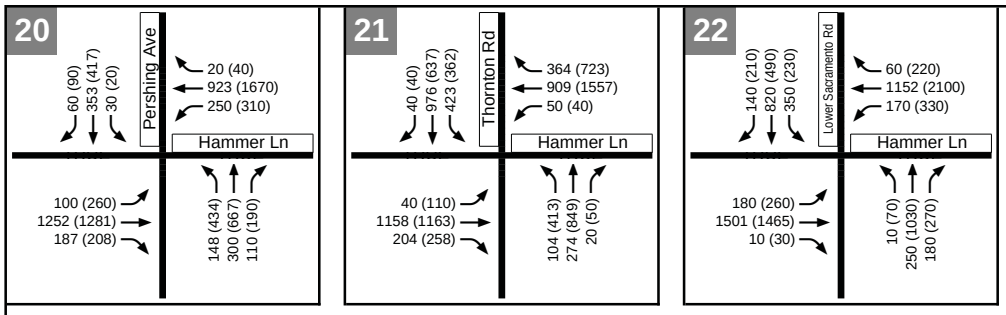
EXISTING PLUS APPROVED PROJECTS PEAK HOUR TRAFFIC VOLUMES

FIGURE 4.7-12A



KEY

XX (YY) = AM (PM) Peak Hour Traffic Volumes

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EXISTING PLUS APPROVED PROJECTS PEAK HOUR TRAFFIC VOLUMES

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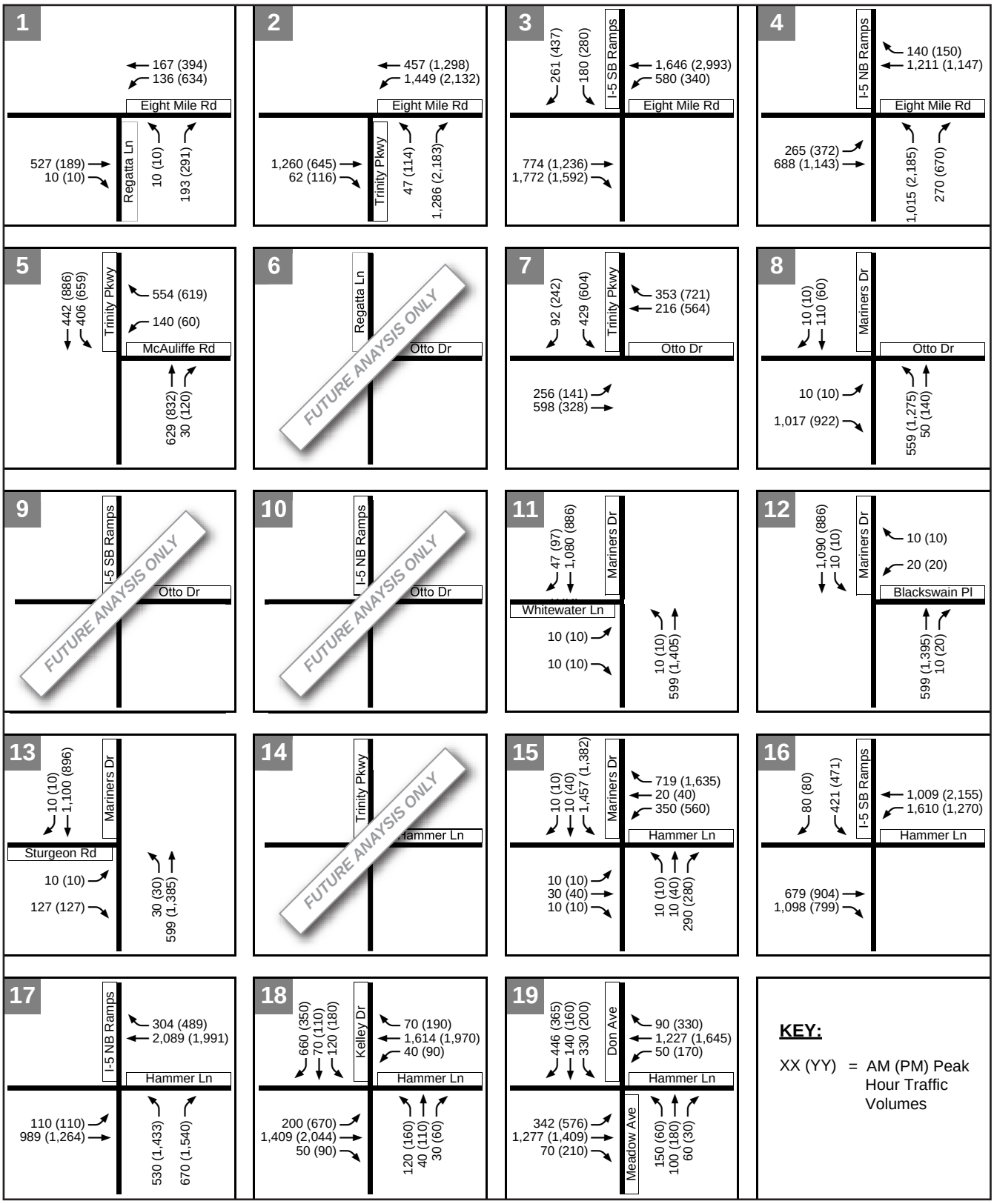
FIGURE 4.7-12B



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EXISTING PLUS APPROVED PROJECTS PLUS PROJECT PEAK HOUR TRAFFIC VOLUMES

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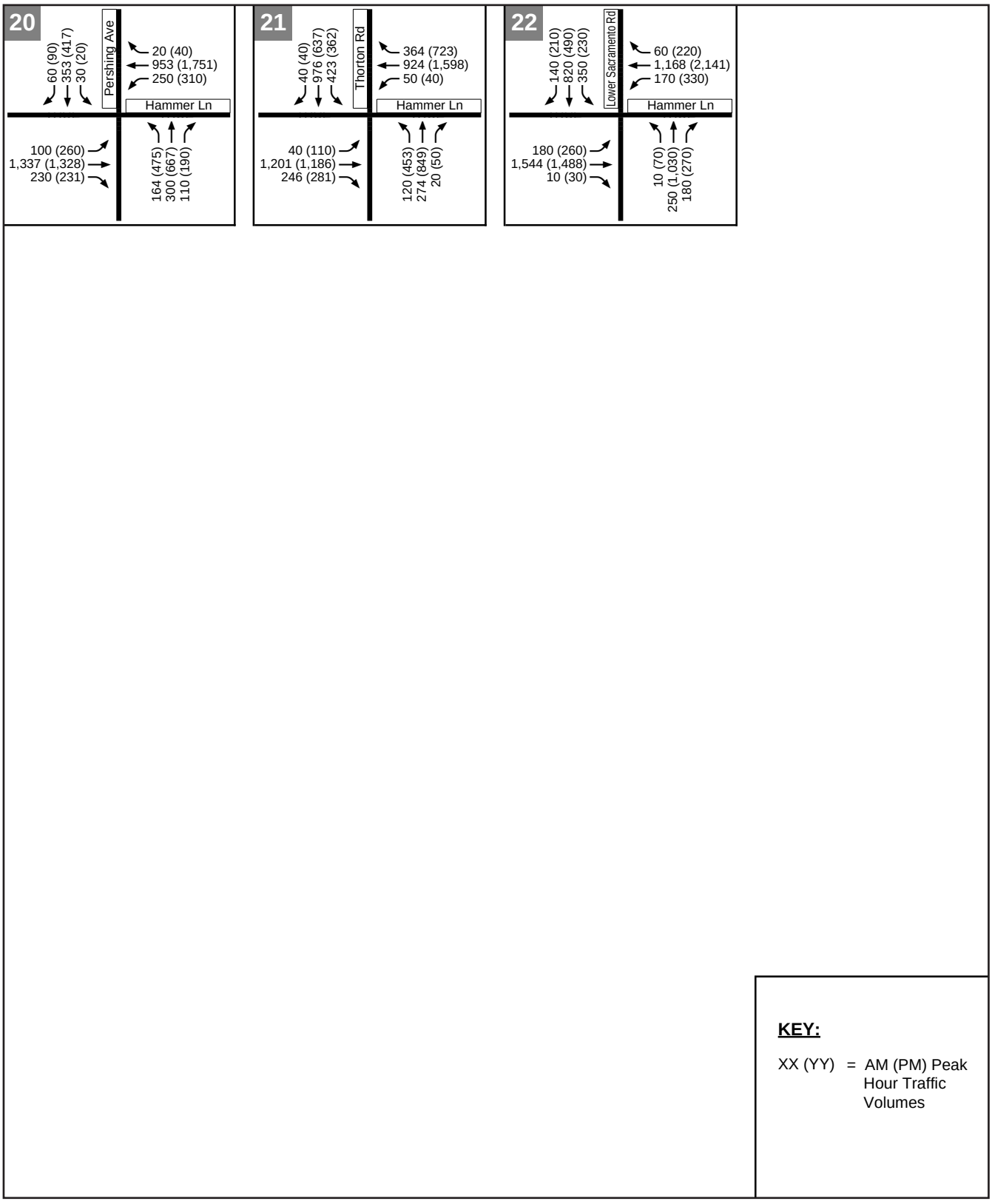
FIGURE 4.7-13A



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EXISTING PLUS APPROVED PROJECTS PLUS PROJECT PEAK HOUR TRAFFIC VOLUMES

October 2007
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FIGURE 4.7-13B

23. Hammer Lane/Thornton Road – This intersection is projected to operate at LOS E prior to the addition of project traffic during the PM peak hour. Although the project is expected to increase traffic through this intersection, it is not expected to increase average delay (TRAF-1e).

24. Hammer Lane/Lower Sacramento Road – The addition of project traffic worsens LOS E conditions during the PM peak hour by increasing average delay by 1-second (TRAF-1f).

Deficient operations projected for Mariners Drive are due to the construction of the bridge over Bear Creek, which when completed would connect Eight Mile Road to Hammer Lane. Some traffic destined to/from northwest Stockton may find this route preferable over travel on I-5 or other north-south roadways, such as Thornton Road.

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Table 4.7.I: 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/Regatta Lane	Signal	AM PM	13 11	B B	13 11	B B
2.	Eight Mile Road/Trinity Parkway	Signal	AM PM	28 40	C D	37 48	D D
3.	Eight Mile Road/I-5 Southbound Ramps	Signal	AM PM	21 30	C C	21 45	C D
4.	Eight Mile Road/I-5 Northbound Ramps	Signal	AM PM	32 > **80**	C **F**	34 ***>80***	C ***F***
5.	McAuliffe Drive/Trinity Parkway	Signal	AM PM	21 25	C C	24 28	C C
6.	Otto Drive/Regatta Lane	N/A	N/A	N/A	N/A	N/A	N/A
7.	Otto Drive/Trinity Parkway	Signal	AM PM	N/A[4]	N/A[4]	27 29	C C
8.	Otto Drive/Mariners Drive	SSSC	AM PM	9 (EB 13) 11 (EB 16)	A (EB B) B (EB C)	***>50 (*****EB >50*****)*** ***43*** **(EB >50)**	***F*** **(F)** ***E*** **(F)**
9.	Otto Drive/I-5 Southbound Ramps	N/A	N/A	N/A	N/A	N/A	N/A
10.	Otto Drive/I-5 Northbound Ramps	N/A	N/A	N/A	N/A	N/A	N/A
11.	Mariners Drive/ Whitewater Lane	SSSC	AM PM	0 (EB 16) 0 (EB 27)	A (EB C) A (EB D)	1 (**EB 43**) 1 (**EB >50**)	A (**E**) A (**F**)
12.	Mariners Drive/ Blackswain Place	AWSC	AM PM	16 **>50**	C **F**	***>50*** ***>50***	***F*** ***F***

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	Intersection	Control[1]	Peak Hour	Existing plus Approved Projects		Existing plus Approved Projects plus Project	
				Delay[2,3]	LOS	Delay[2,3]	LOS
13.	Mariners Drive/Sturgeon Road	AWSC	AM PM	18 **>50**	C **F**	***>50*** ***>50***	***F*** ***F***
14.	Hammer Lane/Trinity Parkway	N/A	N/A	N/A	N/A	N/A	N/A
15.	Hammer Lane/Mariners Drive	Signal	AM PM	**63** **>80**	**E** **F**	***>80*** ***>80***	***F*** ***F***
16.	Hammer Lane/I-5 Southbound Ramps	Signal	AM PM	23 23	C C	30 23	C C
17.	Hammer Lane/I-5 Northbound Ramps	Signal	AM PM	16 39	B D	21 52	C D
18.	Hammer Lane/Kelley Drive	Signal	AM PM	50 48	D D	***63*** ***57***	***E*** ***E***
19.	Hammer Lane/Meadow Avenue	Signal	AM PM	28 32	C C	29 33	C C
20.	Hammer Lane/Pershing Avenue	Signal	AM PM	30 **62**	C **E**	30 ***74***	C ***E***
21.	Hammer Lane/Thornton Road	Signal	AM PM	32 **62**	C **E**	32 **62**	C **E**
22.	Hammer Lane/Lower Sacramento Road	Signal	AM PM	36 **66**	D **E**	36 **67**	D **E**

Source: Fehr & Peers, 2007.
Notes: N/A = Not Applicable. Intersection analysis under future conditions only.
Bold: *indicates deficient service level.* ***Bold/Italics*** *Indicates significant project impact (i.e. the addition of project traffic results in deficient LOS E or F conditions, or increases average delay by more than 5 seconds at an intersection already operating at a deficient LOS E or F).*
[1]Signal = Signalized intersection; AWSC = All-way stop-controlled intersection; SSSC = Side-street stop-controlled intersection.
[2]Signalized intersection average control delay (in seconds per vehicle) and LOS calculated using the Highway Capacity Manual (Transportation Research Board, 2000) method.
[3]All-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.
[4]This intersection exists under Existing Plus Approved Projects conditions; however, it would have no conflicting movements (i.e., there would be only a north leg and an east leg) so it would operate at LOS A.

Vehicle Queuing. The potential for project traffic to exacerbate or result in vehicle queue spillback at the study intersections was evaluated. Vehicle queue sheets are provided in the Appendix. The project would exacerbate existing queue spillback, or result in vehicle queues exceeding the available turn-pocket storage or in vehicle queues extending to adjacent intersections at the following intersections in the near-term condition:

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Eight Mile Road/Trinity Parkway – ~~the~~ The westbound left-turn queue is expected to exceed the storage length under no-project conditions. ~~-~~Additionally, the northbound volume is expected to exceed the capacity during the PM peak hour. ~~-~~The addition of project traffic would exacerbate these deficient conditions.

Eight Mile Road/I-5 Northbound Ramps – ~~the~~ The 95th percentile vehicle queue at this intersection is projected to be contained in the available storage during the AM peak hour. ~~-~~During the PM peak hour, the northbound vehicle queue could periodically spillback to the freeway mainline. ~~-~~The addition project traffic would exacerbate this deficient condition. ~~-~~The eastbound left-turn movement could periodically extend through the southbound ramp intersection. ~~-~~

Mariners Drive/Whitewater Lane – Vehicle queues are expected to spillback at this intersection past the driveways of single-family houses, making it difficult for residents to access their homes. ~~-~~

Mariners Drive/Blackswain Place – Vehicle queue spillback at this intersection is expected to be excessive for the southbound movement during the AM peak hour, spilling back through Whitewater Lane, and the northbound movement, spilling back through Sturgeon Road during the PM peak hour. ~~-~~

Mariners Drive/Sturgeon Road – Vehicle queue spillback at this intersection is expected to be excessive for the southbound movement during the AM peak hour, spilling back beyond Blackswain Place, and the northbound movement during the PM peak hour. ~~-~~

Hammer Lane/Mariners Drive – The southbound queue is expected to extend between 1,000 feet and 1,500 prior to the addition of project traffic during both peak hours. ~~-~~The addition of project traffic would increase the 95th percentile queue by over 500 feet. ~~-~~Although this level of vehicle queuing would not affect the operation of adjacent intersections, it would impact the ability of residents on Mariners Drive to access the driveways serving the apartment complexes on Mariners Drive. ~~-~~Additionally, the westbound left-turn queue is expected to spillback to the through lanes prior to the addition of project traffic. ~~-~~

Hammer Lane/I-5 Southbound Ramps –The 95th percentile vehicle queue at this intersection is projected to be contained in the available storage during the AM peak hour. ~~-~~During the PM peak hour, the westbound left-turn queue is expected to spill pack through the northbound ramp intersection. ~~-~~The proposed project would not increase traffic on this movement.

Hammer Lane/I-5 Northbound Ramps – The 95th percentile vehicle queue at this intersection is projected to be contained in the available storage during the AM peak hour. ~~-~~During the PM peak hour, the northbound vehicle queue could periodically spillback to the freeway mainline. ~~-~~The addition project traffic would exacerbate this deficient condition. ~~-~~The eastbound through movement could periodically extend through the southbound ramp intersection. ~~-~~

Hammer Lane/Kelley Drive – The 95th percentile vehicle queues for the southbound left-turn, northbound left-turn, and eastbound left-turn movements are expected to extend beyond the available vehicle storage. ~~-~~The addition of project traffic would increase vehicle queues. ~~-~~

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Hammer Lane/Pershing Avenue – The 95th percentile vehicle queue for the northbound left-turn movement is expected to be approximately 900 feet in PM peak hour prior to the addition of project traffic, exceeding the available storage capacity. The addition of project traffic would increase the queue by 125 feet, further exacerbating the effects of queue spillback on through traffic.

Hammer Lane/Thornton Road – The 95th percentile vehicle queue for the southbound left-turn is expected to by approximately 900 feet in the PM peak hour. The addition of project traffic would not increase the southbound left-turn queue.

Hammer Lane/Lower Sacramento Road – The 95th percentile vehicle queue at this intersection is not expected to spillback through adjacent intersections with the addition of project traffic in the near-term condition during either the AM or PM peak hours. However, the 95th percentile southbound left-turn queue is expected to exceed 650 feet in the PM peak hour prior to the addition of project traffic. The addition of project traffic would not increase the 95th percentile vehicle queue.

Measures to reduce vehicle queue spillback are discussed in the mitigation section.

Traffic Signal Warrant Analysis: The results of the signal warrant analysis presented in **Table 4.7.J** shows that the peak hour traffic signal warrant would be satisfied at the Otto Drive/Mariners Drive intersection prior to the addition of project traffic. The addition of project traffic would cause the Mariners Drive/Sturgeon Road intersection to meet the peak hour signal warrant.

Table 4.7.J: Existing plus Approved Projects Without and With Project Conditions Peak Hour Signal Warrants[1]

	Intersection	Existing plus Approved Projects	Existing Plus Approved Projects plus Project
8.	Otto Drive/Mariners Drive	Met	Met
11.	Mariners Drive/Whitewater Lane	Not Met	Not Met
12.	Mariners Drive/Blackswain Place	Not Met	Not Met
13.	Mariners Drive/Sturgeon Road	Not Met	Met

Source: Fehr & Peers, 2007.
[1]*Based on Federal Highway Administration's MUTCD, 2003*

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.K.** The analysis results indicate that, with the addition of project traffic, I-5 northbound south of Hammer Lane would degrade to LOS F during the PM peak hour and I-5 southbound south of Hammer Lane would degrade to LOS F during the AM peak hour and LOS E during the PM peak hour.

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Table 4.7.K: 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			Percent Increase
		Volume	Density[1]	LOS[2]	Volume	Density[1]	LOS[2]	
North of Eight Mile Road - Northbound	AM	2,386	12	B	2,478	13	B	3.9
	PM	2,795	14	B	2,846	15	B	1.8
North of Eight Mile Road - Southbound	AM	3,230	17	B	3,263	17	B	1.0
	PM	4,257	22	C	4,344	23	C	2.0
South of Eight Mile Road - Northbound	AM	3,293	17	B	3,293	17	B	0.0
	PM	5,050	27	D	5,050	27	D	0.0
South of Eight Mile Road - Southbound	AM	5,129	27	D	5,129	27	D	0.0
	PM	5,424	30	D	5,424	30	D	0.0
South of Hammer Lane - Northbound	AM	3,742	19	C	3,921	20	C	4.8
	PM	6,497	**42**	**E**	6,977	***>45***	***F***	***7.4***
South of Hammer Lane - Southbound	AM	6,194	**38**	**E**	6,702	***>45***	***F***	***8.2***
	PM	5,949	35	D	6,230	***38***	***E***	4.7

Source: Fehr & Peers, 2007
*Notes: **Bold:** indicates deficient service level. **Bold/Italics** Indicates significant project impact (i.e. the addition of project traffic results in deficient LOS E or F conditions, or increases traffic volumes by more than 5 percent on a segment already operating at a deficient LOS E or F).*
[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.

Impact TRAF-1a, b, c, d, e and f: The project would contribute to or result in unacceptable service levels at six signalized intersections under Existing plus Approved Projects plus Project conditions. If the addition of project traffic increases delay by more than 5 seconds, this is considered a significant impact under Streets and Highways Goal 1.9.

Impact TRAF-1a. Eight Mile Road/I-5 Northbound Ramps. Project traffic would worsen unacceptable LOS F conditions and increase intersection delay by more than five seconds during the PM peak hour. This is considered ***significant.***

Mitigation Measure TRAF-1a. 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 applicant shall contribute their fair share ~~The project's fair share contribution~~ towards improvements that would result in acceptable service levels at this interchange, reducing the ~~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 impact would remain ***significant-and-unavoidable.***

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Although the ultimate configuration for this intersection will be determined through the PA/ED process, the provision of a northbound loop off-ramp would result in acceptable service levels at this interchange. A loop off-ramp would also minimize the potential for vehicle queue spillback from this off-ramp to the freeway mainline.

Impact TRAF-1b, Hammer Lane/Mariners Drive. Project traffic would worsen unacceptable conditions during both the AM and PM peak hours and increase average intersection delay by more than 5 seconds. Vehicle queue spillback is projected to be excessive at this intersection, particularly for the southbound movement. This is considered ***significant.***

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Mitigation Measure TRAF-1b: 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 applicant shall contribute their fair share towards improvements that would result in acceptable service levels at this interchange, reducing the project's impact to a less-than-significant level. ~~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 impact 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 addition of project traffic and reduce queue spillback were identified. Modifying the southbound approach within the existing right-of-way to provide dual left-turn lanes and a through-right shared lane in addition to signal modifications, would result in acceptable intersection operations. These improvements shall be implemented by the project applicant. With implementation of this mitigation measure, the impact would be reduced to a ***less-than-significant*** level, as shown in **Table 4.7.L**.

Impact TRAF-1c. Hammer Lane/Kelley Drive. Project traffic would result in LOS E conditions during both the AM and PM peak hours. This is considered ***significant.***

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Mitigation Measure TRAF-1c. 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/Kelley Drive intersection. An improved intersection configuration with the goal of providing acceptable service levels will be identified through the PA/ED process. The project applicant shall contribute their fair share towards improvements that would result in acceptable service levels at this interchange, reducing the project's impact to a less-than-significant level. ~~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 impact 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 restriping the northbound through/right-turn shared lane to a left-turn/through/right-turn shared lane and signal modifications to provide north-south split phasing and a southbound right-turn overlap phase. This improvement would also alleviate vehicle queue spillback at this intersection.

Impact TRAF-1d. Hammer Lane/Pershing Avenue. Project traffic would worsen unacceptable LOS E by more than five seconds during the PM peak hour. The project would also increase the 95th percentile vehicle queue for the northbound left-turn movement by 125 feet. This is considered ***significant.***

Mitigation Measures TRAF-1d. The project applicant shall construct ~~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. Construction of~~ a second northbound left-turn lane. This improvement would result in acceptable service levels at this intersection and would reduce the effects of vehicle queue spillback from the northbound left-turn lane, reducing the project's impact to a less-than-significant level. Each left-turn pocket should provide 300 feet of vehicle storage. However, as this intersection is located in San Joaquin County Jurisdiction and implementation of this measure cannot be assured by City of Stockton, this impact would remain ***significant-and-unavoidable.***

Impact TRAF-1e. Hammer Lane/Thornton Road. Project traffic would increase traffic through the Hammer Lane/Thornton Road intersection, which is projected to operate at an unacceptable LOS E prior to the addition of project traffic. However, the addition of project traffic would not increase average delay. Therefore, this impact is considered ***less-than-significant*** ~~and no mitigation is required.~~

Mitigation Measure TRAF-1e. The project impact at this location is less-than-significant. No mitigation is required.

Impact TRAF-1f. Hammer Lane/Lower Sacramento Road. Project traffic would increase traffic through the Hammer Lane/ Lower Sacramento Road intersection, which is projected to operate at an unacceptable LOS E prior to the addition of project traffic. The addition of project traffic would increase delay by one second. As this is less than the "greater than 5 second increase" threshold, this impact is ***less-than-significant***. ~~No mitigation is necessary.~~

Mitigation Measure TRAF-1f. The project impact at this location is less-than-significant. No mitigation is required.

Impact TRAF-2a, ~~2b, 2~~b, c, and ~~2~~d: The proposed project would contribute to or result in unacceptable service levels at four unsignalized intersections. This is considered a significant impact under Streets and Highways Goals 1.8 and 1.9.

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With the construction of the bridge over Bear Creek and the extension of Trinity Parkway to Otto Drive, traffic volumes on Mariners Drive are expected to increase due to this new north/south roadway connecting Hammer Lane and Eight Mile Road (Hammer Lane to Mariners Drive to Otto Drive to Trinity Parkway to Eight Mile Road). The addition of traffic from The Preserve would exacerbate already deficient conditions during the PM peak hour and result in deficient operations during the AM peak hour. Although the Mariners Drive/Whitewater Lane intersection would operate at an overall acceptable service level, as north-south through traffic does not have to stop, the side-street movement would experience excessive delay.

Impact TRAF-2a. Otto Drive/Mariners Drive. The addition of project traffic would degrade the overall operation of this intersection to an unacceptable service level during the AM and PM peak hours. Peak hour volume signal warrants would be satisfied prior to the addition of project traffic. This is considered ***significant***.

Impact TRAF-2b. Mariners Drive/Whitewater Lane. With the addition of project traffic, the side street movements would degrade to LOS E and LOS F during the AM and PM peak hours, respectively, and excessive queuing would be experienced. Although the intersection would continue to operate at an overall acceptable service level, and the peak hour traffic signal warrant would not be satisfied, this is a ***potentially significant*** impact.

Impact TRAF-2c. Mariners Drive/Blackswain Place. The addition of project traffic would result in LOS F conditions, from LOS A conditions, during the AM peak hour and worsen LOS F conditions during the PM peak hour. Excessive queuing would be also experienced, although the peak hour volume signal warrants would not be satisfied with the addition of project traffic. This is considered ***significant***.

Impact TRAF-2d. Mariners Drive/Sturgeon Road. The addition of project traffic would result in LOS F conditions, from LOS A conditions, during the AM peak hour and worsen LOS F conditions during the PM peak hour. Excessive queuing would be also experienced. Peak hour signal warrants would be satisfied prior to the addition of project traffic. This is considered ***significant***.

~~**Mitigation Measure TRAF-2a, b, 2c, and 2d:**~~ Several alternatives were reviewed to mitigate the project's impact on Mariners Drive:

> ***Signalize the intersections on Mariners Drive*** – ~~while~~While implementation of this measure would result in acceptable service levels at all intersections, the traffic signals would only be needed until the Trinity Parkway extension connecting Otto Drive to Hammer Lane is constructed. With construction of the Trinity Parkway extension, traffic would decrease on Mariners Drive, resulting in acceptable service levels at the intersections of Otto Drive, Whitewater Lane, Blackswain Place, and Sturgeon Road with Mariners Drive. Therefore, signalization of these intersections is not recommended. (Signalization of the Mariners Drive/Otto Drive intersection would be needed, however, when the Otto Drive interchange is constructed.)
>
> ***Delay the opening of the Bear Creek Bridge until Trinity Parkway is constructed to Hammer Lane and limit the number of homes constructed during the first phase*** –

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Delaying the opening of the Bear Creek bridge until Trinity Parkway is constructed to Hammer Lane would not attract through traffic on Mariners Drive. Without the connection to the north, thereby routing all traffic generated by The Preserve through Mariners Drive, approximately 500 single family homes could be constructed without resulting degrading intersection operations on Mariners Drive. Enrollment at the proposed elementary school would have to be limited to students who reside in the neighborhood. A fire station may also need to be constructed to provide emergency services to the residents of The Preserve as well as the existing residents of the Twin Creeks Estates neighborhood given the level of development and limited access. Alternatively, access over the Bear Creek Bridge could be limited to emergency vehicles only until Trinity Parkway is extended to Hammer Lane.

Although the intersections along Mariners Drive would operate at an acceptable LOS D or better during both peak hours, traffic from The Preserve would increase traffic on Mariners Drive by approximately 5,300 vehicles per day, including 450 vehicles during the AM peak hour and 500 vehicles during the PM peak hour. This level of traffic increase would be noticeable to the existing residents of the Twin Creeks Estates neighborhood and could create a livability impact within the neighborhood, as it would increase traffic on Mariners Drive by 8 vehicles per minute during the PM peak hour (5 northbound and 3 southbound).

Restricting development in the first phase to 300 single family homes would generate and additional 5 cars per minute (3 northbound and 2 southbound) on Mariners Drive during the PM peak hour.

Construct Trinity Parkway to Hammer Lane – ~~construction of~~ Construction of Trinity Parkway, connecting Otto Drive ~~to~~ to ~~Mariners~~ Hammer Lane, in conjunction with installation of traffic calming on Mariners Drive between Otto Drive and Sturgeon Road to discourage the use of Mariners Drive would allow for full built-out of the project. In conjunction with the construction of Trinity Parkway to Otto Drive, additional improvements would be needed at the Otto Drive/Trinity Parkway intersection to provide ~~, including:~~

- ~~Traffic signal installation~~
- ~~1 northbound left-turn lanes (300 feet of storage)~~
- ~~1 northbound through lane~~
- ~~1 northbound through-right shared lane~~
- ~~1 southbound left-turn lane (300 feet of storage)~~
- ~~1 northbound through lane~~
- ~~1 northbound through-right shared lane~~
- ~~1 eastbound left-turn lane (200 feet of storage)~~
- ~~1 eastbound through lane~~
- ~~1 eastbound right-turn only lane~~
- ~~1 westbound left-turn lane (100 feet of storage)~~
- ~~1 westbound through-right shared lane~~

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~~This lane configuration would provide~~ acceptable intersection operations until the Otto Drive interchange is constructed or Shima Tract is developed.

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Mitigation Measure TRAF-2a, b, 2c, and 2d. The project applicant shall construct Trinity Parkway from Otto Drive to Hammer Lane and construct the Otto Drive/Trinity Parkway intersection to include the following: geometry:

- Signalization

- ~~Traffic signal installation~~
- 1 northbound left-turn lane (300 feet of storage)
- 1 northbound through lane
- 1 northbound through-right shared lane
- 1 southbound left-turn lane (300 feet of storage)
- 1 southbound through lane
- 1 southbound through-right shared lane
- 1 eastbound left-turn lane (200 feet of storage)
- 1 eastbound through lane
- 1 eastbound right-turn only lane
- 1 westbound left-turn lane (100 feet of storage)
- 1 westbound through-right shared lane

As the ~~Due to~~ approval for any ~~process of agencies outside the control of the City of Stockton, whose approval is needed to construct~~ Trinity Parkway construction south of Mosher Slough~~Parkway from Otto Drive~~ to Hammer Lane is currently under the jurisdiction of San Joaquin County, the City cannot ensure a completion date for the roadway. Additionally, development of Atlas Tract could precede construction and occupation of projects assumed in the analysis of near-term conditions, such as the proposed Wal-Mart and/or Sam's Club at Park West Place, resulting in near-term conditions on Mariners Drive better than presented in Table 4.7.I. Without development of those projects, up to 370 single family homes could be built on Atlas Tract and LOS D or better would be maintained at the intersections on Mariners Drive during both the AM and PM peak hours, as shown in Table 4.7.L.

Should construction of the project precede development of the proposed Wal-Mart and/or Sam's Club at Park West Place, the project applicant shall be permitted to construct up to 370 single-family homes subject to the project applicant retaining a transportation engineering firm from the City's list of qualified firms to perform biannual monitoring~~with installation~~ of the intersections on Mariners Drive: Otto Drive, Whitewater Lane, Blackswain Place, Sturgeon Road, and Hammer Lane. This monitoring shall include AM and PM peak period intersection turning movement counts and peak hour level of service calculations for review by City staff. Further, the applicant shall install the following improvements at the Otto Drive/Trinity Parkway intersection:

- Traffic signal installation
- 1 southbound left-turn lane
- 1 southbound right-turn lane
- 1 eastbound left-turn lane
- 1 eastbound through lane
- 1 westbound right-turn lane

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- 1 westbound through lane

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Subsequent to development of 370 single family homes, the project applicant shall retain a transportation engineering firm from the City's list of qualified firms to perform biannual monitoring of the intersections on Mariners Drive: Otto Drive, Whitewater Lane, Blackswain Place, and Sturgeon Road. This monitoring shall include AM and PM peak period intersection turning movement counts and peak hour level of service calculations for review by City staff.

Should any of the intersections operate deficiently (i.e. average conditions of LOS E or F),); the extension of Trinity Parkway would need to occur prior to continued~~additional~~ project development. Should excess capacity exist on Mariners Drive, the number of homes that could be accommodated within the available capacity shall be calculated for review and approval by the City. 's Traffic Engineer. This intersection monitoring shall occur biannually until the Trinity Parkway extension from Otto Drive to Hammer Lane is complete and open to traffic.

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Should occupation of the Wal-Mart and Sam's Club at Park West Place occur prior to issuance of the first building permit for the project, and the Trinity Parkway extension from Otto Drive to Hammer Lane is not complete, the project applicant shall perform the bi-annual monitoring detailed above. Should it be determined there is additional capacity, no more than 370 units may be constructed.

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Peak hour intersection levels of service with the extension of Trinity Parkway from Otto Drive to Hammer Lane are shown on **Table 4.7.L**. Construction of the Trinity Parkway extension ~~is the preferred mitigation alternative and~~ would reduce the project's impact in the Existing plus Approved Project condition to a ***less-than-significant*** level. ~~-~~This measure would also reduce vehicle queuing at the intersections on Mariners Drive. ~~-~~

Table 4.7.L: Existing plus Approved Projects Without and With Project Intersection Levels of Service With Mitigation

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Intersection	Peak Hour	Existing plus Approved Projects		Existing plus Approved Projects plus Project		Existing plus Approved Projects plus Project With Mitigation[2]		Existing plus Approved Projects plus Project With Mitigation Monitoring[3]	
		Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS	Delay[1]	LOS

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4.	Eight Mile Road/ I-5 ~~Northbound~~ NB Ramps	AM PM	32 **>80**	C **F**	34 ***>80***	C **F**	10 7	A A	28 44	C D
7.	Otto Drive/ Trinity Parkway	AM PM	N/A	N/A	27 29	C C	42 50	D D	15 14	B B
8.	Otto Drive/ Mariners Drive	AM PM	9 (EB 13) 11 (EB 16)	A (EB B) B (EB C)	***>50(~~EB~~ >50)*** ***43 (~~EB~~ >50)***	***F* (F)** ***E* (F)**	6 (~~EB~~ 11) 5 (~~EB~~ 10)	A (B) A (B)	9 (13) 8 (12)	A (B) A (B)
11.	Mariners Drive/ Whitewater Lane	AM PM	0 (EB 15) 0 (EB 27)	A (EB B) A (EB D)	1 (***~~EB~~ 43***) (***~~EB~~ >50***	A (**E**) A (**F**)	1 (~~EB~~ 11) 1 (~~EB~~ 11)	A (B) A (B)	0 (16) 0 (18)	A (C) A (C)
12.	Mariners Drive/ Blackswain ~~Place~~Pl.	AM PM	16 **>50**	C **F**	***>50*** ***>50***	***F*** ***F***	10 9	A A	31	C
13.	Mariners Drive/ Sturgeon Road	AM PM	18 **>50**	C **F**	***>50*** ***>50***	***F*** ***F***	10 10	A A	19 35	C D
15.	Hammer Lane/ Mariners Drive	AM PM	**63** **>80**	**E** **F**	***>80*** ***>80***	***F*** ***F***	39 34	D C	39 35	D C
18.	Hammer Lane/ Kelley Drive	AM PM	50 48	D D	***63*** ***57***	***E*** ***E***	52 54	D D	52 47	D D
20.	Hammer Lane/ Pershing Avenue	AM PM	30 **62**	C **E**	30 ***74***	C ***E***	27 43	C D	29 50	C D

Intersection		Peak Hour	Existing plus Approved Projects		Existing plus Approved Projects plus Project		Existing plus Approved Projects plus Project With Mitigation	
			Delay [1]	LOS	Delay [1]	LOS	Delay [1]	LOS
4.	Eight Mile Road/I-5 Northbound Ramps	AM PM	32 **>80**	C **F**	34 ***>80***	C **F**	10 7	A A
7.	Otto Drive/Trinity Parkway[2]	AM PM	N/A	N/A	27 29	C C	42 50	D D
8.	Otto Drive/Mariners Drive[2]	AM PM	9 (EB 13) 11 (EB 16)	A (EB B) B (EB C)	***>50(EB >50*** ***43 (EB >50)***	***F* (F)** ***E* (F)**	6 (EB 11) 5 (EB 10)	A (B) A (B)
11.	Mariners Drive/ Whitewater Lane[2]	AM PM	0 (EB 15) 0 (EB 27)	A (EB B) A (EB D)	1 (**EB 43**) 1 (**EB >50**)	A (**E**) A (**F**)	1 (EB 11) 1 (EB 11)	A (B) A (B)
12.	Mariners Drive/ Blackswain Place[2]	AM PM	16 **>50**	C **F**	***>50*** ***>50***	***F*** ***F***	10 9	A A
13.	Mariners Drive/ Sturgeon Road[2]	AM PM	18 **>50**	C **F**	***>50*** ***>50***	***F*** ***F***	10 10	A A

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	Intersection	Peak Hour	Existing plus Approved Projects		Existing plus Approved Projects plus Project		Existing plus Approved Projects plus Project With Mitigation	
			Delay [1]	LOS	Delay [1]	LOS	Delay [1]	LOS
15.	Hammer Lane/ Mariners Drive[2]	AM	**63**	**E**	***>80***	***F***	39	D
		PM	**>80**	**F**	***>80***	***F***	34	C
18.	Hammer Lane/Kelley Drive	AM	50	D	***63***	***E***	52	D
		PM	48	D	***57***	***E***	54	D
20.	Hammer Lane/ Pershing Avenue	AM	30	C	30	C	27	C
		PM	**62**	**E**	***74***	***E***	43	D

Source: Fehr & Peers, 2007.
Notes: ***Bold:*** *indicates deficient service level.* ***Bold/Italics*** *Indicates significant project impact.*
[1] Intersection average control delay (in seconds per vehicle) and LOS calculated using the 2000 Highway Capacity Manual (Transportation Research Board) method.
[2] The levels of service ~~report~~ in this column~~table~~ reflect intersection operations with the extension of Trinity Parkway to Hammer Lane for intersections 7, 8, 11, 12, 13 and 15..
[3] The levels of service in this column reflect development of 370 single family homes and no development of Wal-Mart or Sam's Club for intersections 4, 7, 8, 11, 12 13, and 20. At intersection 15, service levels also reflect measure TRAF-1b and at intersection 18, service levels also reflect measure TRAF-1c in addition to the 370 single family homes and no development of Wal-Mart or Sam's Club.

Figure 4.7.20 at the end of this section summarizes the recommended intersection mitigation measures.

Impact TRAF-3: The proposed project would worsen the operation of two freeway segments projected to operate at unacceptable service levels without the proposed project, I-5 south of Hammer Lane, northbound and southbound. This is considered a significant impact under Streets and Highways Goal 1.8 and 1.9.

The addition of project traffic would worsen LOS E conditions to LOS F on the northbound segment of I-5 south of Hammer Lane during the PM peak hour and increase traffic volumes by more than 5 percent on a roadway projected to operate at a deficient service level. Vehicle queue spillback from the northbound off-ramp at Hammer Lane could also spillback to the main line impeding through travel on I-5. This is considered ***significant***.

The addition of project traffic would also worsen LOS E operations to LOS F and result in LOS E operations on I-5 southbound, south of Hammer Lane during the AM and PM peak hours, respectively. As the addition of traffic from the proposed project would increase traffic volumes by more than 5 percent on a roadway projected to operate at a deficient service level (AM peak hour) and result in deficient operations (PM peak hour), this is considered ***significant***.

Mitigation Measures TRAF-3: Widening of I-5 to provide four mixed-flow travel lanes per direction, in conjunction with interchange improvements and the provision of auxiliary lanes would reduce this impact to a less-than-significant level, as shown in **Table 4.7.M**. 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

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sponsored by Caltrans. However, the Plan notes that full project funding has not yet been identified.

Additionally, a PA/ED is currently being prepared for the I-5/Hammer Lane interchange. An improved interchange configuration that would minimize the potential for vehicle queue spill from the off-ramp to the freeway mainline will be identified through the PA/ED process. The project applicant shall contribute their fair share towards improvements that would result in acceptable service levels on I-5 south of the Hammer Lane interchange, reducing the project's impact to a less-than-significant level~~The project's fair share contribution towards improvements that would result in acceptable service levels on I-5 and the Hammer Lane interchange would reduce the project's impact to a less-than-significant level.~~ . . However, because these improvements are not fully funded, implementation cannot be assured and this impact would remain ***significant and unavoidable.***

Table 4.7.M: Existing Plus Approved Project Conditions Freeway Segment LOS With Mitigation[1,2]

Segment	Peak Hour	Existing plus Approved Projects			Existing plus Approved Projects Plus Project			Existing plus Approved plus Project With Mitigation	
		Vol.	Density	LOS	Vol.	Density	LOS	Density	LOS
S/O Hammer Lane - NB	AM	3,742	19	C	3,921	20	C	15	B
	PM	6,497	**42**	**E**	6,977	***>45***	***F***	28	D
S/O Hammer Lane - SB	AM	6,194	**38**	**E**	6,702	***>45***	***F***	27	D
	PM	5,949	35	D	6,230	***38***	***E***	24	C

Source: Fehr & Peers, 2007.
*Notes: **Bold:** indicates deficient service level. **Bold/Italics** 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.N shows the project contribution, in addition to the proportion of existing traffic and traffic from approved developments, at each mitigated intersection and freeway segment.

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Table 4.7.N: Project Contribution to Impacted Intersections and Freeway Segments Under Existing plus Approved Projects plus Project Conditions

FACILITY	TRAFFIC CONTRIBUTION [1]					
	EXISTING		APPROVED DEVELOPMENT[2]		THE PRESERVE[3]	
	VOLUME	PERCENT	VOLUME	PERCENT	VOLUME	PERCENT
Eight Mile Road/I-5 Northbound Ramps	1,835	32 %	3,658	65 %	175	3 %
Otto Drive/Trinity Parkway	0	0 %	1,325	51 %	1,275	49 %
Otto Drive/Mariners Drive	148	6 %	1,377	57 %	892	37 %
Mariners Drive/Whitewater Lane	159	7 %	1,367	56 %	892	37 %
Mariners Drive/Blackswain Place	183	8 %	1,266	54 %	892	38 %
Mariners Drive/Sturgeon Road	303	12 %	1,263	52 %	892	36 %
Hammer Lane/Mariners Drive	1,658	41 %	1,507	37 %	892	22 %
Hammer Lane/Kelley Drive	4,545	76 %	1,288	21 %	191	3 %
Hammer Lane/Pershing Drive	4,328	75 %	1,260	22 %	191	3 %
I-5 Northbound South of Hammer Lane	4,494	64 %	2,003	29 %	480	7 %
I-5 Southbound South of Hammer Lane	4,155	67 %	1,795	29 %	280	4 %

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 was selected as the project generates more PM peak hour than AM peak hour trips.
[2] Approved development includes Spanos Park West as currently proposed. as well as Westlake at Spanos Park West.
[3] Actual fair share shall be calculated based on the final project size and resulting trip generation estimates.

e. Future 2025 Conditions Without Project

2025 Without Project 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 4.7.14**. Major roadway improvements in the study area include:

4. Construction of a new I-5 interchange at Otto Drive
5. Extension of Trinity Parkway/Trinity Parkway to March Lane

City of Stockton staff directed adjustments to the model land use used to develop "base" forecasts that reflect land uses in the study area that were not accounted for in the *1990 General Plan* including:

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2. The constructed portions of Park West Place
3. Westlake at Spanos Park West
4. Crystal Bay (The Spanos Parcel)

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Future 2025 Without Project peak hour traffic volumes at each study intersections are shown on **Figure 4.7.15**.

Analysis of Future 2025 Without Project Conditions: The results of the intersection level of service analysis are shown in **Table 4.7.O**. The following intersections are projected to operate unacceptably:

25. Eight Mile Road/I-5 Southbound Ramps – LOS E (PM peak hour)
26. Eight Mile Road/I-5 Northbound Ramps – LOS F (PM peak hour)
27. McAuliffe Drive/Trinity Parkway – LOS F (PM peak hour)
28. Otto Drive/I-5 Southbound Ramps – LOS E (PM peak hour)
29. Hammer Lane/Kelley Drive – LOS F (PM Peak Hour)
30. Hammer Lane/Pershing Avenue – LOS F (PM peak hour)
31. Hammer Lane/Thornton Road – LOS E (PM peak hour)
32. Hammer Lane/Lower Sacramento Road –LOS E (PM peak hour)

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The remaining intersections are projected to operate at LOS D or better prior to the addition of project traffic. Operations of the intersections on Mainers Drive are projected to improve over the Existing Plus Approved Projects condition due to the construction of Trinity Parkway between Otto Drive and Hammer Lane, which would provide an alternative north-south roadway to Mariners Drive.

Peak hour traffic signal warrants were reviewed for the Future 2025 Without Project scenario, as presented in **Table 4.7.P**. This review indicates that the Peak hour volume signal warrant would not be satisfied at any of the unsignalized intersections.

I-5 forecasts were developed using the *1990 General Plan* Stockton 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.Q. 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 peak hour).

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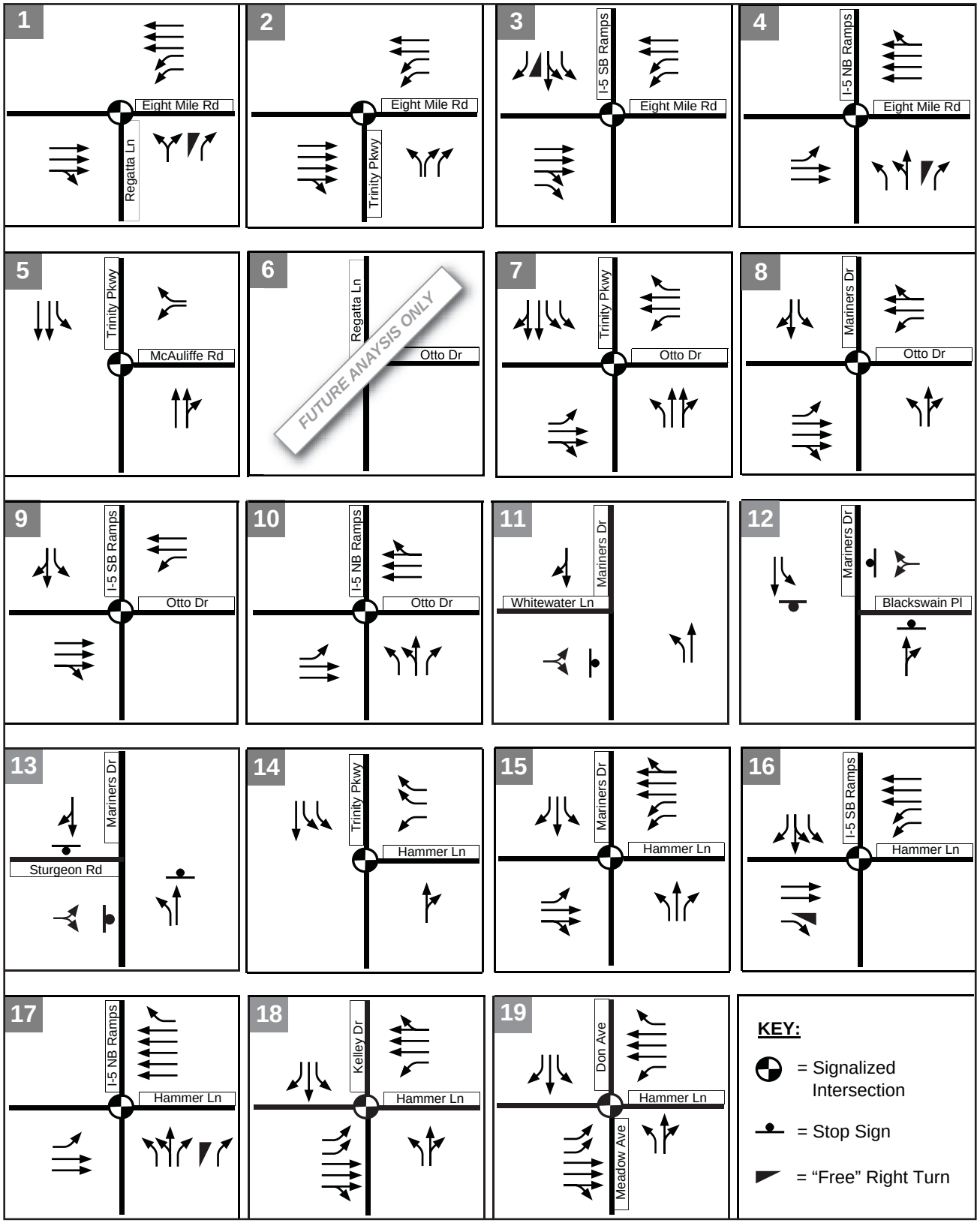

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FUTURE 2025 LANE CONFIGURATIONS AND TRAFFIC CONTROL

FIGURE 4.7-14A

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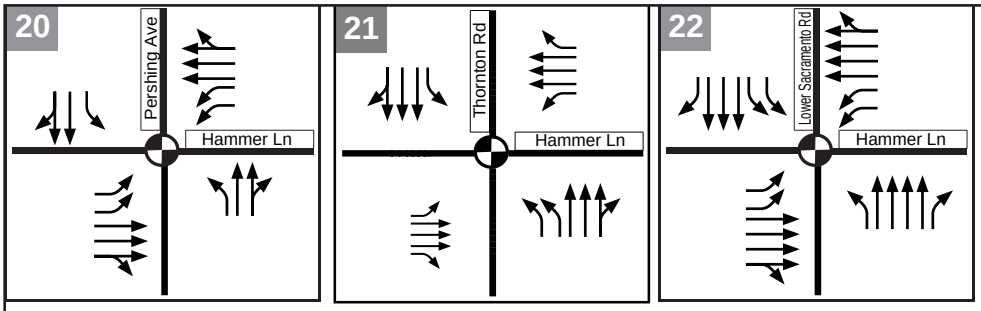

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LANE CONFIGURATIONS AND TRAFFIC CONTROL

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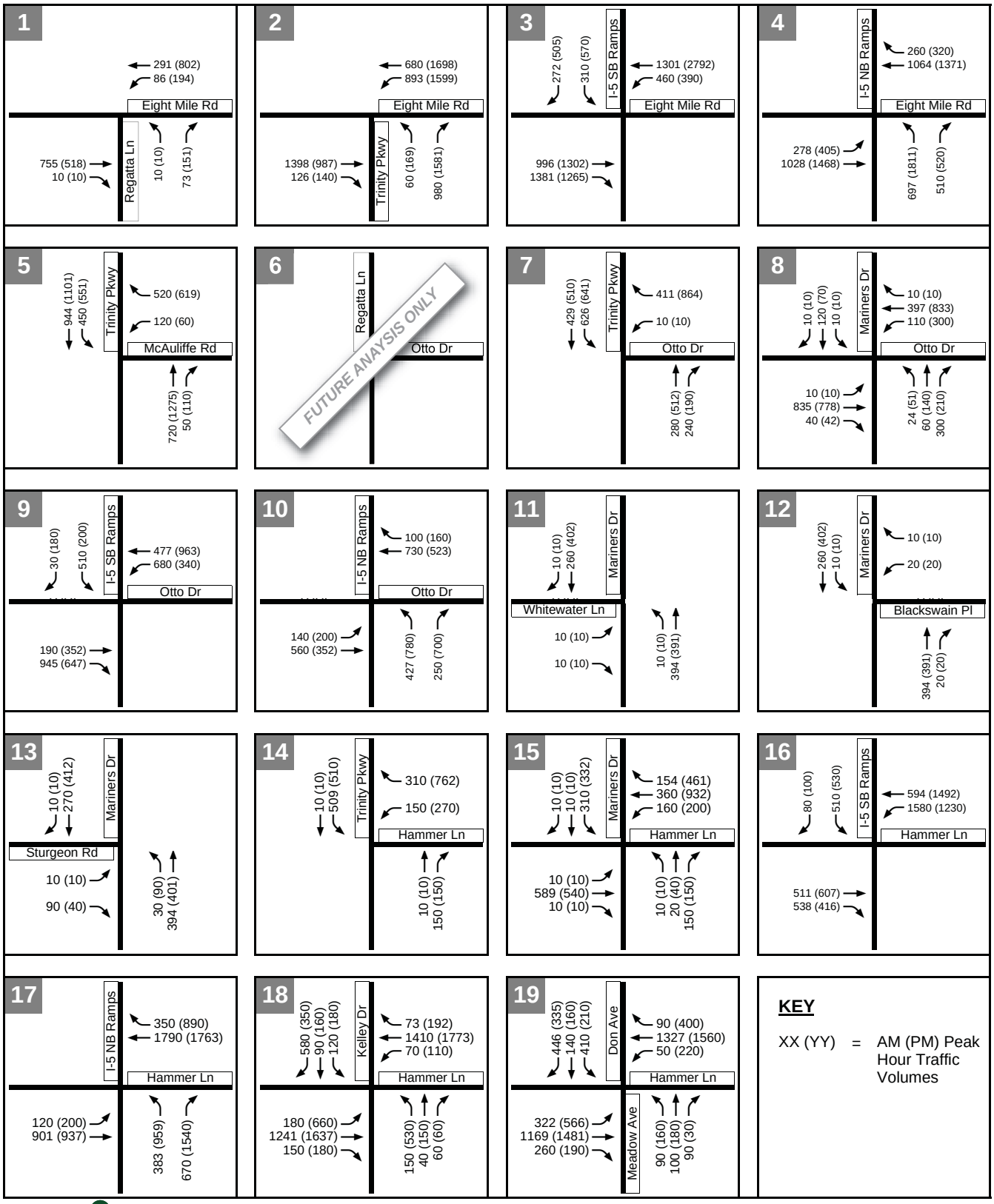
FIGURE 4.7-14B



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FUTURE 2025 WITHOUT PROJECT PEAK HOUR TRAFFIC VOLUMES

FIGURE 4.7-15A

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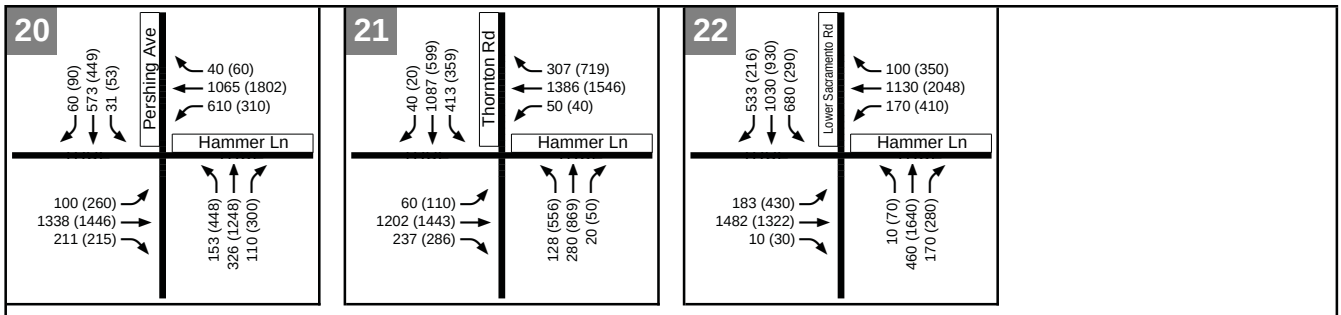

KEY

XX (YY) = AM (PM) Peak Hour Traffic Volumes

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FUTURE 2025 WITHOUT PROJECT PEAK HOUR TRAFFIC VOLUMES

FIGURE 4.7-15B

f. Future 2025 Conditions With Project

2025 With Project Forecasts: Traffic from the proposed project was added to the Future 2025 Without Project forecasts, as shown on **Figure 4.7.16**.

Intersection Levels of Service: Each study intersection was analyzed as summarized in **Table 4.7.O**. The analysis results indicate that the addition of project traffic would not degrade the operations of any intersection projected to operate at an acceptable service without the project to an unacceptable level; however, the addition of project traffic is projected to worsen the deficient operations at the following intersections:

- Eight Mile Road/I-5 Southbound Ramps (TRAF-4a)
- Eight Mile Road/I-5 Northbound Ramps (TRAF-4b)
- McAuliffe Drive/Trinity Parkway (TRAF-4c)
- Otto Drive/I-5 Southbound Ramps (TRAF-4d)
- Hammer Lane/Kelley Drive (TRAF-4e)
- Hammer Lane/Pershing Avenue (TRAF-4f)
- Hammer Lane/Thornton Road (TRAF-4g)
- Hammer Lane/Lower Sacramento Road (TRAF-4h)

All other intersections would operate acceptably (i.e., LOS D or better) with the addition of project traffic. The potential for vehicle queue spillback was also evaluated. As roadway improvement plans are being developed and implemented to accommodate planned and potential developments, further analysis should be completed to minimize the potential for vehicle queue spillback. Level of service and queuing worksheets are provided in the Appendix.

Traffic Signal Warrant Analysis: The peak-hour traffic signal warrant was reviewed for the Future 2025 condition, as presented in **Table 4.7.P**. This warrant would not be satisfied at any of the unsignalized study intersections.

Freeway Analysis: Traffic from the proposed project was added to the Future 2025 Without Project peak hour traffic forecasts for I-5. The 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.Q.**

The analysis results indicate that with the addition of project traffic, freeway operations would degrade from LOS E to LOS F for southbound I-5 south of Hammer Lane (AM peak hour) and northbound I-5 south of Hammer Lane (PM peak hour). I-5 southbound, south of Hammer Lane would also degrade from LOS D to LOS E during the PM peak hour with the addition of project traffic. All other freeway study segments would operate at acceptable service levels with the addition of project traffic.

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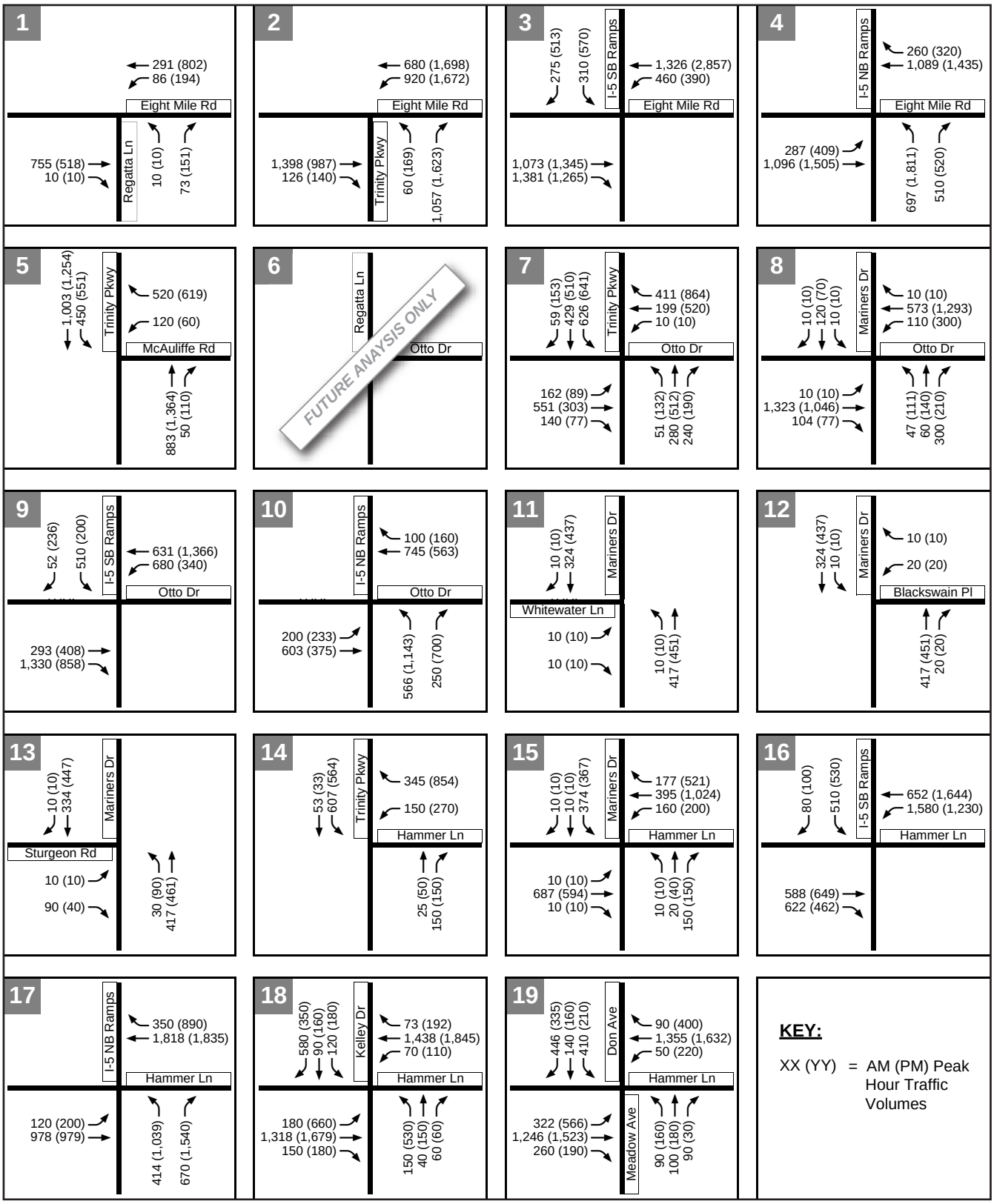

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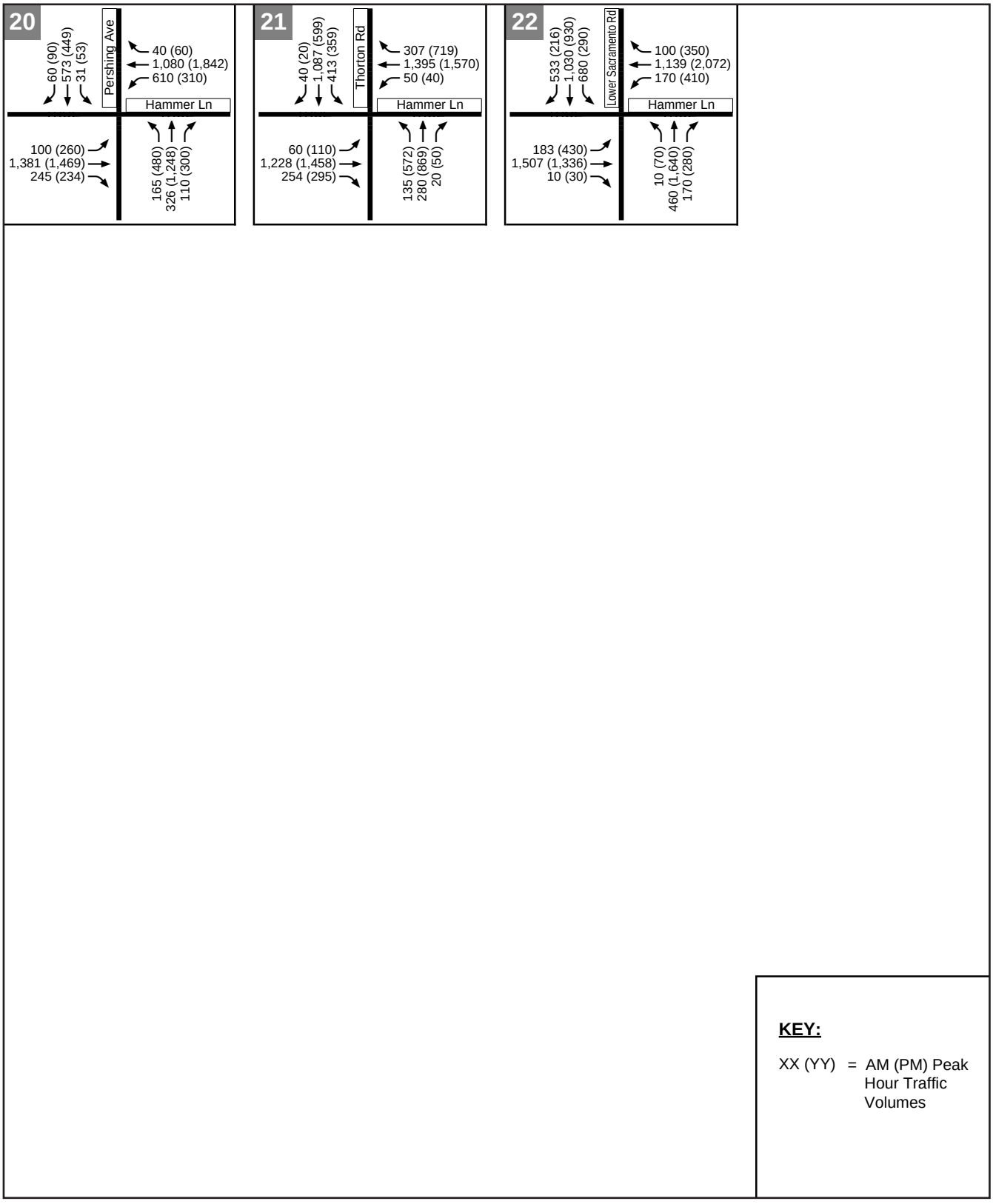
FUTURE 2025 WITH PROJECT PEAK HOUR TRAFFIC VOLUMES

FIGURE 4.7-16A



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FUTURE 2025 WITH PROJECT PEAK HOUR TRAFFIC VOLUMES

FIGURE 4.7-16B

Table 4.7.O: Future 2025 Without and With Project Peak Hour Intersection LOS

	Intersection	Control[1]	Peak Hour	Future 2025 Without Project		Future 2025 With Project	
				Delay[2,3]	LOS	Delay[2,3]	LOS
1.	Eight Mile Road/Regatta Lane	Signal	AM PM	10 16	A B	10 16	A B
2.	Eight Mile Road/Trinity Parkway	Signal	AM PM	23 29	C C	26 33	C C
3.	Eight Mile Road/I-5 Southbound Ramps	Signal	AM PM	19 **56**	B **E**	22 **60**	B **E**
4.	Eight Mile Road/I-5 Northbound Ramps	Signal	AM PM	22 > **80**	C **F**	23 > **80**	C **F**
5.	McAuliffe Drive/Trinity Parkway	Signal	AM PM	31 > **80**	C **F**	39 > ***80***	D **F**
6.	Otto Drive/Regatta Lane	N/A	N/A	N/A	N/A	N/A	N/A
7.	Otto Drive/Trinity Parkway	Signal	AM PM	33 26	C C	36 45	D D
8.	Otto Drive/Mariners Drive	Signal	AM PM	19 23	B C	21 25	C C
9.	Otto Drive/I-5 Southbound Ramps	Signal	AM PM	**66** 14	**E** B	>***80*** 13	***F*** B
10.	Otto Drive/I-5 Northbound Ramps	Signal	AM PM	30 32	C C	32 36	C C
11.	Mariners Drive/ Whitewater Lane	SSSC	AM PM	1 (EB 12) 0 (EB 14)	A (B) A (B)	0 (EB 13) 0 (EB 16)	A (B) A (C)
12.	Mariners Drive/ Blackswain Place	AWSC	AM PM	12 14	B B	13 16	B B
13.	Mariners Drive/Sturgeon Road	AWSC	AM PM	13 14	B B	14 16	B B
14.	Hammer Lane/Trinity Parkway	Signal	AM PM	34 21	C C	33 21	C C
15.	Hammer Lane/Mariners Drive	Signal	AM PM	24 21	C C	26 23	C C
16.	Hammer Lane/I-5 Southbound Ramps	Signal	AM PM	25 19	C B	35 19	C B
17.	Hammer Lane/I-5 Northbound Ramps	Signal	AM PM	13 42	B D	21 37	C D
18.	Hammer Lane/Kelley Drive	Signal	AM PM	48 > **80**	D **F**	50 > ***80***	D ***F***
19.	Hammer Lane/Meadow Avenue	Signal	AM PM	34 33	C C	35 34	C C

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Intersection		Control[1]	Peak Hour	Future 2025 Without Project		Future 2025 With Project	
				Delay [2, 3]	LOS	Delay [2, 3]	LOS
20.	Hammer Lane/Pershing Avenue	Signal	AM PM	48 **> 80**	D **F**	52 ***> 80***	D ***F***
21.	Hammer Lane/Thornton Road	Signal	AM PM	32 **61**	C **E**	32 **61**	C **E**
22.	Hammer Lane/Lower Sacramento Road	Signal	AM PM	36 **57**	D **E**	36 **58**	D **E**

Source: Fehr & Peers, 2007.
Bold: *Indicates deficient service level.* ***Bold/Italics*** *indicates significant project impact (i.e. the addition of project traffic results in deficient LOS E or F conditions, or increases average delay by more than 5 seconds at an intersection already operating at a deficient LOS E or F).*
[1]Signal = Signalized intersection; AWSC = All-way stop-controlled intersection; SSSC = Side-street stop-controlled intersection.
[2]Signalized intersection average control delay (in seconds per vehicle) and LOS calculated using the Highway Capacity Manual (Transportation Research Board, 2000) method.
[3]All-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.

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Table 4.7.P: Future 2025 Without and With Project Conditions Peak Hour Signal Warrant Analysis[1]

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Intersection		Future 2025 Without Project	Future 2025 With Project
11.	Mariners Drive/Whitewater Lane	Not Met	Not Met
12.	Mariners Drive/Blackswain Place	Not Met	Not Met
13.	Mariners Drive/Sturgeon Road	Not Met	Not Met

Source: Fehr & Peers, 2007.
Notes: [1]Based on methods presented in Federal Highway Administration's MUTCD, 2003.

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Table 4.7.Q: Future 2025 Without and With Project Conditions I-5 Freeway Segment Levels of Service

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Segment	Peak Hour	Future 2025 Without Project			Future 2025 With Project			Percent Increase
		Volume	Density[1]	LOS[2]	Volume	Density[1]	LOS[2]	
North of Eight Mile Road – Northbound	AM PM	2,913 3,275	15 17	B B	2,987 3,316	15 17	B B	2.5 1.3
North of Eight Mile Road – Southbound	AM PM	3,876 4,914	20 26	C C	3,902 4,984	20 26	C D	0.7 1.4
Eight Mile Road to Otto Drive - Northbound	AM PM	3,310 4,461	17 23	B C	3,375 4,497	17 23	B C	2.0 0.8

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Segment	Peak Hour	Future 2025 Without Project			Future 2025 With Project			Percent Increase
		Volume	Density[1]	LOS[2]	Volume	Density[1]	LOS[2]	
Eight Mile Road to Otto Drive – Southbound	AM PM	4,914 5,194	26 28	C D	4,937 5,255	26 28	D D	0.5 1.2
Otto Drive to Hammer Lane – Northbound	AM PM	3,662 5,485	19 30	C D	3,809 5,879	20 34	C D	4.0 7.2
Otto Drive to Hammer Lane – Southbound	AM PM	5,529 5,616	31 31	D D	5,946 5,846	35 34	D D	7.5 4.1
South of Hammer Lane – Northbound	AM PM	3,980 6,250	21 **38**	C **E**	4,159 6,730	21 ***>45***	C ***F***	4.5 ***7.7***
South of Hammer Lane – Southbound	AM PM	6,359 5,733	**40** 33	**E** D	6,867 6,013	***>45*** ***36***	***F*** ***E***	***8.0*** 4.9

Source: Fehr & Peers, 2007.
Bold: *Indicates deficient service level.* ***Bold/Italics*** *Indicates significant project impact (i.e. the addition of project traffic results in deficient LOS E or F conditions, or increases traffic volumes by more than 5 percent on a segment already operating at a deficient LOS E or F).* [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.*

Impact TRAF-4a, b, c, d, e and f: The proposed project would increase traffic through 8 intersections projected to operate at an unacceptable service levels prior to the addition of project traffic. If the addition of project traffic increases delay by more than 5 seconds, this is considered a significant impact under Streets and Highways Goal 1.9.

Impact TRAF-4a. Eight Mile Road/I-5 Southbound Ramp. This intersection is projected to operate at a deficient LOS E prior to the addition of project traffic. With the addition of project traffic, delay at this intersection would increase by 4 seconds. As this is less than the "greater than 5 second increase" threshold, this impact is ***less-than-significant***. ~~No mitigation is necessary.~~

Mitigation Measure TRAF-4a: The project impact at this location is less-than-significant. No mitigation is required.

Impact TRAF-4b. Eight Mile Road/I-5 Northbound Ramp. This intersection is projected to operate at a deficient LOS F prior to the addition of project traffic. With the addition of project traffic, delay at this intersection would increase by 2 seconds. As this is less than the "greater than 5 second increase" threshold, this impact is ***less-than-significant***. ~~No mitigation is necessary.~~

Mitigation Measure TRAF-4b: The project impact at this location is less-than-significant. No mitigation is required.

Impact TRAF-4c. McAuliffe Drive/Trinity Parkway. This intersection is projected to operate at a deficient LOS F prior to the addition of project traffic. With the addition of project traffic, delay at this intersection would increase from 109 seconds to 115 seconds, a 6-second increase. This is a ***significant*** impact, as the addition of traffic from the proposed project would increase delay through this intersection by more than 5 seconds.

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Mitigation Measure TRAF-4c: The project applicant shall ~~modify~~ contribute their fair share to intersection improvements that would result in acceptable intersection operations: ~~the intersection to~~ provide a shared left-turn-right-turn lane and a right-turn lane on the westbound approach. With implementation of this mitigation, the project impact would be to a ***less-than-significant*** level, as shown in **Table 4.7.R**.

Impact TRAF-4d. Otto Drive/I-5 Southbound Ramps. This intersection is projected to operate at a deficient LOS E prior to the addition of project traffic. With the addition of project traffic, delay at this intersection would increase from 68 seconds to 218 seconds. This is a ***significant*** impact, as the addition of traffic from the proposed project would increase delay through this intersection by more than 5 seconds.

Mitigation Measure TRAF-4d: A Project Approval/Environmental Document (PA/ED) is currently being prepared for interchanges on I-5 including the I-5/Otto Drive interchange. An improved intersection configuration with the goal of providing acceptable service levels will be identified through the PA/ED process. The project applicant shall contribute their fair share towards improvements that would result in acceptable service levels at this interchange, reducing the project's impact to a less-than-significant level. ~~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 impact would remain ***significant-and-unavoidable.***

Although the ultimate configuration for this intersection will be determined through the PA/ED process, modifications to the intersection design that would provide acceptable operations in 2025 with the project were identified. These improvements include dual westbound left-turn lanes, and an eastbound through lane, through-right shared lane and right-turn only lane in addition to two receiving lanes on the on-ramp. With implementation of this measure, the impact would be reduced to a less-than-significant level, as shown on **Table 4.7.R**.

Impact TRAF-4e. Hammer Lane/Kelley Drive. This intersection is projected to operate at a deficient LOS F prior to the addition of project traffic. With the addition of project traffic, delay at this intersection would increase from 117 seconds to 123 seconds, a 6-second increase. This is a ***significant*** impact, as the addition of traffic from the proposed project would increase delay through this intersection by more than 5 seconds.

Mitigation Measure TRAF-4e: 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/Kelley Drive intersection. An improved intersection configuration with the goal of providing acceptable service levels will be identified through the PA/ED process. The project applicant shall contribute their fair share towards improvements that would result in acceptable service levels at this interchange, reducing the project's impact to a less-than-significant level. ~~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

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these improvements are not yet identified nor fully funded, this impact 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 2025 operations with the project were identified. These improvements include restriping the northbound through/right-turn shared lane to a left-turn/through/right-turn shared lane and signal modifications to provide north-south split phasing and a southbound right-turn overlap phase. These improvements shall be implemented by the project applicant. Although the intersection would continue to operate as LOS F, overall intersection delay with the project, with mitigation, would be less than without the project, without mitigation. With implementation of this mitigation measure, the impact would be reduced to a ***less-than-significant*** level, as shown on **Table 4.7.R**.

Impact TRAF-4f. Hammer Lane/Pershing Avenue. This intersection is projected to operate at a deficient LOS F prior to the addition of project traffic. With the addition of project traffic, delay at this intersection would increase from 105 seconds to 111 seconds, a 6-second increase. This is a ***significant*** impact, as the addition of traffic from the proposed project would increase delay through this intersection by more than 5 seconds.

Mitigation Measure TRAF-4f: Mitigation of this impact would require two left-turn lanes (300 feet each), two through lanes, and a right-turn lane (200 feet) on the northbound approach, two left-turn lanes (300 feet each), three through lanes, and a right-turn lane on the eastbound approach, and two left-turn lanes (300 feet each), three through lanes, and a shared through/right-turn lane on the westbound approach. The project applicant shall contribute their fair share towards this improvement, reducing the project impact to a *less-than-significant* level. However, as this intersection is located within San Joaquin County and its implementation cannot be assured by the City of Stockton, this impact is *significant-and-unavoidable*.

Impact TRAF-4g. Hammer Lane/Thornton Road. This intersection is projected to operate at a deficient LOS E prior to the addition of project traffic. With the addition of project traffic, delay at this intersection would remain at 61 seconds. As this is less than the "greater than 5 second increase" threshold, this impact is ***less-than-significant***. ~~No mitigation is necessary.~~

Mitigation Measure TRAF-4g: The project impact at this location is less-than-significant. No mitigation is required.

Impact TRAF-4h. Hammer Lane/Lower Sacramento Road. This intersection is projected to operate at a deficient LOS E prior to the addition of project traffic during the PM peak hour. With the addition of project traffic, delay at this intersection would increase by 1 second during the PM peak hour. As this is less than the "greater than 5 second increase" threshold, this impact is ***less-than-significant***. ~~No mitigation is necessary.~~

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Mitigation Measure TRAF-4h: The project impact at this location is less-than-significant. No mitigation is required.

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Table 4.7.R: 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]	LOS	Delay [1]	LOS	Delay [1]	LOS
5.	McAuliffe Drive/ Trinity Parkway	AM	31	C	36	D	24	C
		PM	**109**	**F**	***115***	***F***	**61**	**E**
9.	Otto Drive/I-5 Southbound Ramps	AM	**66**	**E**	***218***	***F***	36	D
		PM	14	B	13	B	15	B
18.	Hammer Lane/Kelley Drive	AM	48	D	50	D	50	D
		PM	**117**	**F**	***123***	***F***	**97**	**F**
20.	Hammer Lane/Pershing Avenue	AM	48	D	52	D	37	D
		PM	**108**	**F**	***114***	***F***	51	D

Source: Fehr & Peers, 2007.
***Bold:** Indicates deficient service level. **Bold/Italics** indicates 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.

Figure 4.7.20 at the end of this section summarizes the recommended intersection mitigation measures.

Impact TRAF-5: The proposed project would degrade operations on two freeway segments, I-5 south of Hammer Lane, northbound and southbound. This is considered a significant impact under Streets and Highways Goal 1.8 and 1.9.

The analysis results indicate that with addition of project traffic, freeway operations would degrade from LOS E to LOS F for southbound I-5 south of Hammer Lane (AM peak hour) and northbound I-5 south of Hammer Lane (PM peak hour). I-5 southbound, south of Hammer Lane would also degrade from LOS D to LOS E during the PM peak hour with the addition of project traffic. As project traffic would either increase traffic volumes by more than 5 percent or result in deficient operations, this is considered a significant impact for these two freeway segments.

Mitigation Measures TRAF-5: Mitigation of this project impact would require four lanes per direction on I-5 between Otto Drive and Hammer Lane and south of Hammer Lane (see **Table 4.7.S**). 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.***

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Table 4.7.S: 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	3,980	21	C	4,159	21	C	16	B
	PM	6,250	**38**	**E**	6,730	**>45**	**F**	27	D
South of Hammer Lane – Southbound	AM	6,359	**40**	**E**	6,867	**>45**	**F**	28	D
	PM	5,733	33	D	6,013	**36**	**E**	23	C

Source: Fehr & Peers, 2007.
*Notes: **Bold:** Indicates deficient service level. **Bold/Italics** 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.T shows the project contribution, in addition to the proportion of existing traffic and traffic from approved developments, at each mitigated intersection and freeway segment.

Table 4.7.T: Project Contribution to Impacted Intersections and Freeway Segments Under Future 2025 Conditions

Facility	Traffic Contribution [1]					
	Existing		Future 2025 Development		The Preserve	
	Volume	Percent	Volume	Percent	Volume	Percent
McAuliffe Drive/Trinity Parkway	544	14 %	3,172	80 %	242	6 %
Otto Drive/I-5 Southbound Ramps	0	0 %	2,682	79 %	726	21 %
Hammer Lane/Kelley Drive	4,545	76 %	1,312	22 %	125	2 %
Hammer Lane/Pershing Avenue	4,328	64 %	2,353	35 %	114	2 %
I-5 Northbound South of Hammer Lane	4,494	67 %	1,756	26 %	480	7 %
I-5 Southbound South of Hammer Lane	4,155	69 %	1,578	26 %	280	5 %

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 was selected as the project generates more PM peak hour than AM peak hour trips.

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g. Future 2035 Conditions Without Project

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.

Future 2035 lane configurations at the study intersections are shown on **Figure 4.7.17**. In addition to roadway improvements assumed in the 2025 analysis, the 2035 analysis includes:

6. Widening of Thornton Road and Lower Sacramento Road south of Eight Mile Road to six lanes
7. Construction of new interchanges on both I-5 and SR 99 approximately 1-mile north of Eight Mile Road
8. Extension of Otto Drive west to the Regatta Lane
9. Widening of I-5 south of Otto Drive to 10 lanes
10. Widening of I-5 north of Otto Drive through Eight Mile Road to 8 lanes

Adjustments were made to the model land use to develop "base" forecasts that reflect only the constructed portion of Spanos Park West in the study area. In addition, traffic from the proposed Crystal Bay (The Spanos Parcel), proposed Spanos Park West and The Sanctuary (Shima Tract) developments was added manually onto the Future 2035 forecasts. Crystal Bay, Spanos Park West, and The Sanctuary trip generation was based on ITE's *Trip Generation* (7th Edition). Future 2035 Without Project peak hour traffic volumes at each study intersections are shown on **Figure 4.7.18**.

Analysis of Future 2035 Without Project Conditions: The development planned in the 2035 land use projections produces large amounts of traffic in the study area. As shown in **Table 4.7.U**, the following intersections are projected to operate at deficient levels in the Future 2035 scenario:

- Eight Mile Road/Trinity Parkway – LOS E (PM peak hour)
- 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)
- Otto Drive/Trinity Parkway – LOS E (AM and PM peak hours)
- 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 E (AM and PM peak hours)
- Hammer Lane/I-5 Southbound Ramps – LOS F (AM peak hour)
- Hammer Lane/I-5 Northbound Ramps – LOS F (PM peak hour)
- Hammer Lane/Kelley Drive – LOS F (AM and PM peak hours)
- Hammer Lane/Meadow Avenue/Don Avenue – LOS E (PM peak hour)
- Hammer Lane/Pershing Avenue – LOS F (AM and PM peak hours)
- Hammer Lane/Thornton Road – LOS E (PM peak hour)
5. Hammer Lane/Lower Sacramento Road – LOS E (PM peak hour)

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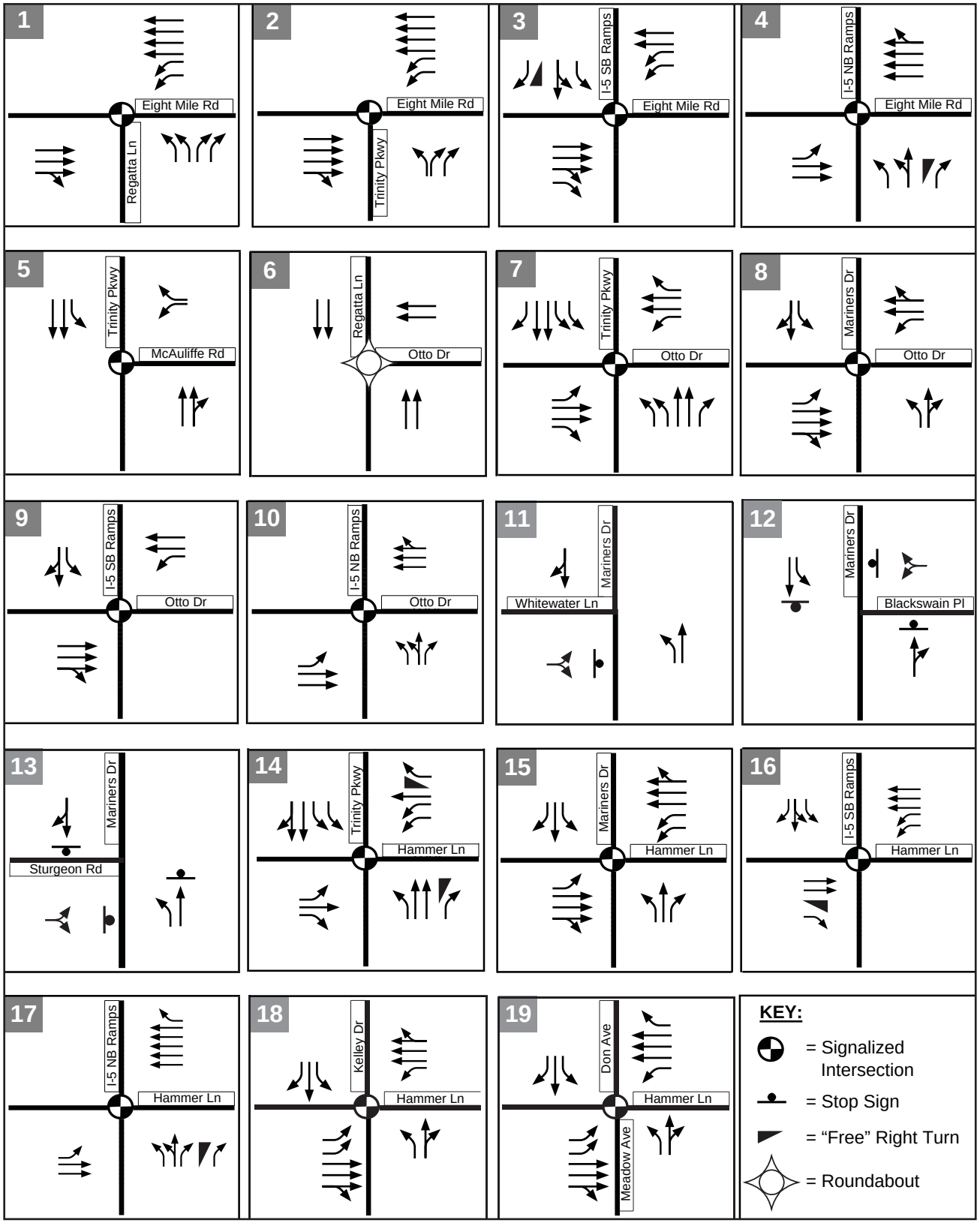

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FUTURE 2035
LANE CONFIGURATIONS AND TRAFFIC CONTROL
FIGURE 4.7-17A

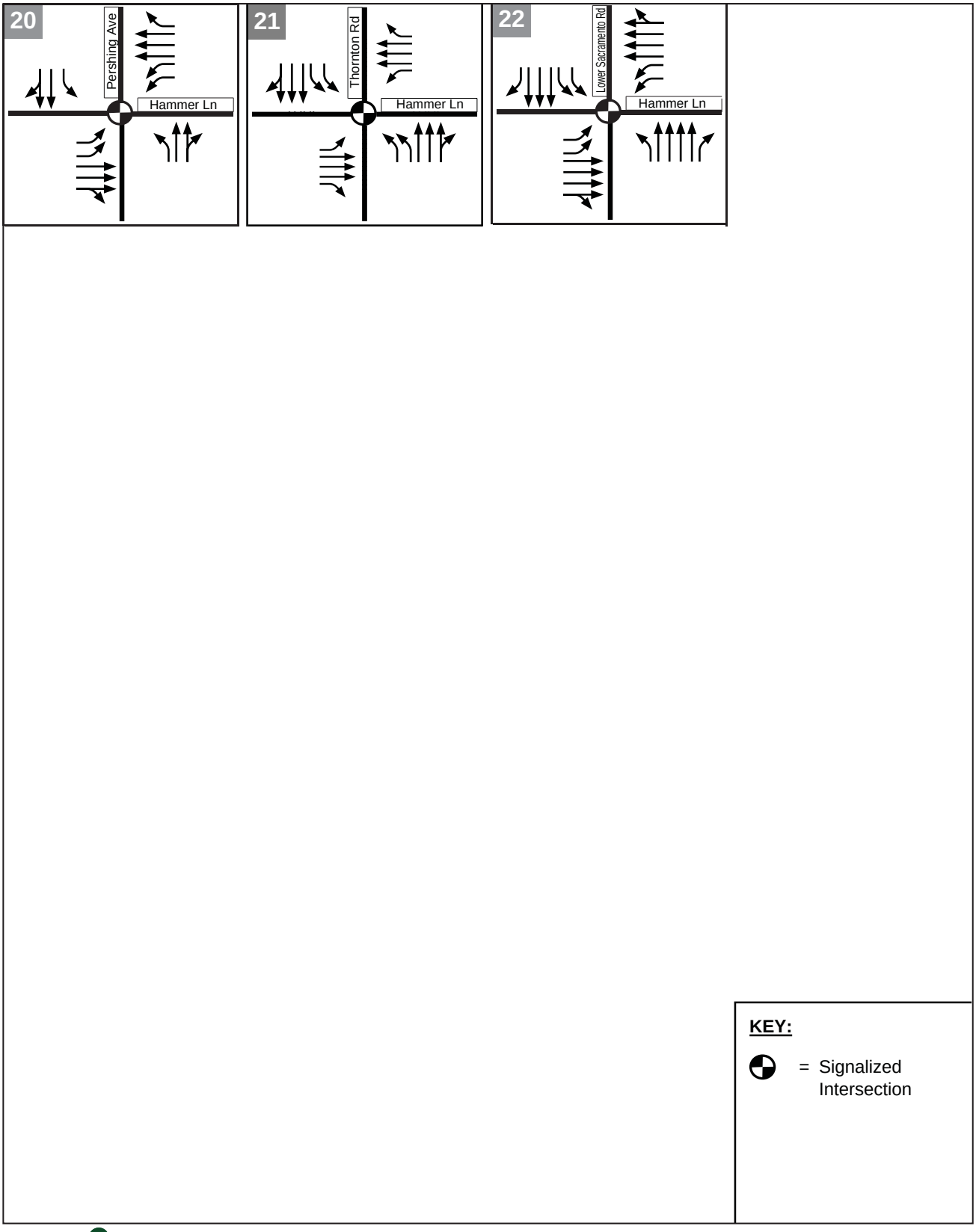

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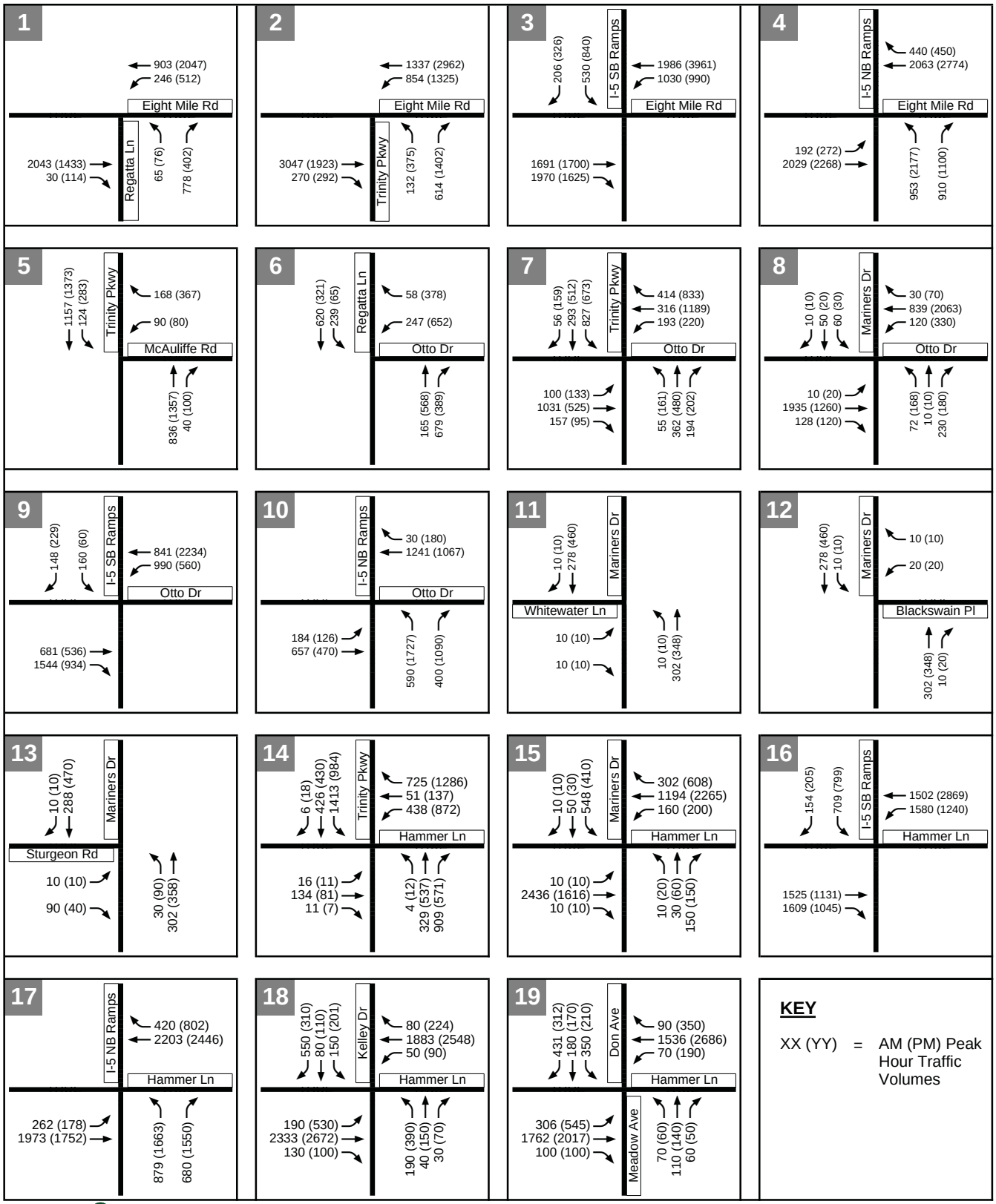
FIGURE 4.7-17B



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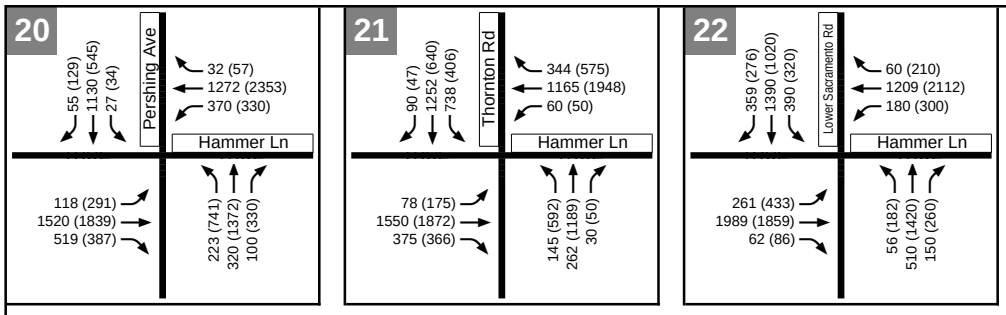
FUTURE 2035 WITHOUT PROJECT PEAK HOUR TRAFFIC VOLUMES

FIGURE 4.7-18A



KEY

XX (YY) = AM (PM) Peak Hour Traffic Volumes

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FUTURE 2035 WITHOUT PROJECT PEAK HOUR TRAFFIC VOLUMES

FIGURE 4.7-18B

A Project Approval/Environmental Document (PA/ED) is currently being conducted to identify alternative interchange configurations to accommodate future traffic projections at the Eight Mile Road, Otto Drive, and Hammer Lane ramp intersections. At this time the PA/ED has not been approved; therefore, the traffic analysis assumed the existing or currently planned lane configuration for each interchange and interchange ramp intersections.

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Peak hour traffic signal warrants were reviewed for the Future 2035 Without Project scenario, as presented in **Table 4.7.V**. This review indicates that the Peak hour volume signal warrant would not be satisfied at any of the unsignalized intersections.

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 from north of Eight Mile Road to south of Hammer Lane was analyzed based on the traffic volumes shown in **Table 4.7.W**. Under Future 2035 Without Project condition, the freeway segments north of Otto Drive are projected to operate at LOS D or better, while the freeway segments south of Otto Drive are projected to operate at unacceptable service levels during one or both peak hours.

h. Future 2035 Conditions With Project

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Future 2035 With Project Forecasts: Traffic from the proposed project was added to the Future 2035 Without Project forecasts, as shown on **Figure 4.7.19**. Each study intersection was analyzed as summarized in **Table 4.7.U**.

Analysis of Future 2035 With Project Conditions: The addition of project traffic would worsen the operation of the intersections projected to operate at deficient service levels prior to the addition of project traffic. No intersections would degrade from acceptable to unacceptable operations in the 2035 condition with the addition of project traffic. As roadway improvement plans are being developed and implemented to accommodate planned and potential developments, further analysis should be completed to minimize the potential for vehicle queue spillback. Level of service and queuing worksheets are provided in the Appendix.

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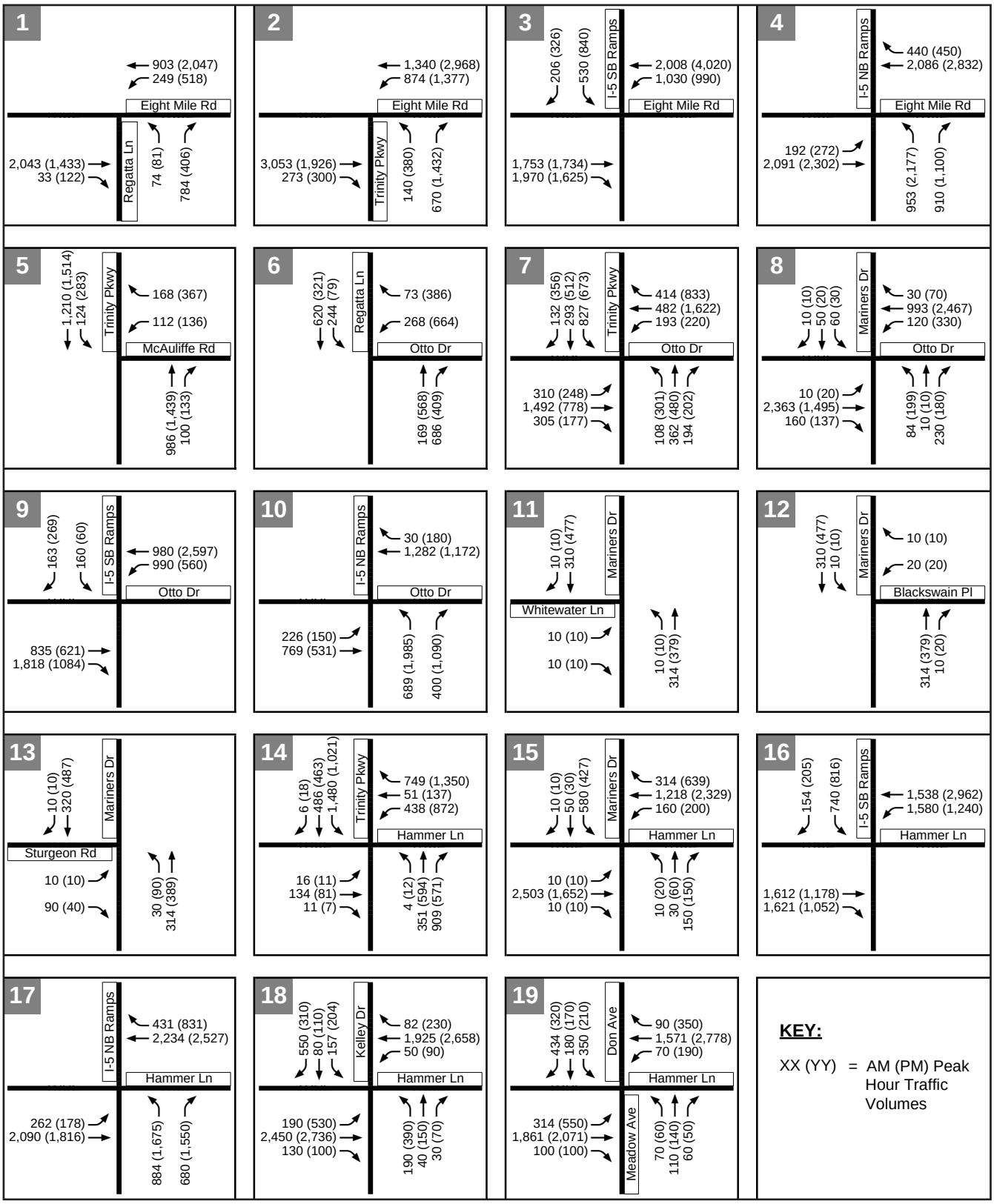

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FUTURE 2035 WITH PROJECT PEAK HOUR TRAFFIC VOLUMES

FIGURE 4.7-19A

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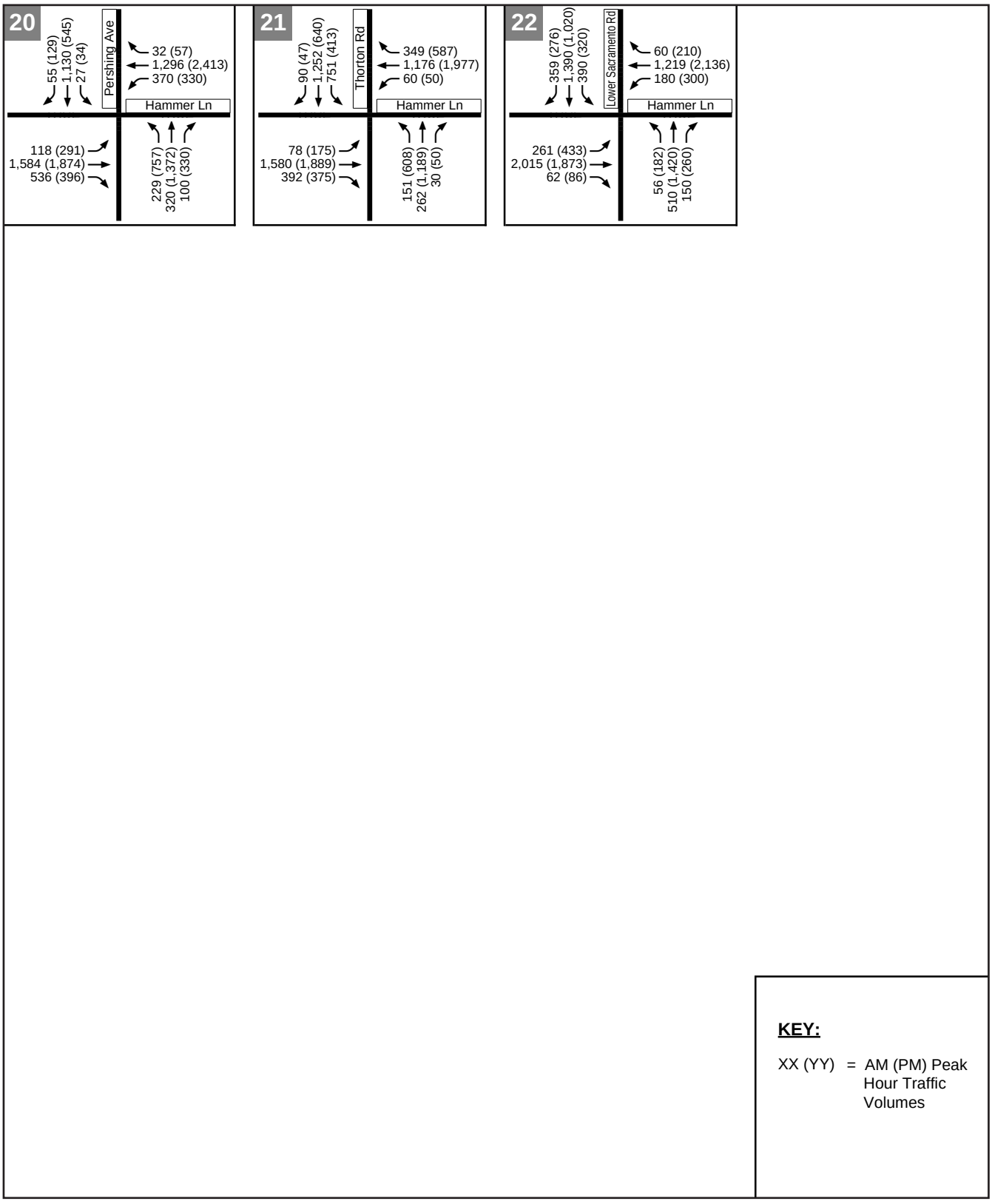

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FUTURE 2035 WITH PROJECT PEAK HOUR TRAFFIC VOLUMES

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FIGURE 4.7-19B

Table 4.7.U: 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/Regatta Lane	Signal	AM	34	C	35	C
			PM	21	C	21	C
2.	Eight Mile Road/Trinity Parkway	Signal	AM	52	D	53	D
			PM	**58**	**E**	**63**	**E**
3.	Eight Mile Road/I-5 Southbound Ramps	Signal	AM	> **80**	**F**	> **80**	**F**
			PM	> **80**	**F**	> ***80***	***F***
4.	Eight Mile Road/I-5 Northbound Ramps	Signal	AM	26	C	33	C
			PM	> **80**	**F**	>***80***	***F***
5.	McAuliffe Drive/Trinity Parkway	Signal	AM	12	B	12	B
			PM	46	D	50	D
6.	Otto Drive/Regatta Lane	Roundabout	AM	3	A	3	A
			PM	3	A	3	A
7.	Otto Drive/Trinity Parkway	Signal	AM	**56**	**E**	> ***80***	***F***
			PM	**56**	**E**	> ***80***	***F***
8.	Otto Drive/Mariners Drive	Signal	AM	14	B	15	B
			PM	26	C	49	D
9.	Otto Drive/I-5 Southbound Ramps	Signal	AM	>**80**	**F**	> ***80***	***F***
			PM	25	C	>***80***	***F***
10.	Otto Drive/I-5 Northbound Ramps	Signal	AM	34	C	37	D
			PM	> **80**	**F**	> ***80***	***F***
11.	Mariners Drive/Whitewater Lane	SSSC	AM	1 (12)	A (B)	1 (12)	A (B)
			PM	0 (15)	A (B)	0 (15)	A (B)
12.	Mariners Drive/Blackswain Place	AWSC	AM	11	B	11	B
			PM	15	B	16	C
13.	Mariners Drive/Sturgeon Road	AWSC	AM	11	B	12	B
			PM	14	B	16	C
14.	Hammer Lane/Trinity Parkway	Signal	AM	33	C	46	D
			PM	34	C	46	D
15.	Hammer Lane/Mariners Drive	Signal	AM	**70**	**E**	***79***	***E***
			PM	**60**	**E**	***71***	***E***
16.	Hammer Lane/I-5 Southbound Ramps	Signal	AM	> **80**	**F**	> ***80***	***F***
			PM	42	D	45	D
17.	Hammer Lane/I-5 Northbound Ramps	Signal	AM	34	C	48	D
			PM	> **80**	**F**	> ***80***	***F***
18.	Hammer Lane/Kelley Drive	Signal	AM	> **80**	**F**	> ***80***	***F***

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	Intersection	Control[1]	Peak Hour	Future 2035 Without Project		Future 2035 With Project	
				Delay [2,3]	LOS	Delay [2,3]	LOS
			PM	> **80**	**F**	> ***80***	***F***
19.	Hammer Lane/Meadow Avenue/Don Avenue	Signal	AM	37	D	37	D
			PM	**58**	**E**	**63**	**E**
20.	Hammer Lane/Pershing Avenue	Signal	AM	> **80**	**F**	> ***80***	***F***
			PM	> **80**	**F**	> ***80***	***F***
21.	Hammer Lane/Thornton Road	Signal	AM	38	D	38	D
			PM	**64**	**E**	**66**	**E**
22.	Hammer Lane/Lower Sacramento Road	Signal	AM	36	D	36	D
			PM	**57**	**E**	**58**	**E**

Source: Fehr & Peers, 2007.
*Notes: **Bold:** Indicates deficient service level. **Bold/Italics** indicates significant project impact (i.e. the addition of project traffic results in deficient LOS E or F conditions, or increases average delay by more than 5 seconds at an intersection already operating at a deficient LOS E or F).*
[1] Signal = Signalized intersection; AWSC = All-way stop-controlled intersection; SSSC = Side-street stop-controlled intersection.
[2] Signalized intersection average control delay (in seconds per vehicle) and LOS calculated using the Highway Capacity Manual (Transportation Research Board, 2000) method.
[3] All-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 traffic signal warrant was reviewed for the Future 2035 condition, as presented in **Table 4.7.V**. This warrant would not be satisfied at any of the unsignalized study intersections.

Table 4.7.V: Future 2035 Without and With Project Conditions Peak Hour Signal Warrant Analysis[1]

	Intersection	Future 2035 Without Project	Future 2035 With Project
11.	Mariners Drive/Whitewater Lane	Not Met	Not Met
12.	Mariners Drive/Blackswain Place	Not Met	Not Met
13.	Mariners Drive/Sturgeon Road	Not Met	Not Met

Source: Fehr & Peers, 2007.
Notes: [1] Based on methods presented in Federal Highway Administration's MUTCD, 2003.

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.W**. The analysis results

indicate that the addition of project traffic would add traffic to four freeway segments projected to operate at deficient service levels prior to the addition of project traffic:

9. Northbound south of Hammer Lane
10. Northbound between Otto Drive and Hammer Lane
11. Southbound south of Hammer Lane
12. Southbound between Otto Drive and Hammer Lane

All other freeway study segments would operate at acceptable service levels with the addition of project traffic.

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Table 4.7.W: Future 2035 Without and With Project Conditions I-5 Freeway Segment Levels of Service

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Segment	Peak Hour	Future 2035 Without Project			Future 2035 With Project			Percent Increase
		Volume	Density[1]	LOS[2]	Volume	Density[1]	LOS[2]	
North of Eight Mile Road – Northbound	AM PM	4,353 5,509	13 17	B B	4,399 5,534	14 17	B B	1.1 0.5
North of Eight Mile Road – Southbound	AM PM	6,049 7,602	19 24	C C	6,065 7,646	19 24	C C	0.3 0.6
Eight Mile Road to Otto Drive - Northbound	AM PM	5,525 8,019	17 25	B C	5,571 8,044	17 25	B C	0.8 0.3
Eight Mile Road to Otto Drive – Southbound	AM PM	8,233 8,929	26 29	D D	8,249 8,973	26 29	D D	0.2 0.5
Otto Drive to Hammer Lane – Northbound	AM PM	6,306 10,379	20 **38**	C **E**	6,411 10,659	20 **40**	C **E**	1.7 2.7
Otto Drive to Hammer Lane – Southbound	AM PM	10,453 10,108	**39** **36**	**E** **E**	10,749 10,271	**41** **37**	**E** **E**	2.8 1.6
South of Hammer Lane – Northbound	AM PM	6,919 11,743	21 **>45**	C **F**	7,017 12,005	22 **>45**	C **F**	1.4 2.2
South of Hammer Lane – Southbound	AM PM	11,764 10,680	**>45** **41**	**F** **E**	12,041 10,833	**>45** **42**	**F** **E**	2.4 1.4

Source: Fehr & Peers, 2007.
*Notes: **Bold:** Indicates deficient service level. **Bold/Italics** Indicates significant project impact (i.e. the addition of project traffic results in deficient LOS E or F conditions, or increases traffic volumes by more than 5 percent on a segment already operating at a deficient LOS E or F).*
[1] Density measured in passenger cars per mile per lane.

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[2] *Mainline segment LOS based on vehicle density, according to the Highway Capacity Manual, Transportation Research Board, 2000.*

Impact TRAF-6a through m: The proposed project would worsen the operation of 14 intersections projected to operate at deficient service levels prior to the addition of project traffic. If the addition of project traffic increases the delay by greater than 5 seconds at already deficient intersection, this is considered a significant impact under Streets and Highways Goal 1.9.

Impact TRAF-6a. Eight Mile Road/Trinity Parkway. This intersection is projected to operate at a deficient LOS E prior to the addition of project traffic during the PM peak hour. The addition of project traffic would increase the average delay by 5 seconds during the PM peak hour. As the delay increase is not greater than 5-seconds, this impact is considered ***less-than-significant*** ~~and no mitigation is required.~~

> **Mitigation Measure TRAF-6a:** The project impact at this location is less-than-significant. No mitigation is required.

Impact TRAF-6b. Eight Mile Road/I-5 Southbound Ramps. This intersection is projected to operate at a deficient LOS F prior to the addition of project traffic during the AM and PM peak hours. The addition of project traffic would increase the average delay by 3 seconds during the AM peak hour. Therefore, the project impact at this location is less than significant during the AM peak hour. During the PM peak hour, the addition of project traffic would increase delay by 7 seconds. This is a ***significant*** impact, as the addition of traffic from the proposed project would increase delay through this intersection by more than 5 seconds.

> **Mitigation Measure TRAF-6b.** 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 applicant shall contribute their fair share towards improvements that would result in acceptable service levels at this interchange, reducing the project's impact to a less-than-significant level. ~~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 impact would remain ***significant-and-unavoidable.***
>
> Although the ultimate configuration for this intersection will be determined through the PA/ED process, interchange improvements that could result in acceptable operations include on the westbound approach: dual left-turn lanes, four through lanes; on the southbound approach: a left-turn lane, a shared left-through lane, and dual right-turn only lanes; and on the eastbound approach: two through lanes, a shared through-right lane, and dual right-turn lanes in addition to the construction of three receiving lanes on the on-ramp.

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Impact TRAF-6c. Eight Mile Road/I-5 Northbound Ramps. The addition of project traffic would increase delay at this intersection by 6 seconds during the PM peak hour. This is a ***significant*** impact, as the addition of traffic from the proposed project would increase delay through this intersection by more than 5 seconds.

Mitigation Measure TRAF-6c. 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 applicant shall contribute their fair share towards improvements that would result in acceptable service levels at this interchange, reducing the project's impact to a less-than-significant level. ~~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 impact would remain ***significant-and-unavoidable.***

Although the ultimate configuration for this intersection will be determined through the PA/ED process, interchange improvements that could result in acceptable operations include provision of a northbound loop off-ramp.

Impact TRAF-6d. Otto Drive/Trinity Parkway. The addition of project traffic would worsen LOS E conditions to LOS F during both the AM peak hour and PM peak hours. This is a ***significant*** impact, as the addition of traffic from the proposed project would increase delay through this intersection by more than 5 seconds.

Mitigation Measure TRAF-6d. The project applicant shall contribute its fair share to provide a third eastbound and a third westbound lane through the intersection. Implementation this improvement would reduce the impact to a ***less-than-significant*** level, as shown in **Table 4.7.W**.

Impact TRAF-6e. Otto Drive/I-5 Southbound Ramps. The addition of project traffic would worsen LOS F conditions and increase average delay by more than 5-seconds. This is considered a **significant impact**.

Mitigation Measure TRAF-6e. A Project Approval/Environmental Document (PA/ED) is currently being prepared for interchanges on I-5 including the I-5/Otto Drive interchange. An improved interchange configuration with the goal of providing acceptable service levels will be identified through the PA/ED process. The project applicant shall contribute their fair share towards improvements that would result in acceptable service levels at this interchange, reducing the project's impact to a less-than-significant level. ~~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 impact would remain ***significant-and-unavoidable.***

Although the ultimate configuration for this intersection will be determined through the PA/ED process, interchange improvements that could result in acceptable operations include

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construction of a second westbound left-turn lane, and provision of two through lanes, a through-right shared lane, and a right-turn only lane on the eastbound approach in addition to construction of two receiving lanes on the on-ramp.

Impact TRAF-6f. Otto Drive/I-5 Northbound Ramps. The addition of project traffic would worsen LOS F conditions during the PM peak hour and increase delay by more than 5 seconds. This is considered a **significant impact**.

Mitigation Measure TRAF 6f. A Project Approval/Environmental Document (PA/ED) is currently being prepared for interchanges on I-5 including the I-5/Otto Drive interchange. An improved interchange configuration with the goal of providing acceptable service levels will be identified through the PA/ED process. The project applicant shall contribute their fair share towards improvements that would result in acceptable service levels at this interchange, reducing the project's impact to a less-than-significant level. ~~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 impact would remain ***significant-and-unavoidable.***

Although the ultimate configuration for this intersection will be determined through the PA/ED process, interchange improvements that could result in acceptable operations include provision of a northbound loop off-ramp.

Impact TRAF-6g. ~~Hammer Lane/Mariners Drive.~~ The addition of project traffic would worsen LOS E conditions and increase delay by more than 5-seconds. This is considered a **significant impact**.

Mitigation Measure TRAF 6g. A Project Approval/Environmental Document (PA/ED) is currently being prepared for interchanges on I-5 including the I-5/Hammer Lane interchange and adjacent Hammer Lane/Mariners Drive intersection. An improved interchange configuration with the goal of providing acceptable service levels will be identified through the PA/ED process. The project applicant shall contribute their fair share towards improvements that would result in acceptable service levels at this intersection, reducing the project's impact to a less-than-significant level. ~~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 impact 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 operations with the project were identified. These improvements include provision of dual left-turn lanes and a shared through-right-turn lane on the southbound approach, in addition to signal modifications.

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Impact TRAF-6h. Hammer Lane/I-5 Southbound Ramps. The addition of project traffic would worsen LOS F conditions and increase delay by more than 5 seconds. This is considered a **significant impact**.

Mitigation Measure TRAF 6h. A Project Approval/Environmental Document (PA/ED) is currently being prepared for interchanges on I-5 including the I-5/Hammer Lane interchange. An improved interchange configuration with the goal of providing acceptable service levels will be identified through the PA/ED process. The project applicant shall contribute their fair share towards improvements that would result in acceptable service levels at this interchange, reducing the project's impact to a less-than-significant level. ~~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 impact would remain ***significant-and-unavoidable.***

Although the ultimate configuration for this intersection will be determined through the PA/ED process, interchange improvements that could result in acceptable operations include provision of a southbound loop on-ramp.

Impact TRAF-6i. Hammer Lane/I-5 Northbound Ramps. The addition of project traffic would worsen LOS F conditions during the PM peak hour and increase delay by more than 5-seconds. This is considered a **significant impact**.

Mitigation Measure TRAF 6i. A Project Approval/Environmental Document (PA/ED) is currently being prepared for interchanges on I-5 including the I-5/Hammer Lane interchange. An improved interchange configuration with the goal of providing acceptable service levels will be identified through the PA/ED process. The project applicant shall contribute their fair share towards improvements that would result in acceptable service levels at this interchange, reducing the project's impact to a less-than-significant level. ~~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 impact would remain ***significant-and-unavoidable.***

Although the ultimate configuration for this intersection will be determined through the PA/ED process, interchange improvements that could result in acceptable operations include construction of an additional eastbound through lane and an additional northbound left-turn lane.

Impact TRAF-6j. Hammer Lane/Kelley Drive. This intersection is projected to operate at a deficient LOS F prior to the addition of project traffic during the AM and PM peak hours. The addition of project traffic would increase the average delay by 2 seconds during the AM peak hour, which is less than the greater than 5-second threshold. Therefore, the project impact at his location is less than significant during the AM peak hour. However, during the PM peak hour, the addition of project traffic would increase delay by 9 seconds. As the intersection is projected to operate at a deficient LOS F during the PM peak hour, this is considered ***significant***.

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Mitigation Measure TRAF 6j. A Project Approval/Environmental Document (PA/ED) is currently being prepared for interchanges on I-5 including the I-5/Hammer Lane interchange and adjacent Hammer Lane/Kelley Drive intersection. An improved interchange configuration with the goal of providing acceptable service levels will be identified through the PA/ED process. The project applicant shall contribute their fair share towards improvements that would result in acceptable service levels at this intersection, reducing the project's impact to a less-than-significant level. ~~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 impact 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 restriping the northbound through/right-turn shared lane to a left-turn/through/right-turn shared lane, restriping the southbound approach to provide a left-turn lane, a shared through-right lane and a right-turn only lane, and signal modifications to provide north-south split phasing.

Impact TRAF-6k. Hammer Lane/Meadow Avenue/Don Avenue. This intersection is projected to operate at LOS E during the PM peak hour. The addition of project traffic would increase delay by 5 seconds, which is less than the greater than 5-second threshold. Therefore, the project impact at his location is ***less than significant*** and no mitigation is required.

Mitigation Measure TRAF-6k: The project impact at this location is less-than-significant. No mitigation is required.

Impact TRAF-6l. Hammer Lane/Pershing Avenue. This intersection is projected to operate at LOS F during the AM and PM peak hours. The addition of project traffic would increase delay by more than 5 seconds during both peak hours. This is considered a **significant impact**.

Mitigation Measure TRAF 6l. The project applicant shall contribute their fair share towards improvements that would result in acceptable service levels at this intersection, reducing the project's impact to a less-than-significant level. ~~Mitigation~~ Improvement that would result in acceptable service levels include: ~~of this impact would require~~ two left-turn lanes (300 feet each), two through lanes, and a right-turn lane (200 feet) on the northbound approach, two left-turn lanes (300 feet each), four through lanes, and a right-turn lane both the eastbound and westbound approaches. However, as this intersection is located within San Joaquin County and its implementation cannot be assured by the City of Stockton, this impact is ***significant-and-unavoidable.***

Impact TRAF-6m. Hammer Lane/Thornton Road. This intersection is projected to operate at LOS E during the PM peak hour. The addition of project traffic would increase delay by 2 seconds, which is less than the greater than 5-second threshold. Therefore, the project impact at his location is

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less than significant ~~and no mitigation is required~~.

Mitigation Measure TRAF-6m: The project impact at this location is less-than-significant. No mitigation is required.

Impact TRAF-6n. Hammer Lane/Lower Sacramento Road. This intersection is projected to operate at LOS E during the PM peak hour. The addition of project traffic would increase delay by 1 second, which is less than the greater than 5-second threshold. Therefore, the project impact at his location is ***less than significant*** ~~and no mitigation is required~~.

Mitigation Measure TRAF-6n: The project impact at this location is less-than-significant. No mitigation is required.

Table 4.7.X: 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
3.	Eight Mile Road/I-5 Southbound Ramps	AM	**132**	**F**	**135**	**F**	68	E
		PM	**198**	**F**	***205***	***F***	47	D
4.	Eight Mile Road/I-5 Northbound Ramps	AM	26	C	33	C	2	A
		PM	**190**	**F**	***196***	***F***	3	A
7.	Otto Drive/Trinity Parkway	AM	**56**	**E**	***84***	***F***	53	D
		PM	**56**	**E**	***83***	***F***	53	D
9.	Otto Drive/I-5 Southbound Ramps	AM	**301**	**F**	***325***	***F***	48	D
		PM	25	C	***92***	***F***	36	D
10.	Otto Drive/I-5 Northbound Ramps	AM	34	C	37	D	11	B
		PM	**82**	**F**	***108***	***F***	5	A
15.	Hammer Lane/ Mariners Drive	AM	**70**	**E**	***79***	***E***	35	C
		PM	**60**	**E**	***71***	***E***	33	C
16.	Hammer Lane/I-5 Southbound Ramps	AM	**135**	**F**	***147***	***F***	36	D
		PM	42	D	45	D	19	B
17.	Hammer Lane/I-5 Northbound Ramps	AM	34	C	48	D	28	C
		PM	**104**	**F**	***111***	***F***	53	D
18.	Hammer Lane/ Kelley Drive	AM	**92**	**E**	***103***	***F***	36	C
		PM	**151**	**F**	***164***	***F***	**115**	**F**
20.	Hammer Lane/ Pershing Avenue	AM	**114**	**E**	***121***	***F***	51	D
		PM	**178**	**F**	***186***	***F***	54	D

Source: Fehr & Peers, 2007.
Notes: 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.*

[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.*

[3]*Signalized 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.*

Figure 20 summarizes the recommended intersection mitigation measures.

Impact TRAF-7: The proposed project would worsen operations on four 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 on four I-5 freeway segments; however, the total traffic would be increased by less than five percent:

~~13.~~ Northbound south of Hammer Lane
~~14.~~ Northbound between Otto Drive and Hammer Lane
~~15.~~ Southbound south of Hammer Lane
~~16.~~ Southbound between Otto Drive and Hammer Lane

Therefore, the project impact on these freeway segments would be ***less-than-significant***.

Table 4.7.Y shows the project contribution, in addition to the proportion of existing traffic and traffic from future developments, at each mitigated intersection.

Table 4.7.Y: Project Contribution to Impacted Intersections Under Future 2035 Conditions

FACILITY	TRAFFIC CONTRIBUTION [1]					
	EXISTING		OTHER FUTURE DEVELOPMENT		THE PRESERVE	
	VOLUME	PERCENT	VOLUME	PERCENT	VOLUME	PERCENT
Eight Mile Road/I-5 Southbound Ramps	1,824	19 %	7,618	80 %	99	1 %
Eight Mile Road/I-5 Northbound Ramps	1,835	20 %	7,206	79 %	92	1 %
Otto Drive/Trinity Parkway	N/A	N/A	5,182	81 %	1,220	19 %
Otto Drive/I-5 Southbound Ramps	N/A	N/A	4,553	88 %	638	12 %
Otto Drive/I-5 Northbound Ramps	N/A	N/A	4,660	91 %	447	9 %
Hammer Lane/Mariners Drive	1,658	30 %	3,731	67 %	149	3 %
Hammer Lane/I-5 Southbound Ramps	3,062	41 %	4,227	57 %	166	2 %

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FACILITY	TRAFFIC CONTRIBUTION [1]					
	EXISTING		OTHER FUTURE DEVELOPMENT		THE PRESERVE	
	VOLUME	PERCENT	VOLUME	PERCENT	VOLUME	PERCENT
Hammer Lane/I-5 Northbound Ramps	4,602	54 %	3,789	44 %	187	2 %
Hammer Lane/Kelley Drive	4,545	60 %	2,850	38 %	184	2 %
Hammer Lane/Pershing Avenue	4,328	51 %	4,080	48 %	120	1 %

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 was selected as the project generates more PM peak hour than AM peak hour trips.

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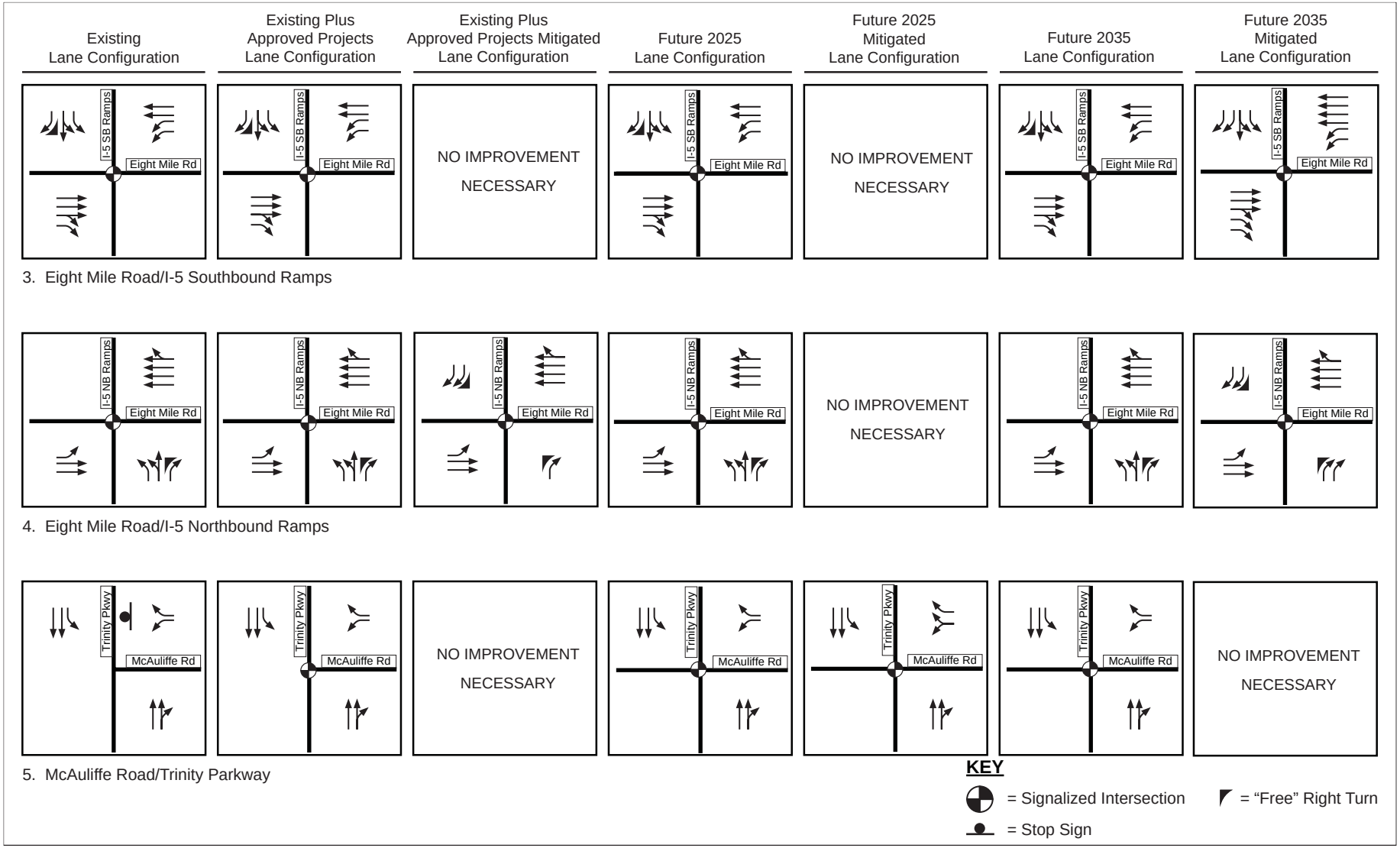

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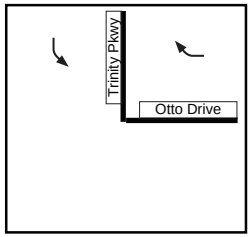
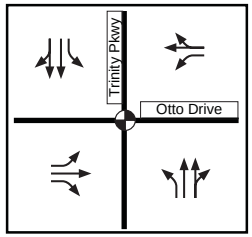
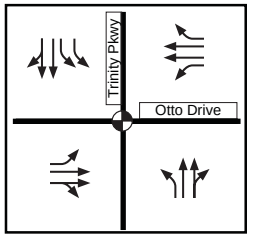
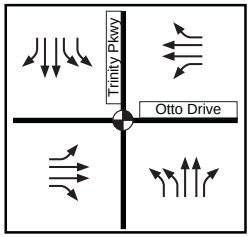
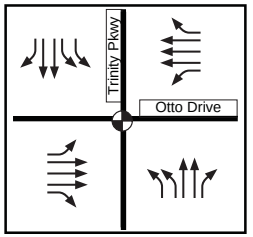
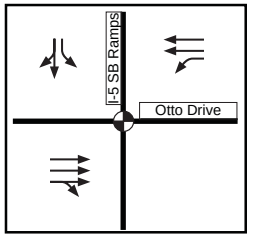
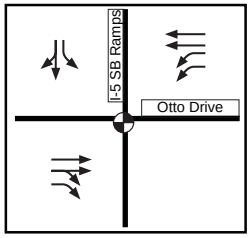
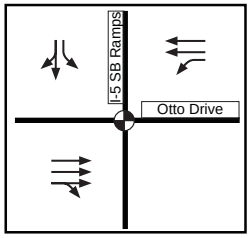
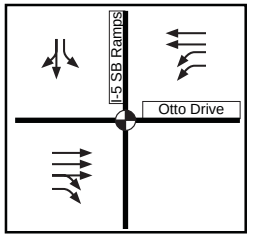
INTERSECTION MITIGATION MEASURE SUMMARY

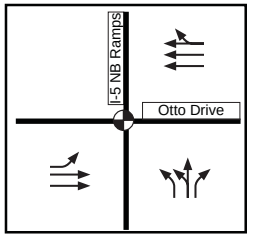
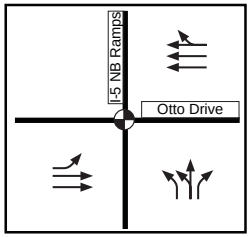
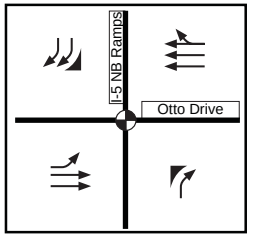
FIGURE 4.7-20A

Existing Lane Configuration	Existing Plus Approved Projects Lane Configuration	Existing Plus Approved Projects Mitigated Lane Configuration	Future 2025 Lane Configuration	Future 2025 Mitigated Lane Configuration	Future 2035 Lane Configuration	Future 2035 Mitigated Lane Configuration
EPAP AND FUTURE ANALYSIS ONLY				NO IMPROVEMENT NECESSARY		

7. Otto Drive/Trinity Parkway

FUTURE ANALYSIS ONLY	FUTURE ANALYSIS ONLY	FUTURE ANALYSIS ONLY				

9. Otto Drive/I-5 Southbound Ramps

FUTURE ANALYSIS ONLY	FUTURE ANALYSIS ONLY	FUTURE ANALYSIS ONLY		NO IMPROVEMENT NECESSARY		

10. Otto Drive/I-5 Northbound Ramps

KEY

= Signalized Intersection

= "Free" Right Turn

= Stop Sign

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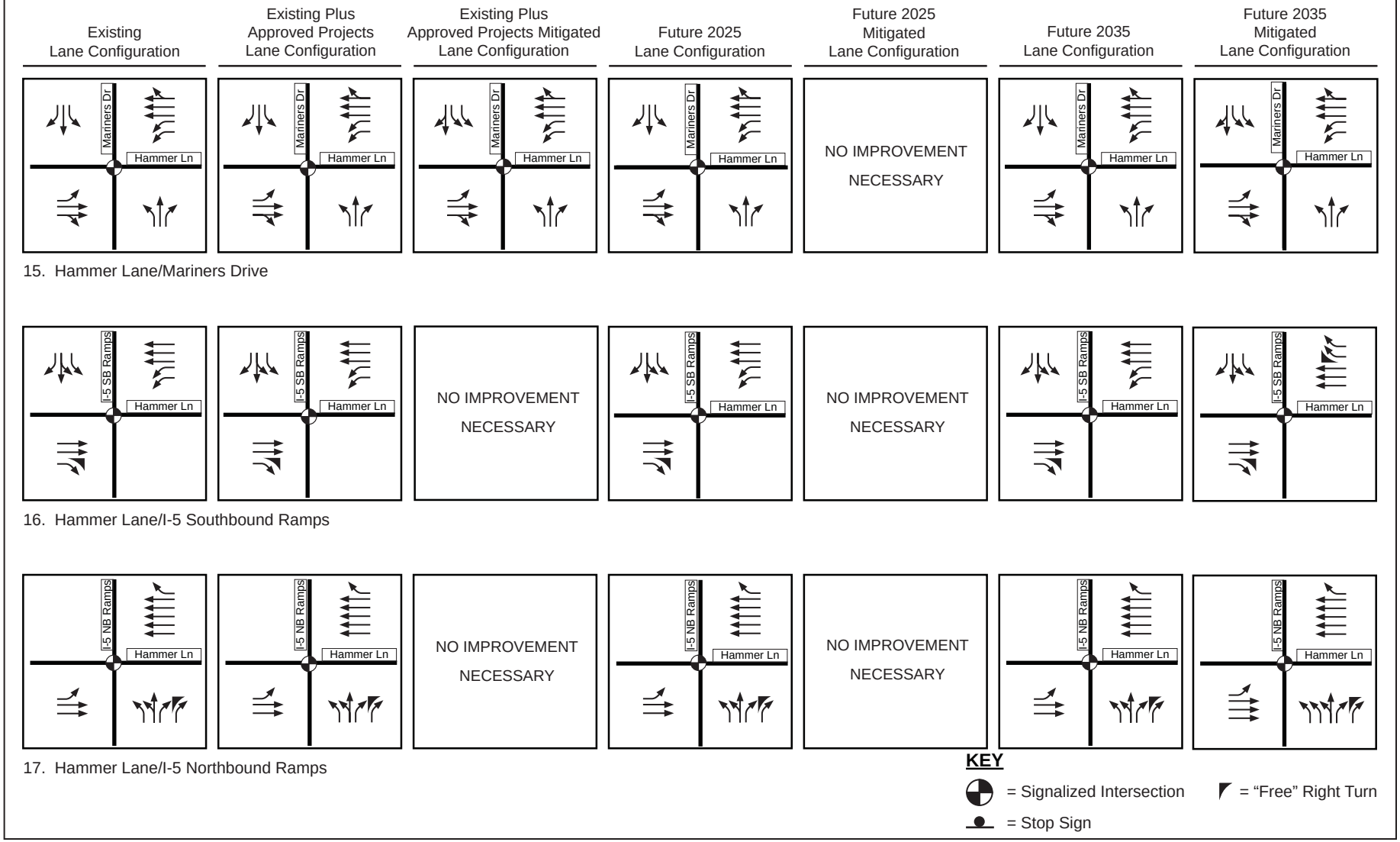
INTERSECTION MITIGATION MEASURE SUMMARY

FIGURE 4.7-20B



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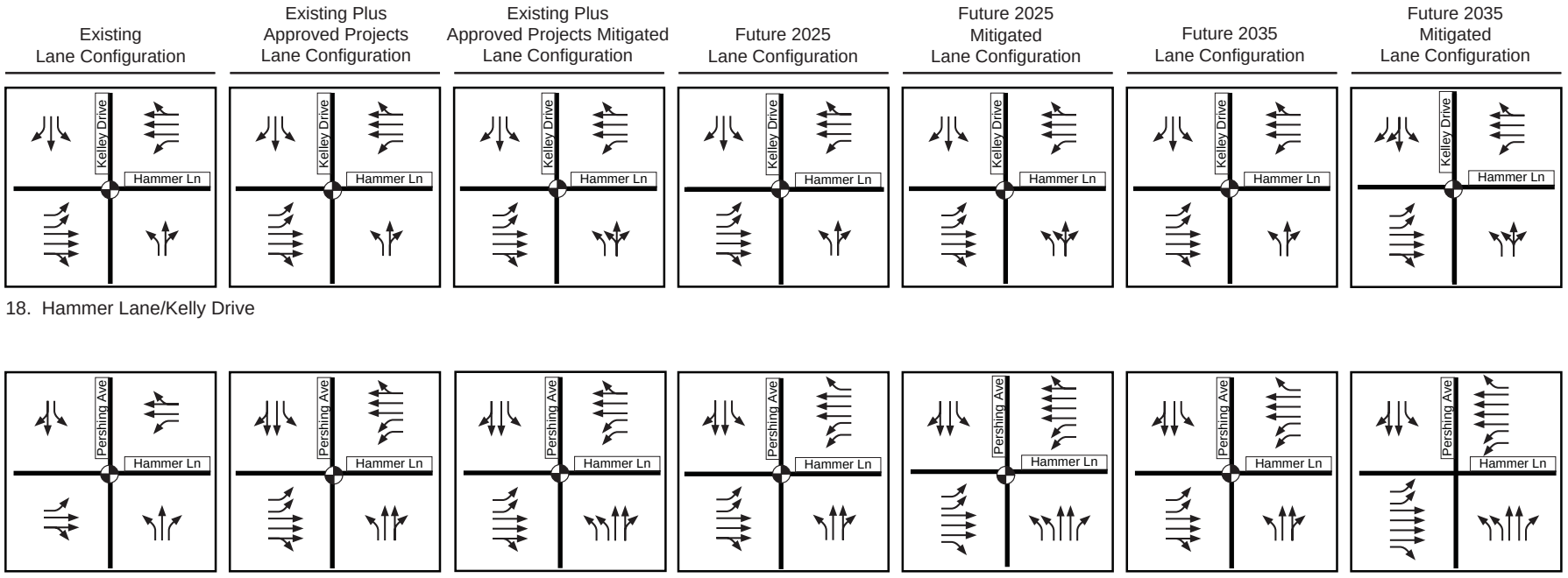
INTERSECTION MITIGATION MEASURE SUMMARY

FIGURE 4.7-20C



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INTERSECTION MITIGATION MEASURE SUMMARY

FIGURE 4.7-20D

i. Site Access, Circulation, and Parking

This section evaluates project site access, on-site circulation, and parking. As shown on Figure 4.7-21, access to the project site is proposed from Otto Drive, connecting the Twin Creeks Estates neighborhood to the proposed Shima Tract development. 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 The Preserve. 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 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 The Preserve are planned to include sidewalks, 7- to 8-foot parking lane and a 9- to 10-foot travel lane in each direction. Where block lengths exceed 600-feet, mid-block chokers should be installed to calm traffic. No blocks exceeding 600 feet shown on the site plan. Otto Drive, a collector roadway, is being designed through the site to provide sidewalks (8 feet) and a landscaping buffer, curb and gutter, two travel lanes in each direction (2 11-foot lanes) and a 14-foot center median.

***Internal Intersection Traffic Controls*:** Intersection control types were reviewed for installation at the internal project intersections: traffic signals, roundabouts, and traffic circles. These items as well as side-street stop control was reviewed for the access locations on Otto Drive and Trinity Parkway. The primary function of traffic signals and stop-signs 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 4.7-21 and, discussed below:

- ***Otto Drive/Access 1*** – This intersection is located approximately 1,800 feet west of the Otto Drive/Trinity Parkway intersection. Primary access to Neighborhoods A, B, C, D, E and F would be provided through this intersection. Access to the recreation area and school site would also be provided from through this intersection. This intersection would operate acceptably with side-street stop-control with full access until the adjacent Sanctuary project is constructed with development of Neighborhoods A though F. Once development occurs on the west side of the easement park and/or the Otto Drive Bridge over Mosher Slough connecting to the Shima Tract is developed, a traffic signal should be installed at this intersection. The project applicant shall provide the ~~The~~ following lane configurations ~~are recommended~~ at this location:

  - ~~a.~~ o 1 westbound left-turn lane – 250 feet of storage
  - ~~b.~~ o 1 westbound through lane
  - ~~c.~~ o 1 westbound through-right shared lane
  - ~~d.~~ o 1 eastbound left-turn lane – 100 feet of storage
  - ~~e.~~ o 1 eastbound through lane
  - ~~f.~~ o 1 eastbound through-right shared lane
  - ~~g.~~ o 1 northbound ~~shared~~ left-~~through~~ turn lane
  - o 1 northbound through-right shared lane

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~~h. 1 northbound right-turn only lane~~
~~i.~~ o ~~1~~ southbound left-turn lane
~~j.~~ o 1 southbound through-right shared lane

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- ***Otto Drive/Access 2*** - This intersection is located approximately 2,400 feet from Access 1. - Primary access neighborhoods H, I, J, L, M would be provided from through this intersection. -Similar to Access 1, this intersection would operate acceptably with side-street stop-control until construction of the bridge over the Mosher Slough, connecting to Regatta Lane. - Installation of a roundabout or traffic circle would not result in acceptable intersection operations. -Signalization would provide acceptable service levels. -Crosswalks should be constructed on all approaches with pedestrian actuation. -This signal should be interconnected with the traffic signal at the Otto Drive/Trinity Parkway intersection, as well as the traffic signal recommended for Access 1. The project applicant shall provide the following lane configurations at this location: ~~The following lane configurations are recommended at this location:~~ :-

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~~k.~~ o 1 westbound left-turn lane – 150 feet of storage
~~l.~~ o 1 westbound through lane
~~m.~~ o 1 westbound through-right shared lane
~~n.~~ o 1 eastbound left-turn lane – 100 feet of storage
~~o.~~ o 1 eastbound through lane
~~p.~~ o 1 eastbound through-right shared lane
o 1 northbound left-turn lane
o 1 northbound through-right shared lane
o 1 southbound left-turn lane
o 1 southbound through-right shared lane

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~~o 1 northbound shared left-through lane~~
~~o 1 northbound right-turn only lane~~
~~o 1 southbound left-turn lane~~

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Installation of a median extending 200 feet to the north and to the south of Otto Drive is recommended. -

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- ***Otto Drive/Access 3*** – This intersection is located approximately 600 feet from Access 3 and provides primary access to neighborhoods K and N. -With full buildout of the project and surrounding area, this intersection would operate at an overall acceptable service level (LOS A) although the southbound left-turn movement would experience some delays and operate at LOS F during the PM peak hour. -As signalized access is provided at the adjacent intersection and the intersection is located in close proximity to the Otto Drive bridge over Mosher Slough ,- it is recommended that this intersection remain side-street stop-controlled and be restricted to right-in/right-out operation. -The project applicant shall provide the following lane configurations at this location: ~~The following lane configurations are recommended at this location:~~

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~~1 westbound left-turn~~through ~~lane 150 feet of storage~~
~~q.~~ o ~~1~~ 1 westbound through ~~right shared~~ lane
~~o 1 westbound through-right shared lane~~
~~s. 1 eastbound left-turn lane 100 feet of storage~~

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~~t.~~ 0 ~~1~~2 eastbound through lanes
~~u.~~ 0 1 eastbound ~~eastbound through~~ right-turn ~~shared~~ lane
~~v.~~ 0 1 northbound right-turn only lane
~~w.~~ 0 1 southbound right-turn only lane

- ***Otto Drive/Pedestrian Crossing*** – The project applicant shall provide a~~A~~ grade separated trail crossing ~~should be provided across~~ of Otto Drive ~~to the east of the~~ at the bridge ~~crossing~~ over ~~the~~ Mosher Slough. ~~-~~Traffic volumes are projected to be approximately 13,000 vehicles per day on this section of Otto Drive with buildout of the adjacent parcels, including Shima Tract, Westlake Villages, and Crystal Bay. ~~A signalized pedestrian crossing could be provided to encourage and consolidate pedestrian movements at this location.~~ .

  Alternatively, should construction of a grade separated crossing be deemed infeasible, alternative crossing measures to be considered by City staff, including installation of a pedestrian signal or directing pedestrians and bicyclists to the Otto Drive/Access 2 intersection where a controlled crossing would be provided, shall be installed by the project applicant.

All traffic signals should be interconnected and coordinated. ~~-~~Additionally, a progressive signal system should be implemented to maintain travel speeds on Otto Drive. ~~-~~The intersection spacing is ideal to time the traffic signals such that a driver will arrive at a red light should they drive faster than the desired speed. ~~-~~Drivers who drive at the desired speed for the roadway would have continuous green lights through the development. ~~-~~Signage indicating the progressive signal system should be installed on Otto Drive.

Table 4.7.Z presents operations of the project driveway intersections on Otto Drive in 2035 with buildout of the surrounding area, including the Shima Tract, with the lane configurations recommended above. ~~-~~Generally, the project's driveway on Otto Drive would operate acceptably with the traffic controls and intersection configuration discussed above. ~~-~~

Table 4.7.Z: Internal Intersection Level of Service (2035)

INTERSECTION	PEAK HOUR	CONTROL	DELAY [1&2]	LOS	NOTES
Otto Drive/Access 1	AM PM	Signal	~~14~~27 ~~14~~27 20	~~B~~C B	Spacing of Signalized intersections would permit provision of a signalized pedestrian crossing at the Western Mosher Slough Bridge, if future pedestrian volumes warrant.
~~Otto Drive/Access 2~~Otto Drive/Access 2	AM PM	Signal	~~12~~25 ~~13~~25 24	~~B~~C ~~B~~CC C	

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INTERSECTION	PEAK HOUR	CONTROL	DELAY [1&2]	LOS	NOTES
Otto Drive/Access 3	AM PM	SSSC	~~2~~ 1 (~~21~~12~~)~~ ~~2~~ 12) 1 (~~58~~12)	A (~~C~~B) A (~~F~~B)	~~Delay experienced by side-street movement only.~~ Restricted to right-in/right-out operation.

Source: Fehr & Peers, 2007.

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

[2]*All-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.*

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No roundabouts are recommended for installation in The Preserve. However, five traffic circles are recommended, as shown on Figure 4.7-21. These locations were selected to moderate traffic flow and speeds within the development.

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Three bulb-outs in conjunction with high visibility crosswalks are recommended for installation within the project site, as shown on Figure 4.7-21. These locations were selected as they are adjacent to the linear park and heavy pedestrian activity is anticipated. In addition, bulb-outs increase pedestrian safety by decreasing the required crossing distance and providing standing space on the sidewalk.

All-way stop-control is recommended for installation at one location. The locations in the northwest quadrant were selected as a roadway connection would be provided on a curve that could potentially limit sight distance for vehicles turning from the side street. A detailed site plan review should be performed for the school site to identify additional circulation measures that could be implemented adjacent to the school.

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Pedestrian/Vehicle Conflict Areas: Areas of potential vehicle/pedestrian conflict, such as near the school site and recreation areas were 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 and pedestrian refuge islands, are recommended at locations with high pedestrian activity, such as near parks and school sites. We offer the following pedestrian/vehicle conflict recommendations:

- Provide pedestrian actuation at all signalized intersections.
- Incorporate appropriate pedestrian crossing treatments into all traffic circles and traffic signals.
- Install high visibility crosswalks connecting to the school site and parks, as indicated on Figure 1.
- Install pedestrian refuge islands connecting neighborhoods to the levee trail, as indicated on Figure 4.7-21.

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Alternative Mode Access: Potential transit stop locations are shown on Figure 4.7-21. 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. The final transit stop location should take into consideration potential bus stop within the neighboring developments.

Sidewalks are proposed along all roadways in the project site. Installation of high visibility crosswalks is recommended at the main pedestrian activity centers, including the proposed elementary school and proposed park areas.

A Class I bicycle path is proposed parallel to Trinity Parkway, connecting developments to the north, including Spanos Park West, to Hammer Lane. To minimize conflicts between bicyclists and pedestrians, the following is recommended:

- Incorporate multi-use path design features consistent 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.AA* ***shows the parking requirements for the proposed project based on the Municipal Code.*** ***The project applicant is required to provide adequate parking as required by City of Stockton Zoning Code for each use within the project area.***

~~Impact TRAF-8: 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-8: 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.AA: Required Parking

LAND USE	SIZE	CODE PARKING REQUIREMENT[1]	REQUIRED PARKING
Single Family Homes	1,308 dwelling units	2 spaces per house (both enclosed in a garage)	2,616
Condominiums	96 dwelling units	2 covered spaces per unit	192

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Total Required Parking	***2,808***

Source: Fehr & Peers, 2007.
[1]Based on Stockton Municipal Code – Chapter 16 Development Code, Ordinance 16-345.040, August 2004.

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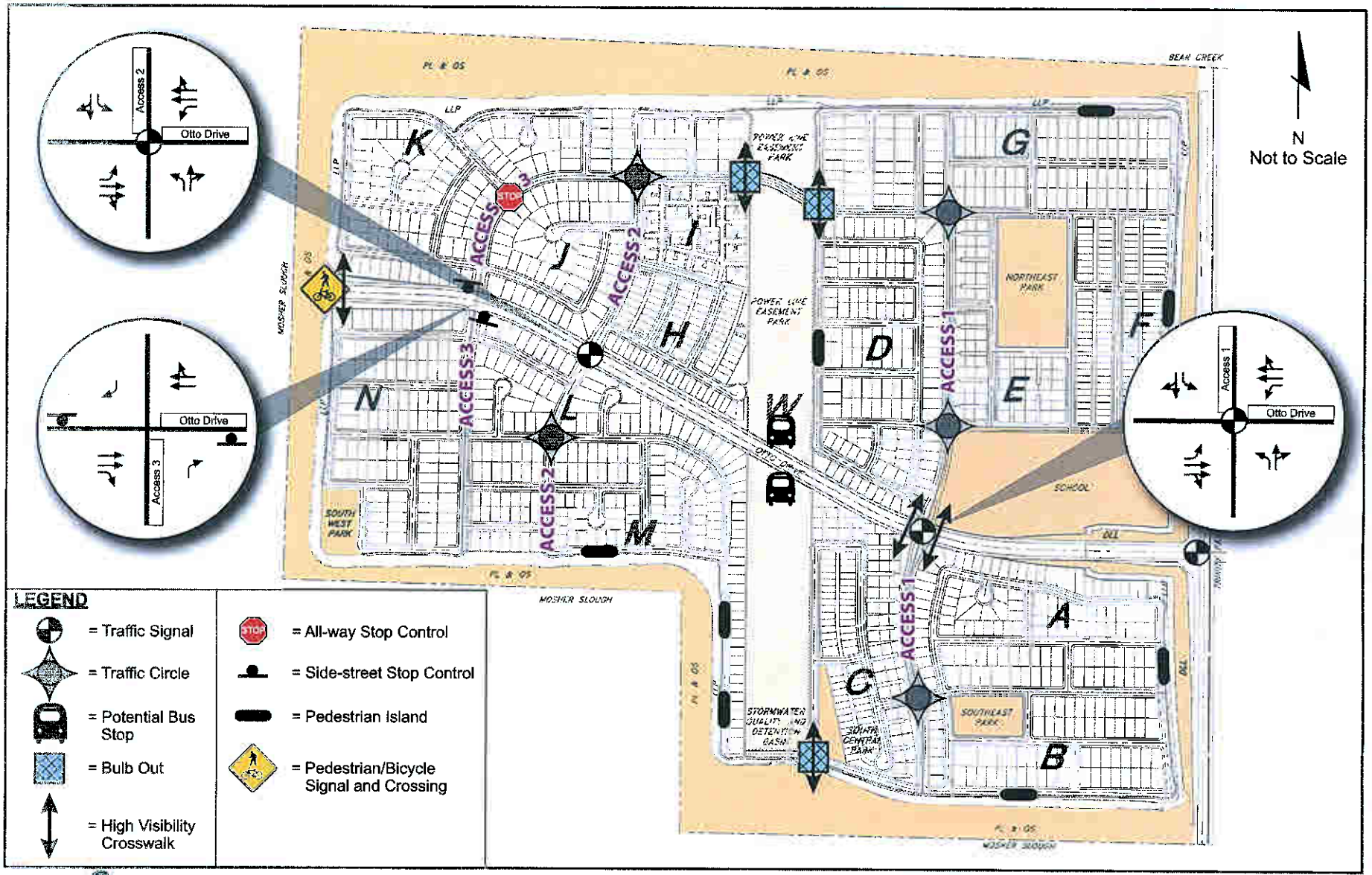
4.7.4 Level Of Significance After Mitigation

The mitigation measures included in this section will reduce many of the traffic impacts associated with implementing the proposed project over the long term. However, even with mitigation measures, several locations in the roadway network will remain significantly impacted and cannot be completely mitigated. These impacts are considered unavoidable. Several roadway locations may be mitigated in the future if the commitment for funding sources for new improvements can be assured. In the absence of these firm funding commitments, the impacts may remain significant and unavoidable.



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ATLAS TRACT INTERNAL TRAFFIC CONTROL FEATURES

FIGURE 4.7-21

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.[1] 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.[2]

In 2003, Stockton had 85,988 households, a 18.6 percent increase from 1990, while the average household size increased from 3.00 in 1990 to 3.11 in 2003.[3] 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.

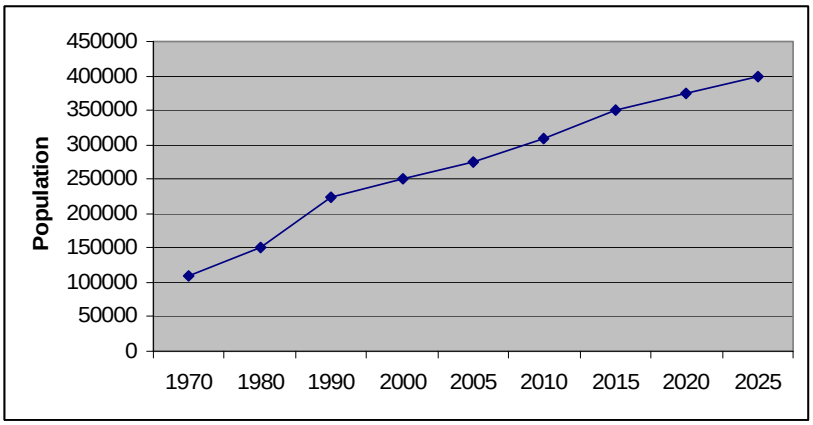
The majority of Stockton's population has shifted from the southern areas of the city to the north side of town. From 1960 to 1990, northern Stockton has experienced the largest increase in percentage of the city's population, while the downtown and areas south of the Calaveras River have seen a constant decrease in the percent of city's population they contain.[4] The southern sub areas of Stockton and the downtown have historically had the highest percentages of minority populations (Hispanic, Asian, and black).

According to projections by the San Joaquin Council of Governments (COG), the population of the County will increase to over 1,110,000 persons by 2030 (refer to Table 4.8.B). Much of this growth is expected to occur in the southern part of the County. The COG estimates that almost all of the cities in the southern part will double in population. Stockton will remain the largest city in the County with approximately 45 percent of the County's population.

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.

1 City of Stockton, 2004. *General Plan 2003 Housing Element*. Adopted September 14, 2004
2 Ibid
3 Ibid
4 City of Stockton, 1990. *General Plan, Background Report*. Adopted January 22, 1990.

Table 4.8.A: Historic Population Trend for Stockton (1860-2025)



Source: San Joaquin Council of Governments

Table 4.8.B: Project Population Growth (2005-2030)

Area	2005	2010	2015	2020	2025	2030
Stockton	268270	298267	331278	366332	401997	438770
San Joaquin County	630613	708364	792998	888536	995132	1117006

Source: San Joaquin Council of Governments, 2004 RTP Program EIR

Housing

In 2000, the City of Stockton contained 82,125 housing units. The City of Stockton reports an average household size of 3.11. 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).

Table 4.8.C: 2000 Housing Stock by Type and Vacancy

	City of Stockton	
	Number	**Percent**
Total Housing Units	82125	100%
Occupied Units	78522	95.6%
Vacant Units	3603	4.4%
Occupied Units Housing Type	78522	100%
Single Family		
Detached	47696	60.7%
Attached	6288	8.0%
Multifamily		
2 to 4 units	7838	10%
5 plus units	15483	19.7%
Mobile Homes	1163	1.5%
Boats, RVs, Vans	54	0.1%

Source: City of Stockton, General Plan 2003 Housing Element

The median home value for an owner occupied house in Stockton was $119,500 in 2000, according to the 2000 Census. Although home price sales have increased dramatically in the Stockton area, 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.

The project lies on the fringe of existing urban areas and is currently open agricultural land. There are no households on the project site.

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.

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	88133	NA	201671	NA
2005	95291	1.6%	218051	1.6%
2010	102449	1.5%	234430	1.5%
2015	109607	1.4%	250810	1.4%
2020	116765	1.3%	267189	1.3%
2025	123923	1.2%	283569	1.2%

Source: SJCOG

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.

Jobs/Housing Balance

In 2001, the jobs to household ratio was 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.

Existing Policies and Regulations

The following General Plan policies relate to population and housing.

Policy H-1.1: The City shall ensure that sites designated for new residential development are adequately served by public utilities, are minimally impacted by noise and blighting conditions, and are compatible with surrounding land uses.

Policy H-2.2: The City shall work with private and non-profit entities to provide housing to low- and moderate- income households.

Policy H-3.2: The City shall plan for the expansion and/or improvement of public facilities and infrastructure to coincide with housing development and improvements.

Policy H-5.3: The City shall encourage the provision of housing units to meet the needs of families of all sizes affordable to all income levels.

Policy H-5.4: The City shall promote housing that meets the needs of the disabled and senior segments of the population.

Policy H-6.2: The City shall promote green building concepts and processes.

4.8.2 Impact 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.

HPS-f Divide or disrupt the physical arrangement of an established community.

4.8.3 Impacts and Mitigation Measures

Effects Considered to be Less than Significant

Impact HPS-1: Development of the project site may conflict with housing/population projections and policies in the General Plan.

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

1,404, which would constitute approximately 10 percent of the total projected household growth in Stockton during the time period from 2001 to 2008.

The proposed project would be within the City of Stockton's projected household growth and is not in conflict with the housing/population projections and policies in the General Plan. Conditions outlined in **Significance Criterion HPS-b** would not occur.

Impact HPS-2: Development of the project site may conflict with Stockton's affordable housing policies and objectives.

The proposed project would increase housing units in Stockton by 1,404 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. Conditions outlined in **Significance Criterion HPS-c** would not occur.

Impact HPS-3: Development of the project site may conflict with Stockton's job/housing balance policies and objectives.

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 1,404 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. Therefore, conditions outlined in **Significance Criterion HPS-d** would not occur.

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 proposed project would provide approximately 1,404 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. Conditions outlined in **Significance Criterion HPS-e** would not occur.

Impact HPS-5: Development of the project site may divide or disrupt the physical arrangement of an established community.

The proposed project site is currently open agricultural land on the northwestern edge of urbanized residential areas of Stockton. The site is currently separated from the surrounding areas to the north, west and south by the drainage slough. The proposed project would involve the development of 1,404 residential units on open agricultural land adjacent to existing residential areas. Otto Drive is an existing road which would be used for access to the site, in addition to an extension of the Trinity Parkway. The proposed project would not divide or disrupt the physical arrangement of an established community. Conditions outlined in **Significance Criterion HPS-f** would not occur.

Impact HPS-6: Development of the project site may result in substantial population growth.

The development of 1,404 residential units would house approximately4,366 people, based on an average household size of 3.11 people per housing unit as reported in the 2000 Census. The proposed project would result in substantial population growth; however, the population growth would constitute approximately 10 percent of the projected growth in the City of Stockton for the time period between 2005 and 2010. This growth is within the San Joaquin County Council of Government's projected population growth for the City of Stockton and is included in the City's General Plan buildout area. Therefore, the conditions outlined in **Significance Criterion HPS-a** would not occur.

4.8.4 Level Of Significance After Mitigation

No mitigation measures are needed to reduce the impacts to population/housing/socioeconomics to less than significant levels.

4.9 PUBLIC SERVICES

The following subsections briefly describe the existing public services within the City relating to the proposed project.

4.9.1 Existing Setting

City Neighborhood and Community Parks

The City of Stockton operates and maintains a total of 53 parks that range in size from 2 acres to 64 acres. Of that total, there are 34 neighborhood parks and 19 community parks. The nearest neighborhood and community parks to the project site are the Garrigan, Sandman, Laughlin and Corren parks. 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 ½ mile east of the boundary of the project site. The closest Community Park to the project site is Sandman Park, approximately 1¼ miles southeast of the project site. Two additional parks are planned in Spanos Park West. A ten acre park (Falkis Park) is planned next to the apartments on Cosumnes Drive, and a 5-acre park (Iloilo Sister City Park) is planned on Scott Creek Drive adjacent to the Manilo Silva Elementary School. Construction for both parks are expected in spring of 2007.

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 (563.5 acres), there is currently an overall deficiency of 220.4 acres of neighborhood and community parks in Stockton. In the City of Stockton, there is currently a deficit of 108 acres of neighborhood park space and a deficit of 130 acres of community park space.

Table 4.9.A provides park standards recommended by the National Recreation and Parks Association (NRPA). Table 4.9.B provides the current (August 2003) City of Stockton General Plan park standards. The 1996 General Plan Parks and Recreation Evaluation and Update recommended a ¼-mile service radius for neighborhood parks. However, according to the City Parks and Recreation Department, the City currently uses the ½ -mile standard, which is the same as the 1992 General Plan standard for neighborhood parks.

The size of the City's parks is based on the intended use (i.e., neighborhood park or community park) as it relates to the service radius (i.e., ½-mile or region wide). However, the requirement to use maintenance districts for the maintenance of new parks has created some challenges regarding the implementation of the City's parkland dedication requirements. Acreage required for each park has been unofficially combined into a general formula of 3 acres per 1,000 persons for "park" (rather than

0.75 acres per 1,000 persons for neighborhood parks and 2.25 acres per 1,000 persons for community parks).

Table 4.9.A: City Park and NRPA Standards

Type of Park	Acres per 1,000 persons	Acres per Park	Service Radius
City of Stockton			
Neighborhood	1	5-10	½ Mile
Community	2	10-30	1 mile to citywide
Regional	7	30 and over	region wide
NRPA			
Neighborhood	1-2	15 and over	1/4 - ½ mile
Community	5-8	25 and over	1-2 miles
Regional	5-10	200 and over	1 hr. drive

Source: City of Stockton Parks and Recreation Department; Stockton General Plan Recreation Element 1996

The City has contemplated revising the General Plan to reflect 5 acres per 1,000 residents for parkland dedication, but had not formally adopted this policy during the preparation of this EIR. However, the 2035 Draft Policy document contains the following requirements.

Table 4.9.B: Park Standards

Type of Park	Net Acres/1,000 Residents	Minimum Net Acres/Park	Service Radius
Neighborhood Park	2	5	½ mile
Community Park	3	15	1 mile to citywide
Regional Park	3	30+	Region-wide
Public Golf Courses	1 course/40,000	130 to 180	Region-wide

Source: City of Stockton, General Plan Goals and Policies Draft Report, February 2005

Regional Parks

The Oak Grove Regional Park is located 1 mile northeast of the project site. Based on the parkland standard, there is currently a deficit of 1,320 acres of regional parkland for the City of Stockton, as shown in Table 4.9.C. It should be noted that none of the regional parks are located within the City of Stockton.

Table 4.9.C: 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	1828
Regional Park Shortfall	1320

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.D. 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.D: 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	1 ½ 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-feet width) runs from the Westlake development along Bear Creek and under the I-5 freeway, immediately north of the project site.

Existing Policies and Regulations

The Following General Plan Policies and Stockton Municipal Code Sections Relate to Recreation.

Parks and Recreation Goal 1: To provide a variety of recreational facilities and services to meet the diverse needs of Stockton's residents, workers, and visitors.

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 Table 4.9.B.

Policy 2 The City shall ensure that the community centers are provided at a level that meets the City's community center standards, as shown in Table 4.9.C.

Policy 3: The City shall require that new parks be located and designed in such a way as to facilitate their security and policing.

Policy 4: Whenever possible, the City shall develop neighborhood parks in conjunction with elementary school that are centrally located within the neighborhood and where park patrons need not cross major arterial or collector streets.

Policy 5: The City shall locate new community and regional parks 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.

Policy 6: The City shall continue to provide for the development of linear parkways, recreational bikeways, and trails that connect with the community and neighborhood parks where opportunities exist (i.e., Calaveras River path, EBMUD right-of-way).

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.

Policy 15: The City shall endeavor to preserve and restore the natural values of the San Joaquin and Calaveras Rivers, the Delta, and other local waterways, and shall incorporate them into the City's park and trails system where possible.

Residential Land Use Goal 2: Promote and maintain a safe, healthful and aesthetically pleasing environment for residential development and conserve and enhance distinctive neighborhood identities.

Policy 3: Residential development shall provide open space in either private yards or common areas to partially meet the residents' recreational needs.

Stockton Municipal Code Chapter 16-355.060:

C. Park Land Dedications and Fees.

Maintenance entity for dedicated park land:

a. Prior to recordation of any Final Map, the developer shall provide a mechanism or system to insure that the subdivision permanently pays its proportionate share of costs associated with the maintenance of any park site within the service area of the subdivision or serving the subdivision. The mechanism for doing so may be by annexation into the City's Consolidated Landscape Maintenance District or by the formation of a new zone of the City's Consolidated Landscape Maintenance District to ensure that properties are assessed for the maintenance costs.

b. The owner, developer, or successor-in-interest shall be responsible for maintenance of the park site until such time as the zone of the Stockton Consolidated Maintenance District, through which the park shall be maintained, generates sufficient revenue to assume such responsibility.

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).

Disposal of commercial waste is handled in the competitive market and will be disposed of at the discretion of the collection companies.

Fire Protection Services

Information from this section is based on the Stockton General Plan developed by the City of Stockton and released for public review 12/01/2006.

The Stockton Fire Department has 13 fire stations located throughout the City of Stockton and utilizes approximately 7,000 hydrants in key locations to provide adequate water for the surrounding development. The City's 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. Other specialized services include Hazardous Materials Unit, Water and Dive Rescue Team, and Heavy and Confined Space Rescue. Stockton current has 263 firefighters and 38 civilian support staff employees (City of Stockton, 2006), and the standard structure fire response time is 3-4 minutes. The nearest existing fire station to the site is on 1767 West Hammer Lane and is approximately 3.5 miles away. The future development of the approved Westlake Village will include a new fire station in the northeast corner of the Westlake development just south or Eight Mile Road. When developed this fire station will be the closest to the project site.

Police Protection Services

Information from this section is based on the Stockton General Plan developed by the city of Stockton and released for public review 12/01/2006.

The City of Stockton Police Department provides protection to the community. The Police Department has centralized office at 22 East Market Street in the downtown area of the City and two neighborhood field offices. There are approximately 408 sworn officers and 224 civilian support staff working for the Police Department. The average response time for a life-threatening emergency is 3-5 minutes and 25 minutes for a non-emergency call. 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. However, an elementary school is planned for The Preserve development.

The applicant has had preliminary contact with the LUSD. Discussions regarding the provision of an elementary school site, location, and size requirements have been initiated. It is expected that the students generated from The Preserve project would be served by the proposed Preserve elementary school, Manlio Silva Elementary School, Christa McAuliffe Middle School, and Bear Creek High School (City of Stockton, 2005). Current enrollments are presented in Table 4.9.E.

Table 4.9.E: Current Enrollments

School	Current Enrollment	Total Capacity
Manlio Silva Elementary School	603	802
Christa McAuliffe Middle School	788	880
Bear Creek High School	2217	1600

Source: Lodi Unified School District 2005

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 annual library attendance for Stockton libraries in 2002, was approximately 21,000 people. Library collections totaled approximately 20,000 as of 2002, however, current totals are probably higher and also include collection access on the Internet.

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

The proposed project is located immediately adjacent to lands managed for agriculture and environmental purposes. These uses are capable of harboring and producing mosquitoes, which can migrate to the proposed development site. Although the San Joaquin County Mosquito and Vector District performs routine abatement services to these lands, the District cannot assure control to acceptable levels.

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 0.75 acres/1,000 residents for neighborhood parks, 2.25 acres/1,000 residents for community parks and 7 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-1 Expose project residents to health risks due to transmission of vector-related viruses.

4.9.3 Impacts And Mitigation Measures

Effects Considered Less than Significant

Community Center

Impact CC-1: The project may not provide adequate 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 elementary school proposed as part of the project 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 may impact recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

The proposed project includes a linear park and open space area through the middle of the site, running from north to south beneath the power transmission lines. The proposed park would include an open space/wetland area. The proposed project consists of a total of 71.41 acres of open space, and 40.9 acres of parkland. Additional parks and levee trails within the Preserve would reduce the need for future residents to utilize the surrounding neighborhood parks or other recreational faculties and therefore the impacts to existing parks and recreational facilities would be less-than-significant. 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 an 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 the Biological Section of this EIR, and mitigation is provided accordingly. The impacts to the environment due to the expansion of the open space/wetland features and trail system are not expected to be significant and the conditions included in **Significance Criterion PR-b** are not expected to occur.

Impact PR-3: Development of the project site may create a shortage of neighborhood park facilities for new residents.

The proposed project includes approximately 1,404 residential units. According to the City of Stockton, the average household size is 3.11 people. Based on the average household size for the City of Stockton, the proposed project would contain approximately 4,366 residents.

Neighborhood Parks
Under the 1990 General Plan, the proposed project, with approximately 4,366 residents, would require approximately 5 acres of neighborhood park space, based on the City of Stockton park standards. The proposed project includes approximately 40.9 acres of parkland and therefore provides enough neighborhood parks to satisfy the City requirements.

Community Parks
Under the 1990 General Plan the proposed project, with approximately 4,366 residents, would require approximately 10 acres of community park space, based on the City of Stockton park standards. The proposed project includes approximately 40.9 acres of parkland and 71.41 acres of open space and therefore provides enough community parks to satisfy the City requirements.

Regional Parks
According to the 1990 General Plan the proposed project, with approximately 4,366 residents, would require approximately 30 acres of additional regional park space, based on the City of Stockton park standards. The proposed project includes approximately 40.9 acres of parkland and 71.41 acres of open space, but does not include a separate regional park. The City of Stockton regional park standards require a minimum size of 30 acres to form a regional park.

2035 General Plan Update Park Requirements
If, as indicated in the policy document for the 2035 General Plan Update, the City adopts the requirement of 5 acres per 1,000 residents, the requirements for neighborhood park would be approximately 22 acres. The project complies with this new policy for neighborhood park acreage.

For the community and regional park requirements the policy would be 3 acres per 1,000 residents or 15 acres for a community park and 30 acres for a regional park per the minimum standards. As indicated above there are no community or regional parks contained within the development that adhere to the required minimum acreage standards. However, the City Parks and Recreation Department has indicated that the park acreage in the Preserve project meets acceptable City objectives for accommodating park land need. There are adequate open space, parkland and trail systems within the development to provide the residents and surrounding developments with recreational opportunities. Therefore, the conditions included in **Significance Criterion PR-c** are expected to be insignificant.

Impact PR-4: Development of the project site may conflict with General Plan policies regarding park locations, security and safe access.

The perimeter trail system could be used to connect with the existing Class I bike trail north of the project site, which could extend to Garrigan Park. The linear park/open space would run the entire

length of the project site, allowing access to the site without the need to cross major arterials or collector streets from within the proposed project.

The linear park/open space would be within residential neighborhoods and surrounded by residential lots on both sides, which would allow for surveillance of the park by surrounding residents. In addition, the linear park/open space design includes public streets around the entire perimeter of the park to the extent feasible, facilitation 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** would be insignificant.

Solid Waste/Landfill

Impact SW-1: Implementation of The Preserve 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.F presents the daily solid waste generation estimates.

Table 4.9.F: Daily Solid Waste Generation (pounds per day)

Land Use	Proposed Units	Total People	Daily Generation Factor	Proposed Waste
Proposed Preserve Development				
Residential	1404	4366	11.5 lbs./person/day	50,209
Total:				50,209

Source: Miller 2003

The application of these rates to the population projected for the proposed Preserve project results in an estimated volume of 50,209 pounds per day or 25.1 metric tons per day. Assuming a 50% diversion rate, the total landfill capacity required for the proposed project would be 4,581 metric 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 not expected to overburden existing participating companies. Consequently, the conditions presented in **Significance Criterion SW-b** will not occur.

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, sports field and open space in the proposed project.

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 not be 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 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 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.

Implementation of the above listed mitigation measures would reduce impacts affecting park maintenance to less than significant levels. Consequently, the conditions included in Significance Criterion PR-d will be avoided.

Fire

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 4,366 individuals to the North Stockton area. According to City's FY 2006-2007 budget, the current is 0.94 firefighters per 1,000 residents. Five additional firefighters are required to service the Project assuming that the current level of services is satisfactory. This would require the development of an additional fire station in the vicinity along with an increase in fire fighting personnel to provide adequate fire protection services.

A temporary fire station will be built as part of The Preserve at a site to be determined. This temporary substation will be located on two 5,000 square foot lots within The Preserve until a new permanent location has been decided upon by the City at which time the two lots will be returned to the Master Developer. With the construction of the temporary substation within The Preserve project, residents there can expect a high level of service and quick response times to their emergencies.

New developments tend to generate fewer fire-related calls due to the use of new materials and construction techniques in accordance with current codes. This should help alleviate additional concerns regarding new construction.

Mitigation Measure FP-1a: prior to issuance of building permits, the project applicant shall pay development impact 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.

Implementation of the above mitigation measures will reduce fire protection impacts to less than significant levels.

Police

Impact PP-1: The proposed Preserve project will increase the demand for law enforcement services.

According to the City's FY 2006-2007 budget, the current service level is 1.49 sworn officers per 1,000 residents. The additional proposed population of 4,366 individuals to the North Stockton area would require an additional seven law enforcement officers to provide adequate police protection services. According to the police department, security during construction of the project is an ongoing issue within the City. The following mitigation is provided to offset these impacts.

Mitigation Measure PP-1a: Prior to issuance of building permits, the project applicant shall pay development impact 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 required to prevent criminal activity during construction.

Implementation of the above mitigation measures will reduce police-related/security impacts to less than significant levels.

Schools

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.G presents LUSD generation rates.

Table 4.9.G: LUSD Generation Rates

Grade Level	Single Family
K-6	0.302
7-8	0.081
9-12	0.15

Source: LUSD 2003

The composite number used for K-12 is 0.533.

Based on the maximum allowable single family units per the Master Development Plan and generation rates, Table 4.9.H reflects an estimate of the project student generation.

A new elementary school facility will be constructed at The Preserve to serve a majority of the new elementary aged children. Students generated by the proposed project for middle and high school levels will be accommodated by Crista McAuliffe Middle School and Bear Creek High School.

Table 4.9.H: Estimated Student Generation from The Preserve

Grade Level	Single Family
K-6	424
7-8	114
9-12	211
Total:	**749**

Source: LSA 2006

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. The project applicant will provide an elementary school as identified in the project description.

Project implementation will not have a significant impact on LUSD school services.

Library

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 has four libraries that serve the residents. The libraries offer reading programs in addition to educational and recreational classes for families and children. The City's Library Master Plan does not provide provisions for a library in the northwestern section of the City. It is expected that the additional population generated as part of the proposed project may result in increased demand for library services.

Mitigation Measure LIB-1: Prior to issuance of building permits, the project applicant shall pay development impact 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 that considered appropriate or acceptable for the project uses.

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 Preserve 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 (COSMUD) has prepared a Water Supply Assessment in conjunction with the proposed project. The Water Supply Assessment is the basis for this section of the EIR and is provided in Appendix H.

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.

Like many northern California communities, the City of Stockton Metropolitan Area (COSMA) is experiencing substantial population growth and increasing water demands. At the same time, regulatory pressures, increased water usage in neighboring areas, and saline instruction affecting groundwater supplies are straining the City's already limited water supplies. As a result, the City of Stockton and its three urban water retailers have focused attention on the availability of existing surface water supplies from Stockton East Water District (SEWD) and the need to manage groundwater resources at a sustainable yield. The City of Stockton's objective is to achieve a long-term reliable water supply.

Beyond its cooperative participation in SEWD supplies, a product of the COS's effort in obtaining future long term reliable water supplies is a water right application to the State Water Resources Control Board (SWRCB) on January 6, 1996, that requested an increasing amount of surface water from approximately 20,000 acre-feet per year (AF/year) initially, up to 125,900 AF/year in 2050. To divert and deliver this surface water supply, the COS is pursuing the Delta Water Supply Project (DWSP) which will achieve the following three objectives:

- Managing groundwater resources for environmental benefit and to provide a long-term sustainable yield,
- Satisfying future demands by conjunctively using groundwater and surface water, and
- Providing the COSMA with the flexibility to control how and from what sources water demands are met.

In April 2003, Stockton's City Council approved the DWSP Feasibility Report and directed the COSMUD staff to complete the necessary environmental studies to comply with CEQA and NEPA. The CEQA environmental study for the DWSP was certified on November 8, 2005 by the Stockton

City Council. The SWRCB issued the Phase 1 water rights permit on December 20, 2005 in the amount of 33,600 AF/year.

Once the construction of the Phase 1 DWSP is completed, the urban water retailers will continue to rely upon existing surface water supplies through SEWD and existing groundwater supplies that underlie the COSMA service area. The reliability of water supply resources for the COSMA will be secure for some time while plans and agreements are secured for optimum use of water supplies for the long term build-out of the City of Stockton General Plan.

Existing Water Supply/Future Water Supply

Since 1978, SEWD has been treating and supplying treated surface water up to 45 million gallons per day (mgd) to the region's urban areas through its three urban contractors (water retailers): City of Stockton Municipal Utilities District, Cal-Water, and San Joaquin County. Both local indigenous groundwater from portions of the regional aquifer underlying each purveyor and surface water from SEWD have satisfied the three water retail provider's water demand during 1994 to 2005. SEWD is currently pursuing phased efficiency enhancements to their surface water treatment plan (WTP) to increase capacity by 15 mgd for a rated WTP capacity of 60 mgd by 2009. SEWD's recent enhancements have increased capacity in their WTP from 45 mgd to 50 mgd. Existing SEWD water sources with critical year availability are illustrated in Table 4.10.A.

Table 4.10.A: Current SEWD Water Sources and Critical Year Availability

Source	Annual Contract Amount Thousand Acre-feet (TAF)	Projected "Critical Year" Annual Availability (AF/Year)			
		Planning Year			
		2000	2010	2020	2035
Current and Future "Firm" Sources of Supply					
Reclamation – New Hogan Water Supplies, SEWD entitlement	Total Yield 84.1 TAF[1] SEWD Entitled to M&I or AG 40.171 TAF	20,000	12,000	12,000	12,000
Reclamation – New Hogan Water Supplies, CACWD unused entitlement[2]	CACWD Entitled 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			

Source	Annual Contract Amount Thousand Acre-feet (TAF)	Projected "Critical Year" Annual Availability (AF/Year)			
		Planning Year			
		2000	2010	2020	2035
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**

Notes:
[1.] SEWD has a right to 56.5 percent of the yield, and CACWD has rights to the remaining 43.5 percent. The estimated New Hogan yield of 84,100 ac-ft is further reduced by 13,000 ac-ft annually for prior riparian rights. CACWD currently uses approximately 3,500 ac-ft of its allocation
[2.] Based on an agreement between CACWD and SEWD, SEWD currently has use of the unused portion of CACWD's appropriative water rights that currently yields approximately 28 TAF to SEWD in 2005 and is expected to be reduced to 23 TAF by 2005.

The urban water retailers also exercise their rights as overlying owners and groundwater appropriators to extract groundwater from the groundwater basin underlying COSMA for delivery to its customers. Groundwater is used in addition to surface water supplies described above to meet water demands.

Groundwater use within the broader San Joaquin County region has resulted in a decline of groundwater elevations over the period from 1947 to 2004. In the late 1970's, SEWD began to provide supplemental supplies of surface water to the Stockton urban water retailers. The use of surface water in the COSMA resulted in an increase in groundwater elevations. Increases in the elevation continued until the drought of the late 1980's and early 1990's. The recent stabilization and improvement in groundwater elevations is the result of wet hydrology, active recharge projects, and increased surface water deliveries in areas historically served by groundwater.

Over the period from 1947 to present, saline water has migrated east-northeast and rendered groundwater unusable in some areas. The sustainable yield of the groundwater basin is based on changes in the rate of movement of the salinity front. Over the years, there have been various estimates of the sustainable long-term yield from the groundwater aquifer. The February 1992 Supplemental Report for Water Supply prepared for the City of Stockton indicates that a range of 0.75 to 1.00 AF/ac/year on a long term basis is sustainable.

The current existing water demand for the City of Stockton Metropolitan Area (COSMA) is 82,064 acre-feet per year. This is expected to increase to 85,330 acre-feet per year by 2015. Table 4.10.B outlines the estimated future water demand based on the approved General Plan.

Table 4.10.B: 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	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	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

The project engineer has identified a program for accommodating the proposed project's water demand requirements. Water will be provided as both potable and non-potable water to assist in reducing the overall water demand for the project.

Table 4.10.C: Project Water Demands by Land Use

Land Use	Acreage	Unit Demand Factor (AF/acre/year)	Estimated Water Demand (AF/year)
Standard Residential Lots	118.47	1.5	177.71
Condominium	28.35	3.00	85.05
Compact Lots	172.52	3.00	517.56
Sub Total	319		780.32
Park Summary (proposed	0		-

Land Use	Acreage	Unit Demand Factor (AF/acre/year)	Estimated Water Demand (AF/year)
application)			
Parks/Trails	28.7	2.00	57.40
Sub Total	28.7		57.40
Other		1.60	-
School	10	1.50	15.00
Fire Station	1.2	1.50	1.80
Sub Total	11.2		16.80
Total:	359.3		854.52

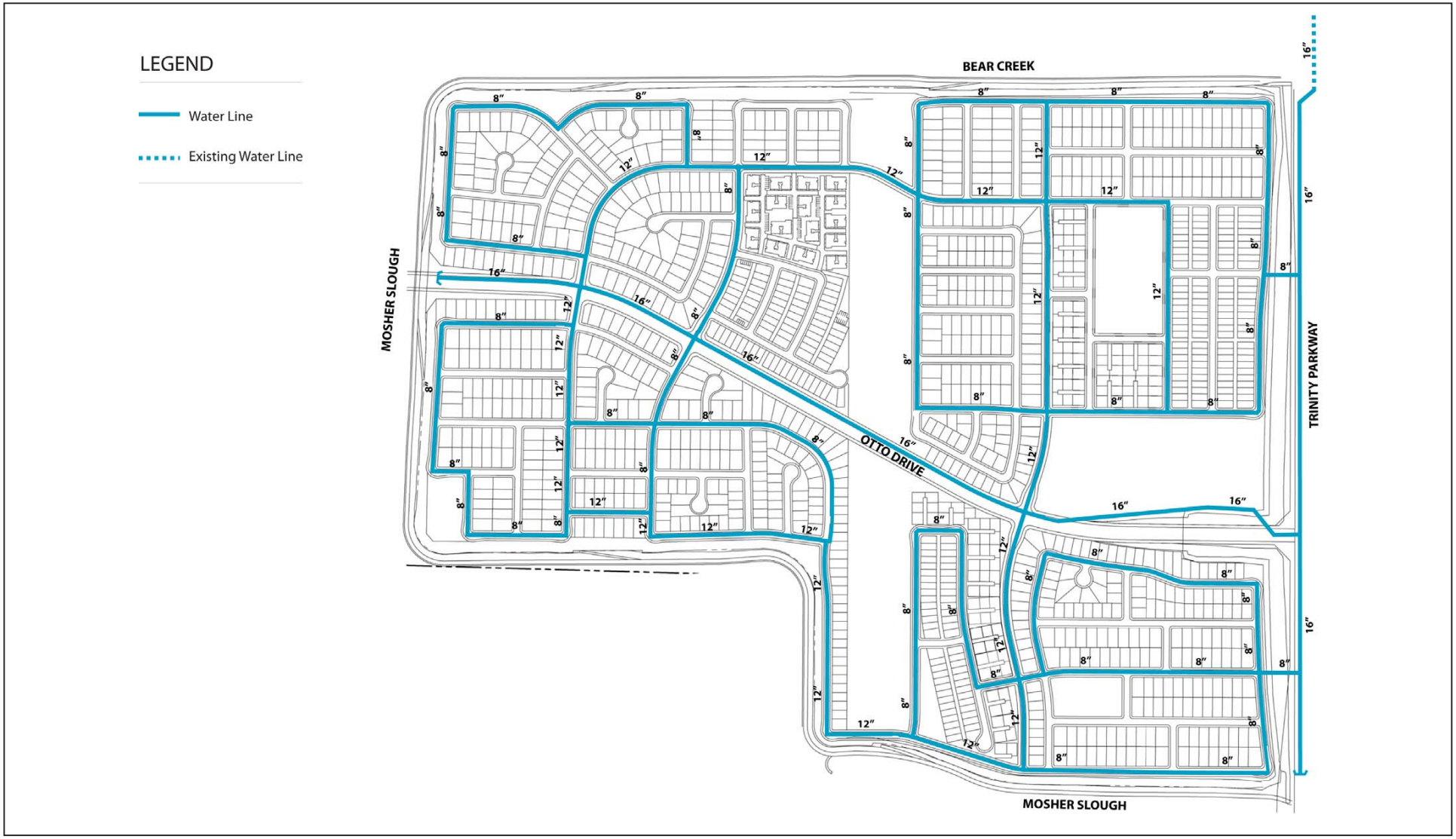
The project water demands for potable and non-potable water requirements (Table 4.10.C) were extracted from the Water Supply Assessment. For potable water demand it is estimated that a total of 797.12 AF/year would be required. For non-potable water demand it is estimated that a total of 57.40 AF/year would be required. Combined total water demand for the proposed project is 854.52 AF/year. The following presents the plan for delivering project water supplies.

Potable Water.

Domestic water will be provided to The Preserve by the City of Stockton's Water Utility Department in accordance with the current General Plan. A 16" water main is planned within Trinity Parkway. Three connections top this main will be made; one at Otto Drive, a second north of Otto Drive and a third south of Otto Drive, thus creating a looped water system. The 16" connection at Otto Drive will be extended to the west and provisions will be made for the future connection across the future Otto Drive Bridge into the Shima Tract. Distribution lines within The Preserve will be accomplished through a network of 12" and 8" lines connecting to the three 16" transmission lines. See Figure 4.10.1 for the conceptual water master plan. A corridor for a future 42" line will be provided within Trinity Parkway ROW to facilitate transmission associated with the City's Delta Water Project. The future Trinity Parkway Bridge over Mosher slough will include water infrastructure as part of the crossing.

Non-Potable Water.

The non-potable water system has been designed to reclaim urban nuisance and dry weather flows utilizing treatment from the wetlands for irrigation purposes. This water removal creates circulation and overall, a healthier environment for the wetland plants. The primary source of non-potable water supply will be from Mosher Slough utilizing existing riparian water rights (refer to discussion below regarding riparian water rights). The Non-Potable Water System Plan is illustrated in Figure 4.10.2.



LSA

FIGURE 4.10.1

The Preserve

Conceptual Water Master Plan

SOURCE: Mid-Valley Engineering, 2007

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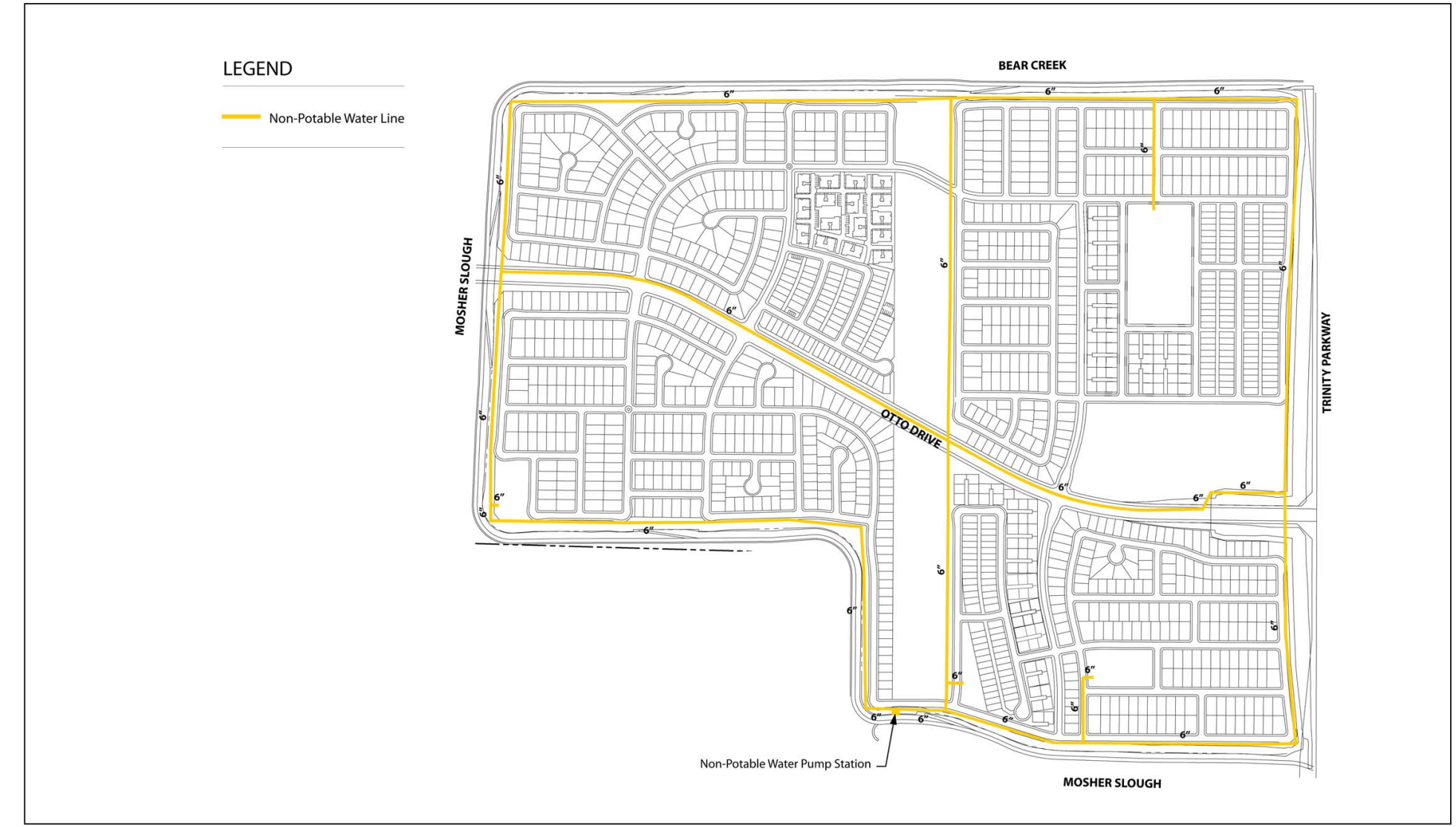

LSA

FIGURE 4.10.2

The Preserve

Conceptual Non-Potable Water Plan

SOURCE: Mid-Valley Engineering, 2007

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Effects Considered Less than Significant

Impact WSA-1: Implementation of the proposed project will increase the demand for water supplies and could adversely affect long-term water service reliability unless adequate sources are obtained.

The proposed project's water demands will be met using surface and ground water. Currently, the average water demand per acre is 1.6 acre-feet per acre per year for urban uses. This average is used to assess demand from future developments. Surface and ground water supplies will be used to meet the proposed project water demand. The source of the water (surface or ground) will depend on the hydrologic year (wet, dry or critical) and availability of surface water.

Table 4.10.D indicates that over the 70-year period, only 41,013 AF/year of groundwater use takes place on average, this along with meeting the dry year requirements in 2025 provides the conclusion that existing supplies meet existing water demands plus the proposed project water demand without exceeding the average sustainable groundwater yield of the aquifer underlying the City of Stockton.

Table 4.10.D: Existing (2004) and Foreseeable Water Supplies for the COSMA by Retail Service Provider

Year Type		Demand Reduction	Surface Water (acre-feet/ year)	Ground Water (acre-feet/ year)	Total (acre-feet/year)
Normal	COSMUD	0%	44,659	11,963	56,622
	Cal-Water		18,247	13,823	32,070
	County		1,378	716	2,094
	Total		**64,284**	**26,502**	**90,786**
Single Dry	COSMUD	15%	3,972	44,156	48,128
	Cal-Water		15,510	11,749	27,260
	County		1,171	609	1,780
	Total		20,654	56,514	77,168
Multiple Dry (Hypothetical 3-year Drought Period into the Future (looking at both the 1977 to 1980 Drought Sequence and 1987 to 1990 Drought Sequence)	COSMUD	0% (1st Year)	44,659	11,963	56,622
	Cal-Water		18,247	13,823	32,070
	County		1,378	716	2,094
	Total		64,284	**26,502**	**90,786**
	COSMUD	10% (2nd Year)	2,991	43,429	46,420
	Cal-Water		16,423	12,441	28,863
	County		1,240	644	1,885
	Total		20,654	**56,514**	**77,168**
	COSMUD	10% (3rd	2,991	43,429	46,420

Year Type		Demand Reduction	Surface Water (acre-feet/ year)	Ground Water (acre-feet/ year)	Total (acre-feet/year)
	Cal-Water	Year)	16,423	12,441	28,863
	County		1,240	644	1,885
	Total		20,654	56,514	77,168
Average over 70-years	COSMUD	5%	25,997	26,474	52,471
	Cal-Water		18,247	13,823	32,070
	County		1,378	716	2,094
	Total		**45,622**	**41,013**	**86,636**

Reference: City of Stockton Urban Water Management Plan 2000 Update, December 2000.
Notes:1) Existing is actual 2004 calendar year usage of surface water and groundwater. The assumption is that 2004 depicts a normal year hydrologic and water supply availability condition.
2) Dry year surface water amounts assume SEWD's New Hogan Central Valley Project water with deficiencies, and Oakdale Irrigation District and South San Joaquin Irrigation District deficiencies as stipulated in the contract for these water supplies.
3) Normal year surface water deliveries are restricted to the projected availability of SEWD conveyance and treatment plant capacity (not to exceed 45 mgd).
4) Foreseeable includes all projects that have been approved or have a WSA as of the date of this WSA.

As previously indicated, the SWRCB issued the Phase 1 water rights permit for the DWSP on December 20, 2005 in the amount of 33,600 AF/year. Once the construction of the Phase 1 DWSP is completed, the urban water retailers will continue to rely upon existing surface water supplies through SEWD and existing groundwater supplies that underlie the COSMA service area. The reliability of water supply resources for the COSMA will be secure for some time while plans and agreements are secured for optimum use of water supplies for the long term build-out of the City of Stockton General Plan.

The Water Supply Assessment indicates that the COSMUD currently cannot support the project without the DWSP Phase 1 project based on inadequate surface water entitlements and the infrastructure to divert, treat and convey potable water to the project along with surface water supplies from SEWD and ground water. 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. Once constructed, the DWSP will provide sufficient water supply to meet the project's build-out water demand as well as all existing and reasonably foreseeable water demands. The COSMUD makes this determination based on the information contained in the WSA and on the following specific facts:

- 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 to meet existing and foreseeable water demands without impacting environmental values and/or impacting the current stabilization of the groundwater basin underlying the COSMA.
- The project water demands 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 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 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

A consequence of developing the 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 in the WSA.

Senate Bill 610 does not require a water supplier to identify other water supplies not needed to meet future water demands. As part of this WSE, 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 this WSE—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.

Much 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 March of 2005. The conclusions reached on the riparian status of each of the properties are illustrated below on Table 4.10.E:

Table 4.10.E: Riparian Water Rights

Assessor's Parcel Number	Parcel Acres	Status of Acreage Included in Project
071-17-02	259.52	All but 40 acres riparian Northern 80 acres riparian to Bear Creek Remainder riparian to Mosher Slough
071-17-04	50	All riparian to Mosher Slough
071-17-05	50	All riparian to Bear Creek A portion riparian to Mosher Slough as well
Total Acreage	359.52	319.52 acres riparian (89%)

Of the total 359.52 acres included in the project, approximately 319.52 acres are riparian to Bear Creek and/or Mosher Slough and could be served by riparian water from these watercourses on a year-round basis for domestic and nonpotable purposes. Therefore, 89% of the total project water demand could be met through use of the riparian water rights currently 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 approximate 379 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 should 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 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 the 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 can be extended from Otto Drive. The remaining infrastructure needed includes numerous smaller pipes to distribute water at appropriate pressures to all points within the system (Figure 4.10.1). Therefore, the conditions outlined in **Significance Criterion WAT-b** would not occur. In addition, 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.

Mitigation Measure WSA-1b: Prior to issuance of building permits, the applicant shall provide evidence to the Director of Municipal Utilities at the City of Stockton of compliance with plumbing, metering, and other water conservation measures in effect, including any provisions outlined included in the City's Urban Water Management Plan, 2005 Update.

Mitigation Measure WSA-1c: Prior to approval of improvement plans for each development unit, the applicant will perform a water system analysis, acceptable to the Director of Municipal Utilities, demonstrating that the water system improvements are sufficient to meet the City of Stockton service standards.

Mitigation Measure WSA-1d: The City-wide Water Master Plan may be required to be amended and approved by the Stockton City Council, if the subject project is approved prior to the adoption of utility master plans for the 2035 General Plan Project.

The available sources for water supply, together with existing and planned water infrastructure, are expected to provide long-term water availability to the project. The above measures will ensure that these programs will be implemented.

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

Sewage Treatment

The Stockton Regional Wastewater Control Facility (RWCF) provides secondary and tertiary treatment of municipal wastewater from throughout the City. The RWCF is located north of Highway 4 on both sides of the San Joaquin River. The primary and secondary treatment facilities are located on the east side of the river, while secondary polishing facilities (consisting of 630 acres of oxidation ponds plus dissolved air flotation facilities), filtration facilities, and disinfection facilities are located on the west side of the river. Primary and secondary solids are treated by anaerobic digestion, dewatered, and disposed of off-site. Effluent is discharged into the San Joaquin River adjacent to the RWCF.

The RWCF has a current dry weather flow capacity of 42 million gallons per day (mgd). Current dry weather flows at the facility are estimated to be on the order of 35 mgd, or approximately 80% of the current dry weather capacity of the facility. The agreement with Operations Management International, Inc. (OMI) includes a provision to expand the dry weather flow capacity of the RWCF to 48 mgd. In addition, as noted above, the agreement with OMI also includes expansion of existing filtration facilities to meet Title 22-based requirements, addition of nitrifying biotowers to the secondary treatment facilities, and inclusion of an effluent polishing wetland, plus a number of other, smaller improvements. That document used 48 mgd of dry weather flow capacity as the basis for an initial RWCF expansion, with eventual expansion to 55 mgd of RWCF dry weather flow capacity to serve a buildout population of approximately 380,000 inhabitants, with 3 mgd of capacity allocated to "future economic development."

Additional planned treatment plant improvements will be implemented as part of an agreement with OMI to increase capacity for the General Plan buildout. The City has initiated the construction of a six-staged plant expansion program at the RWCF to increase the overall treatment plant capacity. Under the expansion program, the RWCF would be capable of treating 48 mgd. In July 1997, City Council approved a General Plan build out wastewater treatment capacity of 55 mgd.

Existing Collection System

The City of Stockton sanitary sewer collection system is divided into 10 designated sub-areas or “systems”. Systems 1 through 7 have been in existence for at least 15 years, and encompass the majority of the City. System 8 was intended to serve southern areas of the City, and has been partially constructed; however the majority of the area remains undeveloped. System 9 was intended to serve currently undeveloped areas at the eastern edge of the City. System 10 was intended to serve northern areas of the City, and has been partially constructed; however the majority of the area remains undeveloped.

The May 2003 City of Stockton Wastewater Collection System Master Plan Update (May 2003 Update) is the most recent planning document evaluating system capacity for the eastern portions of

the City. That May 2003 Update included evaluations of future flow scenarios including 2005, 2010, 2015, 2020 and buildout conditions. In addition, a collection system modeling analysis of the City wastewater collection system was performed as part of the May 2003 Update and available pipe capacities were summarized and identified for improvement. Figure 4.11.1 presents the conceptual sewer system plan for the project.

Gas and Electric Services

The project site is within the service area of the Pacific Gas and Electric Company (PG&E). PG&E currently serves the development located in Spanos Park West, as well as developments south of the site in the City of Stockton.

Electricity

The project site is within the Pacific Gas & Electric Company (PG&E) service area. PG&E currently serves the existing agricultural operations on the project site and provides service to the Twin Creek subdivision. New electrical lines should be installed to serve all the project areas and public facilities. PG&E has substation improvements planned at Eight Mile Road and Trinity Parkway to serve this development.

Natural Gas

There are existing gas facilities that serve the Twin Creek subdivision and the facilities are adequately sized to serve additional areas.

Communication Services

Telephone service to the project area would be provided by AT&T. The communication facilities that will be located in the streets will include a mix of fiber optics and copper cable and their supporting facilities. Although the trench layout has not been specified, it generally consists of multi-duct facilities within the backbone areas, and duct plus direct buried facilities within the collector and service streets.

Cable television services are provided by Comcast. The Stockton Municipal Code, Part IV, Cable Television Franchises Procedures, Specifications and Terms, requires the extension of services "...to any area annexed . . . during the term of the franchise." Extension of telephone services and cable television services would occur in conjunction with the installation of other private utility facilities and public improvements.

LSA

FIGURE 4.11.1

The Preserve

Conceptual Sewer System Plan

SOURCE: The Preserve MDP, 2007

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4.11.2 Impact Significance Criteria

Potential significant impacts associated with public utilities and service systems have been evaluated using the following criteria:

Wastewater

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.

Electricity/gas/energy

EG-a Increased demand for gas or electricity requiring new production facilities and infrastructure to supply the development;

EG-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; and

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 Less than Significant

Impact EG-1: The project will 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 current 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 extending from the existing Twin Creek subdivision at the end of Otto Drive. 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.

It is expected that PG&E will have adequate capacity available to serve the proposed project with electrical service. It is unclear whether PG&E can provide natural gas service, however, this is not considered significant due to PG&E's ability to provide electrical service. Consequently, the conditions outlined in **Significance Criterion EG-a** would not occur.

Impact COM-1: The project is not expected to result in increases in telephone and cable service demand which could 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. Pursuant to the franchise agreement between AT&T and the State of California, AT&T will provide service to all new developments within the franchise area. Similarly, the Stockton Municipal Code, Part IV, Cable Television Franchises Procedures, Specifications and Terms, requires the extension of services "...to any area annexed...during the term of the franchise." 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

Wastewater

Impact WW-1: Existing and proposed wastewater conveyance facilities may not have adequate capacity to meet proposed project demand.

The Preserve will be served by the Stockton sewerage system. There is a 54-inch gravity flow sewer line running north to south along the Trinity Parkway that has the capacity and depth to serve the entire project by gravity flow and is currently operating below 80% of capacity (2004 Background Report). A network of gravity flow sewer main lines serving the development will be designed within the arterial and major collector streets which would be fully constructed as part of Phase One. The on-site sewer will ultimately discharge into the Trinity Parkway sewer facility. Wastewater will ultimately be conveyed to the City's Regional Wastewater Control Facility (RWCF), located on Navy Drive in southwest Stockton via the Westside Interceptor Pipeline.

A collection system modeling analysis of the City wastewater collection system was performed as part of the May 2003 Update and available pipe capacities were summarized. According to the results, the trunk line along Trinity Parkway has capacity to support major new development, although in certain cases development plans already exist that would utilize some or all of that capacity. Therefore, The Preserve will not have significant impacts according to **Significance Criteria WW-a**. However, implementation of the following will be required as conditions of the 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: The City-wide Sanitary Sewer Master Plan may be required to be amended and approved by the Stockton City Council, if the subject project is approved prior to the adoption of utility master plans for the 2035 General Plan Project.

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 could 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.

Natural Gas/Electricity/Energy

Impact EG-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 4.11.A.

Table 4.11.A: Average Monthly Gas and Electric Demand for Residential Development

Land Use	Proposed Units (maximum)	Therms	kW	Total
Proposed Preserve Development				
Natural Gas	1404	37		51,948 Therms
Electricity	1404		600	842,400 kW

Source: Spanos Park West 1988 SEIR

As shown in Table 4.11.D, the proposed project will need approximately 51,948 therms of natural gas and 842,400 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 these increases.

Mitigation Measure EG-1: As feasible, the applicant should install energy reducing fixtures and implement energy reducing measures to decrease the amount of energy used.

Implementation of the proposed mitigation measures outlined above would reduce the impact on electric service facilities to a less than significant level.

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 site is typical of the San Joaquin Valley and Delta region with elevations around sea level. This area is characterized by flat landforms surrounded by levees with heights of 6 to 10 feet tall along the drainage canals and sloughs, as shown in Figure 4.12.1. The site is currently fallow and covered with grasses and small plants. High voltage transmission lines run north to south through the approximate center line of the site and there is currently no artificial lighting on the property.

With the exception of the electric transmission lines and levees around the perimeter of the site, there are no unique 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.

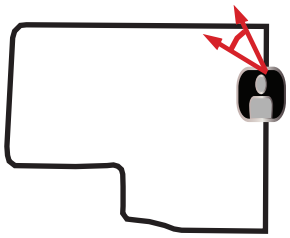
Visual Character of Adjacent Uses. The project site is bounded on the north, west and south by Bear Creek and Mosher Slough, respectively, as shown in Figures 4.12.1 and 4.12.2. North of the site, across Bear Creek, are riparian wetlands associated with the Pixley Slough (as shown in Figure 4.12.2) and a bike path on top of a berm which separates wetlands from the Westlake development before traveling along Bear Creek to the northeast of the project site. To the northeast of the project site, across Bear Creek, are large white water reservoir tanks, a 5-story commercial building (as shown in Figure 4.12.2) and residential neighborhoods in the Westlake development further to the north.

Residential and commercial developments are located further north along Trinity Parkway. To the northeast of the project site glimpses of the I-5 Bridge over Bear Creek are visible. To the east of the project site is a residential subdivision (Twin Creeks Estates). To the south and west of the project site and across the Mosher Slough are walnut orchards and other agricultural areas, as shown in Figure 4.12.2.

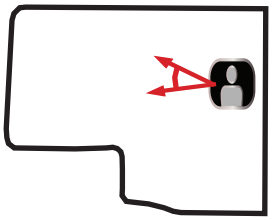
Existing Views of the Site. The site is visible from three prominent viewpoints. These are:

- Views from boaters using Mosher Slough and Bear Creek are dominated by the levees and a few trees interspersed along the levee banks, as shown in Figure 4.12.2. The views of the levee banks consist of 6 to 10 feet tall dirt levees with banks of a mix of rough rock fill, exposed dirt, riparian vegetation and intermittent trees. Where the levees heights are lower, it is possible to see the expansive flat agricultural fields and power transmission lines on the site and other agricultural fields in the backdrop. Views of the project site from the south looking north from Mosher Slough, include the levee banks in the foreground with the five-story AGS building in the background.

- Public views from Otto Drive within Twins Creeks Estates are shown in Figure 4.12.2. The flat terrain in the area limits the views of the project site to the views of levee banks and power transmission lines from public areas in the Twin Creeks Estates.



Northwest view at eastern project limits. Photo shows Bear Creek.



Western view across project sight

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KEY

Photographer

Project boundary

View of picture

FIGURE 4.12.1

The Preserve

Project Site Photos

SOURCE: LSA Associates, Inc.

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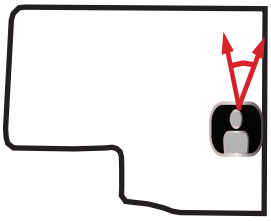
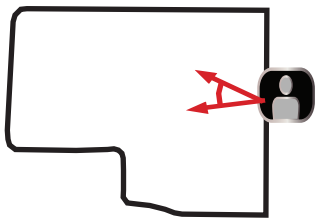
View of 5-story commercial building, water reservoir tanks, and residential neighborhoods to the northeast.



View of levee bank from Otto Drive.



LSA

KEY

Photographer

View of picture

Project boundary

FIGURE 4.12.2

The Preserve
Project Site Photos

SOURCE: LSA Associates, Inc.

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Views of the project site from the Trinity Parkway and the adjacent bike path (as seen in Figure 4.12.2), include foreground views of the levee banks. Behind the levee banks are expansive views of the flat and open agricultural fields and power transmission lines, with other flat agricultural fields filling the horizon in the background.

Existing Policies and Regulations.

The following General Plan policies relate to visual and aesthetic resources.

City Concept and Design Goal 1: Enhance the sense of community identity in Stockton

Policy 1: Promote aesthetically pleasing and environmentally sound urban development by providing for design flexibility through the use of development by providing for design flexibility through the use of development controls such as planned unit developments.

4.12.2 Impact Significance Criteria

The project would have a significant impact on the environment if it would:

VIS-a Have a substantial adverse effect on a scenic vista as viewed from a public vantage point;

VIS-b Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway;

VIS-c Substantially degrade the existing visual character or quality of the site or its surroundings by failing to blend in with the visual character of the surrounding neighborhoods; or

VIS-d Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

4.12.3 Impacts And Mitigation Measures

Impacts Considered Less than Significant

Impact VIS-1: Development of the project site would substantially damage scenic resources.

There are no State scenic highways adjacent to the project site.[1] There are no rock outcroppings or historic buildings on the project site nor are any of the trees on the project site visible from a scenic

[1] California Scenic Highway Mapping System, 1999. San Joaquin County. Website: http://www.dot.ca.gov/hq/ LandArch/scenic/cahisys.htm

highway. Therefore, the proposed project would not substantially damage scenic resources. The conditions outlined in **Significance Criterion VIS-b** would not occur.

Impact VIS-2: Development of the project site would substantially degrade the existing visual character or quality of the site or its surroundings by failing to blend in with the visual character of the surrounding neighborhoods.

The project site is located in an area that has historically been in agricultural production. The surrounding areas are gradually converting to urban uses (e.g. Spanos Park West and Westlake Villages). The proposed project would entail medium density residential developments similar to the adjacent residential development to the east and other the surrounding neighborhoods. Therefore, the conditions outlined in **Significance Criterion VIS-c** would not occur.

Potentially Significant Impacts

The proposed project would have the following potentially significant impacts:

Impact VIS-3: Development of the project site will not have a substantial adverse effect on a scenic vista as viewed from a public vantage point.

The proposed project would involve the urban development on existing open agricultural land. The most prominent public views of the project site are from Otto drive in the Twins Creeks Estates residential neighborhood, from the Bear Creek and Mosher Sloughs and the Trinity Parkway. Views from Otto Drive will change from a road that stops at an exposed dirt levee bank into a new residential development and intersection with the Trinity Parkway extension.

Views from the Mosher Slough and Bear Creek water ways have changed with construction of the levee improvement project. Additional changes are expected due to the proposed project with a trail system adjacent to the waterways. According to the City staff, The Preserve project is not within an area designated with Scenic Vista status. The incorporation of the following mitigation measure will ensure that views from the adjacent residential development are not adversely affected by the urban conditions created by the proposed project.

Mitigation Measure VIS-1: The City shall require the project applicant to submit a landscape plan for Trinity Parkway which will provide a visual screen and green buffers between the project and the adjacent existing residential development.

Implementation of the above listed mitigation measure would reduce impacts affecting scenic vistas to less than significant levels. Consequently, the conditions included in Significance Criterion VIS-a will be avoided.

Impact VIS-4: Development of the project site may create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

The proposed project would involve new sources of lighting which will affect day and nighttime views in the area. The majority of the project site is adjacent to agricultural lands and wetland areas, and therefore increased lighting will have minimal adverse impacts on these areas. Implementation of Mitigation Measure VIS-1 will create a screen of trees to reduce light spillover from the project site. In addition, traffic entering and leaving the project area via Otto Drive may result in impacts from headlights due to the roadway rising over the existing dryland levee. However, landscaping required by mitigation measure VIS-1 will reduce headlight impacts as well as new light source impacts.

Mitigation Measure VIS-2: The City shall require the project applicant to submit a lighting plan which includes specifications for lighting along the Trinity Parkway Extension to be focused downwards and away from nearby residences in the Twin Creeks Estates. The City shall ensure that the landscape plan includes landscaped medians on the Trinity Parkway Extension to reduce light spillover from the residential developments and new road.

Implementation of the above listed mitigation measure would reduce impacts affecting lighting and glare to less than significant levels. Therefore, the conditions included in Significance Criterion VIS-d will be avoided.

4.12.4 Level Of Significance After Mitigation

The above mitigation measures will assist in reducing the cumulative project impacts on visual resources to less than significant levels.

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 The Preserve Project, August 31, 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

Prehistory

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 (10,000-6000 B.C.); the three-staged Archaic Period, consisting of the Lower Archaic (6000-3000 B.C.), Middle Archaic (3000-1000 B.C.), and Upper Archaic (1000 B.C. - A.D. 500); and the Emergent Period (A.D. 500-1800).

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).

The San Joaquin Valley was probably settled by native Californians between 12,000 to 6,000 years ago. The San Joaquin Valley has had many population movements and waves of cultural influence from neighboring regions; it was probably first occupied at the end of the Pleistocene, approximately 11,500 to 7,500 years ago, as evidenced by core and flake tools (Moratto 1984:214-5). Hokan speakers may have been the early occupants of the San Joaquin Valley, eventually displaced by migrating Penutian speakers (ancestral Yokuts) coming from areas outside California. The Penutians most likely entered the San Joaquin Valley in several minor waves, slowly replacing the original Hokan speakers, causing them to migrate to the periphery of the valley (Elsasser 1978:41; Shipley 1978:81). By about A.D. 300-500, the Penutian settlement of the San Joaquin Valley was complete. At the time of European contact, the study area was within the territory of the Northern Valley Yokuts. The population of the 18th century Valley Yokuts is estimated at approximately 40,000, making them the largest ethnic group in precontact California (Moratto 1984:173).

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 watercourses 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 Cosumnes 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 structure, with some underground structures belonging to wealthier individuals (Levy 1978:408-409).

History

Stockton History. Stockton found its start as a supplier of goods to the thousands of miners who flocked to the Sierra Nevada gold fields during the California Gold Rush of 1849. Captain Charles M. Weber recognized early that the city would become profitable as a supply center for gold miners and purchased the land that would become Stockton from William Gulnac in 1845. Originally known as Tuleberg, the town's name was changed by Weber to Stockton in 1849 in honor of Commodore Robert F. Stockton (Hoover et al. 1990:350).

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 soon 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. In 1849, 1,000 people lived in Stockton. In 1850 Stockton was incorporated and also became the county seat (Hoover et al. 1990:350). In 1851, Stockton, which consisted primarily of tents and frame buildings, 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 1860s the city began making civic improvements that included road construction, street improvements, and sewer works in addition to more churches, schools, and three volunteer fire companies. By the mid 1860s residential neighborhoods were also being developed. In the 1880s and 1890s Stockton became more industrialized. Grain mills and warehouses were constructed, along with manufacturing plants and lumber yards, near the Stockton Channels. More residential housing was developed for the growing population (Costello and Marvin 1999:14-15).

Beginning in 1850 Stockton served as a river landing, with the paddle-wheel steamers the *Delta King* and the *Delta Queen* navigating the San Joaquin River from 1850 to 1938. The first inland seaport in California opened in Stockton in 1933 and soon Stockton was known for its boat building industry. Local shipyards were active during World War II filling government contracts; by 1943 fifty firms were supplying the wartime effort. The late 1940s saw a growth of residential and commercial areas to the north of Stockton and by the 1970s the population had almost quadrupled (Hillman and Covello 1985:5-9).

Today, with a population of 260,000, Stockton remains the focal point for the agribusiness of the San Joaquin Valley. The rich farmland of the San Joaquin/Sacramento River Delta supports varied agriculture, growing potatoes, corn, sunflowers, tomatoes, asparagus, and more recently, wine grapes. Stockton is a major transportation hub and a popular water recreation area that has over 1,000 miles of waterways for boating and water sports (City of Stockton 2003).

Delta History. In 1850, Congress passed the Swamp and Overflow Land Act which gave all states any unsold federal land that was either swamp or subject to overflowing. Under the act, states were to ensure that the lands would be drained, reclaimed, and used for agricultural purposes (Anonymous 1994:5). 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 swamp and overflow lands. By 1871, almost all of the state's swampland had been sold to private interests (Thompson and Dutra 1983).

In the years following the Gold Rush, the economy of the Stockton area shifted from mining to agriculture. In the 1860s, the number of miners in the state dropped from 83,000 to 36,000 (US Army Corps of Engineers 1990:4). Many of the miners relocated to the Delta to become farmers (Cook n.d.:20). Large number of Chinese laborers became available in 1869 when the transcontinental railroad's Chinese labor force found themselves without work (Delta Protection Commission 1994:5). They made their way to the Delta where, working with simple hand tools, they built the first levees around a number of islands (Maniery and Syda 1989:19).

The earliest levee construction was not an organized or systematic effort. The Delta's first levee may have been constructed in 1849 on Grant Island; other sources indicate that the first levee was built on Merritt Island in 1853 (Delta Protection Commission 1994:5). Initial reclamation attempts took the form of shoe string levees: low mounds of sediment atop natural levees along rivers that only served to hold back tidal waters (Thompson 1982:9). Levees around the Delta's islands were built next; some were constructed of sediment and some were constructed of peat (Thompson 1982:12). Early levees were prone to failure, as evidenced by floods at the Webb Tract in 1872-3, Bacon Island in 1873, and Bouldin Island in 1874 (Maniery and Syda 1989:19). Levee construction improved in the late 1800s, with the invention of the clamshell dredger, hydraulic dredger, and steam driven dredger. Mechanical dredgers constructed levees using sediment deeper than the shallow peat used by human labor, resulting in stronger levees (Maniery and Syda 1989:21).

By 1880, levees had been constructed around almost all land in the Delta, and by 1930, all but a few areas were being farmed (Delta Protection Commission 1994:6; Frayer, Peters, and Pywell 1989:6). Since flooding in 1907, levee maintenance and improvement has been an ongoing process, with spoils

from channel dredging being used to raise and widen the levees (Dillon 1982:92). Almost all of the Delta's flood control levees have been improved over the years (John Thompson 2005, pers. comm.).

The Delta now contains over 500,000 acres of reclaimed land, interconnected by 1,000 miles of natural and man-made watercourses (Delta Protection Commission 1995:1). Agriculture dominates the Delta's economy, with over 91 per cent of the Delta zoned for agriculture (California Department of Water Resources 1986:2). Water-based recreation in the form of fishing, boating, and water-skiing has come to occupy a large part of the Delta's economy (Delta Protection Commission 1995:1).

Paleontological Setting

The project area lies in the southeastern portion of the Sacramento-San Joaquin Delta. Within and adjacent to the project area, the fertile soils of this valley have an average depth of between 5 to 6 feet (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 lie on Late Pleistocene Modesto Formation sediments (Wagner et al. 1987). Sediments of this age and formation in the vicinity of the project area have produced significant vertebrate fossils from the Rancholabrean land mammal age (Marchand and Allwardt 1977). Common examples of Rancholabrean vertebrate fossils include ground sloth, dire wolf, saber-toothed cat, camel, bison, mammoth, horse, rodent, bird, reptile and amphibian fossils (Savage 1951; Stirton 1951; Bell et al. 2004). The Modesto Formation sediments directly underlie the soil layer within and adjacent to the project area and any fossils within them can be encountered just below the soil depth.

Undifferentiated Early Tertiary Marine Deposits

Modesto Formation sediments are underlain at great depth (hundreds of feet) by Tertiary (65-2 million years old) sediments (Wagner et al. 1987). Little is known about these marine deposits near the project area as they are deeply buried. The likelihood of encountering these deposits is very low to non-existent.

Background Research

Cultural Resources

A records search and literature review were done to (1) identify previously recorded cultural resources and previous cultural resources studies of or adjacent to the study area, (2) assess the likelihood of unrecorded cultural resources based on archaeological, ethnographic, and historical information, and the distribution of nearby cultural resources in relation to their environmental settings, and (3) obtain information for the cultural settings portion of the report.

Records Search. A records search (File No. 5592L) of the project area and a ¼-mile radius was conducted on January 24, 2005, by the Central California Information Center (CCIC) of the California Historical Resources Information System, California State University, Stanislaus, Turlock. The CCIC, an affiliate of the State of California Office of Historic Preservation, is the official state repository of cultural resources records and reports for San Joaquin County (Appendix A).

No cultural resources have been recorded within the project area. One cultural resource, P-39-004529, The Preserve Levee, was identified immediately adjacent to the project area. The levee was evaluated for eligibility for listing in the National and the California registers (Kaptain and Gerike 2005a, 2005b) (C). The evaluation found the levee not eligible for listing in either register.

One cultural resources study has been conducted of the project area (Napton 1987a). No cultural resources were identified by the study. At the time of the survey, the surface visibility was excellent and the "entire surface was exposed for inspection" (Napton 1987a).

Two cultural resources study have been conducted adjacent to the project area:

a. Napton (1987b) conducted a 1,285-acre survey north of the The Preserve. Two cultural resources were identified during this survey; CA-SJO-151, a prehistoric site consisting of chert and obsidian fragments and a charmstone, and CA-SJO-0198H, a historic site consisting of a surface scatter of brick, glass, nails, and ceramics.

b. LSA conducted a 9-acre cultural resources study adjacent to the eastern boundary of The Preserve (Kaptain 2002). No cultural resources were identified in that project area.

LSA reviewed the following cultural resource inventories:

- *California Inventory of Historic Resources* (California Department of Parks and Recreation 1976);
- *Five Views: An Ethnic Historic Sites Survey for California (California Office of Historic Preservation 1988);*
- *California Historical Landmarks (California Office of Historic Preservation 1996);*
- *California Points of Historical Interest (California Office of Historic Preservation 1992); and*
- *Caltrans Historic Bridge Inventory (October 1, 2001); and*
- *Directory of Properties in the Historic Property Data File (California Office of Historic Preservation December 3, 2004) which includes the listings of the National Register of Historic Places, the California Register of Historical Resources, California Historical Landmarks, and California Points of Historical Interest; and*
- *Historic Engineering Landmarks of Sacramento and Northeastern California (American Society of Civil Engineers, Sacramento 1976).*

The Delta levee system is listed in *Historic Civil Engineering Landmarks of Sacramento and Northeastern California* (American Society of Civil Engineers 1976:26).

No other cultural resources listed in these publications are within or adjacent to the project area.

Literature Review. LSA reviewed publications and maps for archaeological, historical, ethnographic, and environmental information about the project area and its vicinity. See References Consulted for the publications and maps reviewed.

No cultural resources listed in these publications and maps are within or adjacent to The Preserve.

Paleontological Resources

A fossil locality search and literature review were done to (1) identify previous surveys of known paleontological sites in and near the project area, and (2) identify the formations and types of fossils that may contain significant fossil resources within the project area.

Fossil Locality Search. An online fossil locality search was conducted by LSA paleontologist Benjamin Matzen using resources provided by the Berkeley Natural History Museums on March 28, 2005 using the Berkeley Natural History Museum (BNHM) online database, specifically data from the University of California Museum of Paleontology (UCMP), Berkeley. The purpose of this search was to (1) identify previous studies and known paleontological sites within and near the project area; and (2) identify the formations and types of fossils that might be expected within and adjacent to the project area based on the existing geological and paleontological data.

There are no fossil localities within or directly adjacent to the project area; two vertebrate fossil localities lie within five miles of the project area. These vertebrate fossils are from the Late Pleistocene sediments of the Rancholabrean land mammal age (between approximately 10 to 30,000 years old), from the same formation as the sediments that underlie the project area. The fossils from these localities are horse (*Equus sp.*) and mammoth (*Mammuthus sp.*), though these fossils represent only two examples of the various vertebrate fossil taxa commonly found in these sediments (Savage 1951; Stirton 1951; Bell et al. 2004). Rancholabrean fossils are very common within Modesto Formation sediments throughout the San Joaquin Valley (Berkeley Natural History Museum 2005).

Literature Review. LSA reviewed paleontological and geological literature relevant to the project area and its vicinity. This literature was reviewed to (1) identify locations where paleontological resources are known to occur; and (2) identify the geological formations and paleontological resources that may occur in the project area.

Consultation

On January 11, 2005, LSA sent a letter with maps depicting the project area to the Native American Heritage Commission (NAHC) in Sacramento requesting a review of their sacred lands file for any Native American cultural resources that might be affected by the proposed project. Debbie Pilas-Treadway, NAHC Environmental Specialist III, responded in a faxed letter dated March 1, 2005, that

a review of the sacred lands file did not indicate the presence of Native American cultural resources "in the immediate project area" (Appendix B).

On January 11, 2005, LSA sent a letter with maps depicting the project area to the San Joaquin County Historical Society, requesting information or concerns regarding the proposed project area (Appendix B). On February 13, 2005, a follow-up phone call was made and a message was left on the Society's answering machine requesting the society to call LSA. No response has been received to date.

On March 1, 2005, LSA sent a letter and maps depicting the project area to the Haggin Museum, asking if the museum had concerns regarding the proposed project area (Appendix B). On March 22, 2005, Todd Ruhstaller, museum director, stated that the museum had no concerns about the project area.

Field Survey

The entire project area was previously surveyed by Napton in 1987 when the "entire surface [of the project area] was exposed for inspection" (Napton 1987a). On February 4, 2005, LSA archaeologist John Kelley conducted a cursory field review of the 360-acre project area. The LSA survey reviewed the current project area to confirm Napton's findings.

The project area is on fallow, nearly level, agricultural land that has been affected by agricultural activities. Ground visibility during Mr. Kelley's survey was less than 5 percent due to heavy vegetation in the project area. Small areas of bare ground were regularly exposed by trowel and rodent burrow backdirt was examined for possible archaeological deposits. The field survey was documented with maps, field notes, and photographs.

A paleontological field survey was not conducted.

Study Results

Cultural Resources

This study identified no cultural resources within the project area. One cultural resource, The Preserve Levee, was identified immediately adjacent to the project area. The Preserve levee surrounds the project area. *Historic Engineering Landmarks of Sacramento and Northeastern California* lists the Delta levee system as a significant civil engineering landmark (American Society of Civil Engineers 1976:26).

Paleontological Resources

Two vertebrate fossil localities recorded from Modesto Formation sediments are within five miles of the project area. Late Pleistocene Modesto Formation deposits within and directly adjacent to the project area may contain significant fossil resources.

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:

A. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

B. Is associated with the lives of persons important in our past;

C. 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,

D. 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 affect known and unknown resources with cultural significance.

Although no cultural resources were found onsite or within the extension corridor of Trinity Parkway/ Hammer Lane in the Shima Tract, Paleontological resources are within five miles of the project area. Consultation with the Native American Heritage Commission representatives and the San Joaquin County Historical Society did not indicate the presence of archeologically sensitive resources. If any cultural resources are found with the commencement of construction activities, the following mitigation measures will ensure that no significant impacts will occur.

Mitigation Measure CR-1a: Project personnel shall not collect or move any archaeological material. Fill soils that may be used for construction purposes shall not contain archaeological materials.

Mitigation Measure CR-1b: If deposits of prehistoric or historical archaeological materials are encountered during project activities, all work within 25 feet of the discovery should be redirected and a qualified archaeologist contacted to evaluate the finds and make recommendations. It is recommended that adverse effects to such deposits be avoided by project activities. If such deposits cannot be avoided, they should be evaluated for their eligibility for listing in the California Register of Historical Resources. If the deposits are not eligible, avoidance is not necessary. If the deposits are eligible, they will need to be avoided by adverse effects or such effects must be mitigated. Upon completion of the archaeological assessment, a report should be prepared documenting methods and results, and recommendations. The report should be submitted to the project proponent, appropriate City of Stockton agencies, and the Central California Information Center.

Prehistoric materials can include flaked-stone tools (e.g. projectile points, knives, choppers) or obsidian, chert, basalt, or quartzite toolmaking debris; culturally darkened soil (i.e., midden soil often containing heat-affected rock, ash and charcoal, shellfish remains, faunal bones, and cultural materials); and bone tools and stone milling equipment (e.g., mortars, pestles, handstones). Prehistoric sites often contain human remains. Historical materials can include wood, stone, concrete, or adobe footings, walls and other structural remains; debris-filled wells or privies; and deposits of wood, glass, ceramics, metal, and other refuse.

Mitigation Measure CR-1c: If human remains are encountered, work within 25 feet of the discovery should be redirected and the County Coroner notified immediately. At the same time, an archaeologist should be contacted to assess the situation. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.

Upon completion of the assessment, the archaeologist should prepare a report documenting the methods and results, and provide recommendations for the treatment of the human remains and any associated cultural materials, as appropriate and in coordination with the recommendations of the MLD. The report should be submitted to the project proponent, appropriate City of Stockton agencies, and the Central California Information Center.

Mitigation Measure CR-1d: If paleontological resources are encountered within five feet of the ground surface, however, they should be handled according to the accidental discovery section below.

There is a possibility of encountering significant paleontological resources in the Modesto Formation sediments of the project area that directly underlie the soils. Paleontological monitoring is recommended if the proposed project plans involve ground disturbance at a depth greater than five feet. Prior to ground disturbing activities, a qualified paleontologist should develop a monitoring plan that takes into account the specific details of construction plans as well as information from any available paleontological, geological, and geotechnical studies, as well as limited subsurface investigations.

Implementation of the above listed mitigation measures would reduce impacts affecting cultural resources to less than significant levels. Consequently, the conditions include in Significance Criterion CR-a through CR-d will be avoided.

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 government records search, prepared by Environmental Data Resources, Inc., indicates that no spills, accidents, or releases of hazardous materials or wastes have been reported for the project site. The records search also indicates that the operator of the project site is not registered as a generator of hazardous wastes. This records search is provided in Appendix I.

4.14.2 Impact Significance Criteria

Potential significant impacts associated with hazardous materials/wastes have been evaluated using the following criteria:

HAZ-a 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 listed mitigation measure would reduce impacts affecting hazardous materials/wastes to less than significant levels. Consequently, the conditions included in Significance Criterion HAZ-a will be avoided.

4.14.4 Level Of Significance After Mitigation

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

CHAPTER 5.0 GROWTH INDUCEMENT

The 1990 Stockton Land Use Element provides for orderly City growth by directing new residential and commercial growth to vacant land along the northern and southwestern edges of its urban service area. The General Plan designates 22,809 acres for residential uses, 2,794 acres for commercial and office uses, 8,332 for industrial uses, and 7,499 acres for public and quasi-public land uses.

Although the project will require the approval of a General Plan Amendment and re-zone to M-X use, it was included within the City of Stockton's 1990 General Plan as future growth areas and was annexed into the City to accommodate this growth for the period between 1990 and 2000. The General Plan has considered this project site and service and infrastructure necessary to accommodate The Preserve will be easily extended from surrounding development within the City.

The City established limits on the physical growth area by designating the Urban Service Area at the City boundaries in the 1990 General Plan, the current update to the General Plan will revise these boundaries. However, The Preserve project site is currently included within the city limits, and therefore, is also included within the Urban Service Area. As a result, the project site is considered a growth area for the City of Stockton.

CHAPTER 6.0 ALTERNATIVES

CEQA requires an EIR include a discussion of reasonable project alternatives “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."

Section 6.3 discusses impacts of each of the project alternatives. For each alternative, the alternative is described, a discussion of environmental impacts associated with the 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 Preserve is to construct a multi-product residential development designed to offer a wide range of product types to attract individuals and families from a broad economic spectrum, while providing public recreational facilities, parks, and open space areas designed to meet the needs of future Stockton.

The project applicant's objectives for the proposed project include:

- Develop a balanced and complete community in terms of land use distribution and densities, housing types and economic development opportunities.
- Promote the development of a sufficient quantity and variety of decent, safe and sanitary housing units to meet the needs of all potential residents.
- Establish a balanced transportation and circulation system that provides for the efficient movement of people and goods while minimizing the impacts of adjacent land uses.
- Provide high quality educational, cultural and recreational opportunities for all residents.

Table 6.1.A: Alternatives Matrix

Issue Area	Alternative 1 - No Project	Alternative 2 - Low Density	Alternative 3 - Neighborhood Commercial
Geology and Soils	less	same	same
Air Resources	less	less	more
Water Resources	less	similar	similar
Biological Resources	less	same	same
Noise	less	similar	same
Land Use	less	similar	similar
Traffic and Circulation	less	less	more
Population, Housing, and Socioeconomics	less	more	less
Public Services	less	less	more
Water Supply Assessment	less	less	more
Utilities and Service Systems	less	similar	more
Aesthetics/Light and Glare	less	similar	similar
Cultural Resources	less	same	same
Hazardous Materials/Wastes	similar	same	same
Reduces Significant Effects of the Project	yes	yes	no
Meet Project Objectives:			
The primary goal is to create a community that provides a diversity of options, and to facilitate the design and development of a community at a human scale with neighborhoods diverse in use and population; to introduce ample common ground into the development such as parks, trails, soccer fields and open space.	No	Yes	Yes
The residential goal is to provide a unique community with a diversity of housing options, create a safe, secure environment with walkable neighborhoods that meets the lifestyle goals of families with children and elderly alike; to design streets and a circulation system resulting in neighborhoods that balance the pedestrian and automobile, to promote and enhance the pedestrian.	No	Yes	Yes
The open space goals include promoting open spaces within neighborhoods to provide a convenient and safe destination for children to play and families to congregate;	No	Yes	No

Issue Area	Alternative 1 - No Project	Alternative 2 - Low Density	Alternative 3 - Neighborhood Commercial
to develop public walking trails on adjacent levees, providing accessibility, recreation opportunities, and a visual amenity enjoyed by the entire community.			
Promote a higher density of residential uses that enhances a diverse and more affordable housing stock and reduces the pressure to demand the conversion of additional agricultural land for residential uses, thereby meeting public and City of Stockton General Plan Policies.	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 three significant and unavoidable impacts that will occur from the proposed Preserve project. These include the following:

- Exceed thresholds for pollutants established by the SJVAPCD (air quality).
- Cumulative traffic related impacts exceed City level of service policies.

6.3 ALTERNATIVES CONSIDERED

The following alternatives to the proposed project are considered in this DEIR:

- Alternative 1 - No Project Alternative
- Alternative 2 - Low Density Residential
- Alternative 3 - Neighborhood Commercial Alternative

Alternative 1: No Project Alternative

The CEQA-required No Project Alternative would retain the site in its current condition, and would allow on-going agricultural productivity. 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 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 soil erosion. Therefore, the No Project Alternative does present 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 the existing exposed earth conditions (e.g., agricultural lands) 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 and impacts are significant and adverse. 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 not change the surface or subsurface water resources associated with the site or the region. When the land is not dry farmed, groundwater resources are utilized for crop irrigation and have had a long-term effect on the water table. Surface water conditions, including runoff and water quality conditions, would not change for the No Project Alternative.

Project development will change surface water resources. Increases in runoff are expected because of changes to the hydrology and watershed. The No Project alternative would retain existing conditions for surface and groundwater resources. Although all project related impact will be mitigated to a less than significant level, the proposed project will create changes to the existing water conditions. Therefore, the No Project Alternative presents conditions considered advantageous when compared with the proposed project (as mitigated) and is considered environmentally superior.

Comparable Impacts: Less as the Proposed Project
Reduces Significant Impacts: No

Biological Resources

Implementation of the No Project Alternative would retain the primarily 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, except for occasional mechanical farm equipment, the site conditions would not contribute towards any local noise level increases.

Implementation of the proposed project will introduce stationary and mobile noise sources with incremental increases in noise levels. However, none of the increases will exceed City noise standards for existing off-site sensitive receptors with implementation of mitigation measures, and are not considered significant. Within the project, noise effects can also be mitigated.

All noise-related impacts are mitigable for the Proposed project, however, the ambient noise environment will increase through project implementation. Therefore, the No Project Alternative presents advantages 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 land use status on the project site would not change. The existing City General Plan land use and zoning designations would remain in place (Low to Medium Density Residential and Commercial). Current agricultural land uses on-site would remain unchanged with a "no development" scenario.

Implementation of the proposed project and MDP would eliminate the site's agricultural potential. With the No Project Alternative, agricultural production would not be precluded, although is not a significant impact for the project.

Consequently, the No Project Alternative, when compared with the proposed project, is not considered environmentally superior with respect to land use conditions and changes.

Comparable Impacts: Less than the Proposed Project
Reduces Significant Impacts: No

Traffic and Circulation

No off-site traffic impacts would occur from this No Project 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. Although some locations will result in significant and adverse impacts on traffic, traffic impacts at most locations are mitigable with the roadway expansions planned in the City's capital improvement plan and long range General Plan.

The proposed project will adversely affect levels of service and congestion (after mitigation). The No Project Alternative will have no effect on levels of service and is considered advantageous when compared with the proposed project, therefore, this alternative is environmentally superior.

Comparable Impacts: Less than the Proposed Project
Reduces Significant Impacts: Yes

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 population growth, as forecast in regional planning projections consistent with the City's General Plan. Site development will also provide housing opportunities for City residents and could assist in providing affordable housing in the higher density housing product. The No Project Alternative does not provide these opportunities (housing or population). The No Project Alternative is not considered advantageous when compared with the proposed project and, therefore, is not environmentally superior.

Comparable Impacts: Less than the Proposed Project
Reduces Significant Impacts: No

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 will not increase

The proposed project will require an increase in public services because of the increase in population. The proposed project does provide adequate neighborhood and community parklands, will pay mitigation fees for regional park impacts, based on City standards. Because the proposed project does not result in any unmitigable public service impacts, the No Project alternative is considered advantageous when compared with the proposed project and is 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 supplies. 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 Trinity Parkway and are available to serve the site. The No Project alterative will not require additional water supplies, and will not require the consumption of uncertain water supply sources. Therefore, the No Project alterative 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 proposed project does not require lengthy extension of infrastructure or service lines to serve the site. These systems will be extended from Trinity Parkway 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: Yes

Aesthetics/Light and Glare

Aesthetics, 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 reflect a modern planned community subdivision, 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 by retaining the agricultural/open space character, the No Project Alternative presents significant advantages over the proposed project 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, existing agricultural chemicals used on-site would not be removed. Development of the proposed project will improve site conditions with respect to the sustained use of agricultural chemicals. Nonetheless, household chemicals will be used for landscaping, although should represent an improvement over the agricultural chemical usage. Therefore, the No Project Alternative is not considered advantageous and is not environmentally superior.

Comparable Impacts: Similar to the Proposed Project
Reduces Significant Impacts: No

Conclusion

The proposed project has significant impacts with respect to air quality, and traffic. These impacts are avoided with the No Project Alternative because of 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. Development of the proposed project will improve conditions relating to use of agricultural chemicals. The No Project Alternative is considered an environmentally superior alternative.

Alternative 2: Low Density Residential

The Low Density Residential Alternative would consist of 300 single family dwelling units, or 1,354 fewer homes than the proposed project. The alternative would develop one-acre parcels comprising all low density residential estates. 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 the 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

As noted under Traffic and Circulation (below) construction of the project at lower densities would result in 9,620 fewer daily trips, 707 fewer AM and 932 fewer PM peak hour trips, as shown in Table 6.3.A. The reduced number of vehicle trips will likely generate lower levels of pollutants when compared to the proposed project, yet is expected to add to the exceedance of SJVAPCD standards for ROG. The Low Density Alternative would result in similar levels of pollutants generated on-site during construction because of complete site development.

Under the Low Density Alternative, the decreased number of vehicles and vehicle trips will reduce the pollutants emitted by operation of the proposed 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 have similar effects and would require similar measures in preparing and maintaining the project site for stormwater collection, conveyance, and discharge. The mitigation measures are similar under the proposed project. 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

Biological Resources

Implementation of the Low Density Alternative would require the same measures in preparing and maintaining the project site relative to habitat losses. Under the Low Density Alternative, the site would be graded, drainage canals would be filled, stormwater would be discharged to Mosher Slough or Bear Creek and habitat for special status species would be lost. These effects are the same under the proposed project. Therefore, the Minimum 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 generate traffic noise from residential uses. 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 Trinity Parkway primarily from cumulative traffic conditions. It is expected 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: Similar to the Proposed Project
Reduces Significant Impacts: No

Land Use

Implementation of the Low Density Alternative would require similar approvals to develop the site. A General Plan amendment and rezoning would be necessary to change the site from low to medium density residential and commercial to mixed use as with the proposed project. Agricultural land would be lost and high-density housing would not be provided. These impacts are similar under the proposed project. 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 9,620 fewer daily trips, 707 fewer AM and 932 fewer PM peak hour trips, as shown in Table 6.3.A.

In the Existing Plus Approved Projects Plus Minimum Density scenario, the deficient intersections would likely improve and would meet the City's level of service policies. All project impacts identified in the Cumulative scenario would remain significant, and 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 be required for the Low Density Alternative, under the cumulative scenario. However, because the level of service impacts are reduced to acceptable levels in the Existing Plus Approved Projects Plus Minimum Density scenario, this alternative is environmentally superior and reduces a significant impact.

Comparable Impacts: Less than the Proposed Project
Reduces Significant Impacts: Yes

Table 6.3.A: Low Density Alternative Trip Generation Summary

Number of Units	Component	Daily	AM Peak Hour			PM Peak Hour		
			Inbound	Outbound	Total	Inbound	Outbound	Total
300	Single-family Homes	2860	55	164	219	181	107	288
557	Student Elementary School	720	129	105	234	23	28	51
Total		**3580**	**183**	**270**	**453**	**204**	**135**	**339**
Proposed Project		13200	308	852	1160	804	467	1271
Reduction in Trips		-9620	-124	-583	-707	-599	-333	-932

Source: Fehr & Peers 2006

Population, Housing, and Socioeconomics

The Low Density Alternative would reduce the population of the project to 942 individuals. This represents 4,252 fewer individuals than the proposed project. The Low Density Alternative would not provide any affordable, high density housing which is in conflict with City policies. For this reason, the Low Density Alternative is not environmentally superior.

Comparable Impacts: More than the Proposed Project

Reduces Significant Impacts: No

Public Services

The Low Density Alternative will add 933 individuals to the City's population base. Demand for fire, police, parklands, and library services would be reduced accordingly when compared with the proposed project. Based on City standards, the Low Density Alternative would require 2 acres of community parks and 1 acre of neighborhood parks. The Low Density Alternative would be expected to meet the City's requirements for community and neighborhood parklands.

Despite the offsetting fees for public services required by the proposed project, the Low Density Alternative provides advantages for public services when compared with the Proposed Project because of less demand on libraries, parklands, police and fire. For this reason, the Low Density Alternative is environmentally superior.

Comparable Impacts: Less than the Proposed Project
Reduces Significant Impacts: No

Water Supply Assessment

The Water Supply Assessment indicates water supplies will be available to serve the proposed project. This impact would be less for the Low Density Alternative than the proposed project, therefore, the Low Density Alternative is not environmentally superior to the proposed project.

Comparable Impacts: Less than the Proposed Project
Reduces Significant Impacts: No

Utilities and Service Systems

Under the Low Density Alternative, the demand for utilities would be decreased. However, since the utilities and service systems still require extension into the project site, 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: Similar to 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 as the proposed project. 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 (e.g., past use of agricultural chemicals).

Development of the Low Density Alternative will present the same conditions as the proposed project and is not considered advantageous or environmentally superior.

Comparable Impacts: Same as the Proposed Project
Reduces Significant Impacts: No

Conclusion

The Low Density Alternative would have fewer significant impacts than the proposed project. Impacts to public services and water supply would be reduced because of fewer individuals. The severity of impacts to air quality, and traffic will likely be reduced to less than significant. Overall the Low Density Alternative is an environmentally superior alternative because of decreased impacts to air quality and traffic.

Alternative 3: Neighborhood Commercial Alternative

The Neighborhood Commercial Alternative would replace a portion of the housing with a 5 acre commercial development (approximately 50,000 square feet), and increase high density housing to achieve a greater yield. This alternative would construct 1,306 single-family dwelling units and 762 high-density dwelling units. All other project uses would remain the same.

Geology and Soils

Implementation of the Neighborhood Commercial Alternative would create the same geophysical issues as the proposed project. Like the proposed project, structures proposed for the Neighborhood Commercial 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 Neighborhood Commercial Alternative.

With appropriate measures, geophysical conditions present on-site are capable of accommodating the proposed project and the Neighborhood Commercial Alternative. Because there are no geophysical conditions that cannot be mitigated, the Neighborhood Commercial Alternative does not present any advantages regarding geophysical resources, and therefore, is not considered environmentally superior to the proposed project.

Comparable Impacts: Same as the Proposed Project
Reduces Significant Impacts: No

Air Resources

As noted under Traffic and Circulation below, the Neighborhood Commercial Alternative would result in an additional 6,070 daily trips, 165 AM and 546 PM peak hour trips as shown in Table 6.3.B. The increased number of vehicle trips will likely generate higher levels of pollutants when compared to the proposed project. The Neighborhood Commercial Alternative would result in equivalent levels of pollutants generated on-site during construction when compared to the project.

Under the Neighborhood Commercial Alternative, the increased number of vehicles and vehicle trips will increase the pollutants emitted by operation of the project. As such, the Neighborhood Commercial Alternative is not considered advantageous to the proposed project and is not environmentally superior.

Comparable Impacts: More than the Proposed Project
Reduces Significant Impacts: No

Water Resources

Implementation of the Neighborhood Commercial Alternative would have similar effects and would require the same measures in preparing and maintaining the project site for stormwater collection, conveyance, and discharge. These measures are the similar under the proposed project. Therefore, the Neighborhood Commercial 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

Biological Resources

Implementation of the Neighborhood Commercial Alternative would require the same measures in preparing and maintaining the project site relative to biological resources. Under the Neighborhood Commercial Alternative, the site would be graded, drainage canals would be filled, stormwater would be discharged to Mosher Slough or Bear Creek, and habitat for special status species would be lost.

These effects are the same under the proposed project. Therefore, the Neighborhood Commercial 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 Neighborhood Commercial Alternative would generate traffic noise form urban uses. Although the number of vehicles and trips on project roadways and noise levels would be increased under this alternative, the same mitigation would be necessary to offset noise impacts for homes along Trinity Parkway. It is expected the same mitigation measures would be required for the Neighborhood Commercial Alternative. Therefore, the Neighborhood Commercial 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 Neighborhood Commercial Alternative would require similar approvals to develop the site. A General Plan amendment and rezoning would be necessary to change the City's zoning from low to medium or high density residential. However, with site development, agricultural land would be lost. These impacts are similar under the proposed project. Therefore, the Neighborhood Commercial 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

This alternative would construct 1,306 single-family units, 762 high-density units, and 50,000 square feet of commercial uses, resulting in an additional 6,070 daily trips, 165 AM and 546 PM peak hour trips as shown in Table 6.3.B.

In the Existing plus Approved Projects plus Neighborhood Commercial Alternative scenario, the deficient intersections would remain deficient and would likely further deteriorate. All project impacts identified in the Cumulative scenario would remain significant. As a result, this alternative is not advantageous and is not environmentally superior.

Comparable Impacts: More than the Proposed Project
Reduces Significant Impacts: No

Population, Housing, and Socioeconomics

The Neighborhood Commercial Alternative would add 6,494 individuals to the population base in Stockton. This represents 1,300 more individuals than the proposed project. Although would be within the range of population forecasts allocated to the site in the General Plan. The Neighborhood Commercial Alternative would provide affordable, high density housing as required in the City policies. As a result of the potential affordable housing opportunities, the Neighborhood Commercial Alternative would be advantageous when compared to the proposed project and is considered environmentally superior.

Comparable Impacts: Less than the Proposed Project
Reduces Significant Impacts: No

Table 6.3.B: Neighborhood Commercial Alternative Trip Generation Summary

Units	Component	Daily	AM Peak Hour			PM Peak Hour		
			Inbound	Outbound	Total	Inbound	Outbound	Total
1306	Single-Family Homes	11060	231	693	924	682	401	1083
762	Condominiums	3610	45	217	262	213	105	318
207	Student Elementary School	270	48	39	87	9	10	19
50000	Retail	4330	32	20	52	191	206	397
Total		**19270**	**355**	**970**	**1325**	**1095**	**722**	**1817**
Proposed Project		13200	308	852	1160	804	467	1271
Increase in Trips		6070	48	117	165	291	255	546

Source: Fehr & Peers 2006

Public Services

The Neighborhood Commercial Alternative will add 1,300 more individuals to the City's population base. Demand for fire, police, parklands, and library services would increase accordingly when compared with the proposed project. Based on City standards, the Neighborhood Commercial Alternative would require 13 acres of community parks and 6.5 acres of neighborhood parks. The Neighborhood Commercial Alternative would be expected to meet the City's policies for parklands.

The Neighborhood Commercial Alternative does not provide advantages for public services when compared with the proposed project because of the increased demand for libraries, police, and fire. For these reasons, the Neighborhood Commercial Alternative is not environmentally superior.

Comparable Impacts: More than the Proposed Project

Reduces Significant Impacts: No

Water Supply Assessment

The Water Supply Assessment indicates water supplies will be available to serve the proposed project. While the water demand will increase with this alternative, the increase is not expected to be significant for water supply, although will increase on a cumulative basis. This impact would be slightly higher for the Neighborhood Commercial Alternative; therefore, the Neighborhood Commercial Alternative is not environmentally superior to the proposed project.

Comparable Impacts: More than the Proposed Project
Reduces Significant Impacts: No

Utilities and Service Systems

Under the Neighborhood Commercial Alternative, the demand for utilities would likely be increased. Service system requirements would be similar to the proposed project. The Neighborhood Commercial Alternative does not provide significant advantages to the proposed project and is not environmentally superior.

Comparable Impacts: More than the Proposed Project
Reduces Significant Impacts: No

Aesthetics/Light and Glare

Like the proposed project, the Neighborhood Commercial Alternative would change the undeveloped, agricultural nature of the site to a developed, urban condition. The Neighborhood Commercial Alternative would create similar light and shadow conditions when compared with the project. Therefore, the Neighborhood Commercial Alternative is not considered advantageous for aesthetics and light/glare and is not environmentally superior.

Comparable Impacts: Similar to the Proposed Project
Reduces Significant Impacts: No

Cultural Resources

The Neighborhood Commercial Alternative would create the same impacts to cultural resources as the proposed project. This alternative is not considered advantageous with respect to cultural resources when compared with the proposed project. Therefore, this alternative is not environmentally superior.

Comparable Impacts: Same as the Proposed Project
Reduces Significant Impacts: No

Hazardous Materials/Wastes

The same conditions exist for the Neighborhood Commercial Alternative as the proposed project (e.g., past use of agricultural chemicals).

Development of the Neighborhood Commercial 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 Neighborhood Commercial Alternative would have more significant impacts than the proposed project. Impacts to air quality, traffic, public services/utilities, and water supply would be increased because of more individuals and vehicles generated under this alternative. Overall, the Neighborhood Commercial Alternative is not an environmentally superior alternative because of increased impacts when compared to the proposed project.

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.
- 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 could 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 associated with agricultural lands 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.
- Increased levels of public services will be required to serve the proposed project. Regional park land shortages will be aggravated by project demand.
- Water supplies for consumption, sewage treatment, and other utility resources will be permanently committed to the project site.
- The current undeveloped, agrarian character of the site will be committed to mixed use, 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.

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.
- Feasible mitigation does not exist to offset all traffic-related cumulative impacts.

In light of the adverse impacts identified, a Statement of Overriding Considerations is needed prior to project approval.

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APPENDIX A

NOTICE OF PREPARATION (NOP)/INITIAL STUDY, NOP CORRESPONDENCE

APPENDIX B

MASTER DEVELOPMENT PLAN

APPENDIX C

DEVELOPMENT AGREEMENT

APPENDIX D

GEOTECHNICAL REPORT

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AIR QUALITY

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WATER SUPPLY ASSESSMENT

APPENDIX I

INITIAL SITE ASSESSMENT

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FEMA DOCUMENTATION

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